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 January 31, 2021
OR
☐ ***TRANSITION REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934***

For the transition period from ___ to ___

Commission file number 0-15451

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

Connecticut	**06-0854886**
(State or other jurisdiction of incorporation or organization)	*(IRS Employer Identification No.)*
15 Secor Road, Brookfield, Connecticut	**06804**
(Address of principal executive offices)	*(Zip Code)*
Registrant's telephone number, including area code	**(203) 775-9000**

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

Title of each class	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 ☒

The registrant had 63,384,764 shares of common stock outstanding as of February 22, 2021.

PHOTRONICS, INC.
QUARTERLY REPORT ON FOM 10-Q
JANUARY 31, 2021

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Forward-Looking Statements

This Quarterly Report on Form 10-Q (“Form 10-Q”) contains forward-looking statements, as defined by the Securities and Exchange Commission (“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,” “plans,” “predicts”, 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, phone conferences, or by other means, we may publish, disseminate, or otherwise make available, forward-looking statements of this nature, 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 the Company 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 Company’s 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 Annual Report on 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)

	January 31, 2021	October 31, 2020
ASSETS		
Current assets:		
Cash and cash equivalents	$ 278,539	$ 278,665
Accounts receivable, net of allowance for credit losses of $1,348 in 2021 and $1,334 in 2020	139,708	134,470
Inventories	56,407	57,269
Other current assets	31,458	29,735
Total current assets	506,112	500,139
Property, plant and equipment, net	672,398	631,475
Intangible assets, net	2,383	3,437
Deferred income taxes	21,549	22,070
Other assets	29,620	31,061
Total assets	$ 1,232,062	$ 1,188,182
LIABILITIES AND EQUITY		
Current liabilities:		
Short-term debt	$ -	$ 4,708
Current portion of long-term debt	21,641	8,970
Accounts payable	70,870	75,378
Accrued liabilities	53,020	53,883
Total current liabilities	145,531	142,939
Long-term debt	79,984	54,980
Other liabilities	28,051	27,997
Total liabilities	253,566	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, 63,506 shares issued and 62,284 outstanding at January 31, 2021, and 63,138 shares issued and outstanding at October 31, 2020	635	631
Additional paid-in capital	508,974	507,336
Retained earnings	287,073	279,037
Treasury stock, 1,222 shares at January 31, 2021	(13,209)	-
Accumulated other comprehensive income	32,029	17,958
Total Photronics, Inc. shareholders' equity	815,502	804,962
Noncontrolling interests	162,994	157,304
Total equity	978,496	962,266
Total liabilities and equity	$ 1,232,062	$ 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	
	January 31, 2021	February 2, 2020
Revenue	$ 152,067	$ 159,736
Cost of goods sold	121,538	125,134
Gross profit	30,529	34,602
Operating expenses:		
Selling, general and administrative	14,053	14,219
Research and development	4,710	4,080
Total operating expenses	18,763	18,299
Operating income	11,766	16,303
Other income (expense):		
Foreign currency transactions impact, net	1,382	4,736
Interest income and other income, net	121	759
Interest expense	(823)	(1,798)
Income before income tax provision	12,446	20,000
Income tax provision	2,937	9,072
Net income	9,509	10,928
Net income attributable to noncontrolling interests	1,473	628
Net income attributable to Photronics, Inc. shareholders	$ 8,036	$ 10,300
Earnings per share:		
Basic	$ 0.13	$ 0.16
Diluted	$ 0.13	$ 0.16
Weighted-average number of common shares outstanding:		
Basic	62,475	65,554
Diluted	63,005	66,449

See accompanying notes to condensed consolidated financial statements.

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

	Three Months Ended	
	January 31, 2021	**February 2, 2020**
Net income	$ 9,509	$ 10,928
Other comprehensive income (loss), net of tax of $:		
Foreign currency translation adjustments	18,289	(1,564)
Other	(1)	17
Net other comprehensive income (loss)	18,288	(1,547)
Comprehensive income	27,797	9,381
Less: comprehensive income attributable to noncontrolling interests	5,690	1,818
Comprehensive income attributable to Photronics, Inc. shareholders	$ 22,107	$ 7,563

See accompanying notes to condensed consolidated financial statements.

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

	Three Months Ended January 31, 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	-	-	-	8,036	-	-	1,473	9,509
Other comprehensive income	-	-	-	-	-	14,071	4,217	18,288
Shares issued under equity plans	368	4	337	-	-	-	-	341
Share-based compensation	-	-	1,301	-	-	-	-	1,301
Purchase of treasury stock	-	-	-	-	(13,209)	-	-	(13,209)
Balance at January 31, 2021	63,506	$ 635	$ 508,974	$ 287,073	$ (13,209)	$ 32,029	$ 162,994	$ 978,496

	Three Months Ended February 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	-	-	-	10,300	-	-	628	10,928
Other comprehensive (loss) income	-	-	-	-	-	(2,737)	1,190	(1,547)
Shares issued under equity plans	549	5	2,605	-	-	-	-	2,610
Share-based compensation	-	-	1,356	-	-	-	-	1,356
Purchase of treasury stock	-	-	-	-	(11,000)	-	-	(11,000)
Repurchase of common stock of subsidiary	-	-	255	-	-	-	(893)	(638)
Balance at February 2, 2020	66,144	$ 661	$ 528,535	$ 264,222	$ (11,000)	$ (11,742)	$ 142,125	$ 912,801

See accompanying notes to condensed consolidated financial statements.

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

	Three Months Ended	
	January 31, 2021	February 2, 2020
Cash flows from operating activities:		
Net income	$ 9,509	$ 10,928
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	23,724	24,626
Share-based compensation	1,301	1,356
Changes in assets and liabilities:		
Accounts receivable	(2,011)	(6,699)
Inventories	2,095	(1,435)
Other current assets	(824)	4,724
Accounts payable, accrued liabilities, and other	(7,507)	(2,715)
Net cash provided by operating activities	26,287	30,785
Cash flows from investing activities:		
Purchases of property, plant and equipment	(17,532)	(13,807)
Government incentives	397	2,417
Other	(61)	(139)
Net cash used in investing activities	(17,196)	(11,529)
Cash flows from financing activities:		
Proceeds from debt	6,205	1,140
Purchase of treasury stock	(13,209)	(11,000)
Repayments of debt	(7,796)	(389)
Proceeds from share-based arrangements	765	2,886
Other	(315)	(248)
Net cash used in financing activities	(14,350)	(7,611)
Effect of exchange rate changes on cash, cash equivalents, and restricted cash	5,195	149
Net (decrease) increase in cash, cash equivalents, and restricted cash	(64)	11,794
Cash, cash equivalents, and restricted cash at beginning of period	281,602	209,291
Cash, cash equivalents, and restricted cash at end of period	$ 281,538	$ 221,085
Supplemental disclosure of non-cash information:		
Accrual for property, plant and equipment purchased during the period	$ 4,938	$ 1,511

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 semiconductors and flat-panel displays (“FPDs” or “displays”), and are used as masters to transfer circuit patterns onto semiconductor wafers and FPD substrates during the fabrication of integrated circuits (“ICs” or “semiconductors”), 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 two recently constructed facilities in China. 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 which 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.

Reclassified prior period amounts have been made to conform to the current period presentation, including the separation of *Foreign currency transaction impact, net*, from *Interest income and other income, net*, on the condensed consolidated statements of income.

Our business is typically impacted during the first, and sometimes the second, quarters of our fiscal year by the North American, European, and Asian holiday periods, as some customers reduce their development and buying activities during those periods. Operating results for the interim period are not necessarily indicative of the results that may be expected for the fiscal year ending October 31, 2021. For further information, refer to the consolidated financial statements, and notes thereto, included in our Annual Report on Form 10-K for the year ended October 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* on our January 31, 2021 and October 31, 2020, 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 on our condensed consolidated statements of cash flows:

	January 31, 2021	October 31, 2020
Cash and cash equivalents	$ 278,539	$ 278,665
Restricted Cash	2,999	2,937
	$ 281,538	$ 281,602

NOTE 3 - INVENTORIES

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

	January 31, 2021	October 31, 2020
Raw materials	$ 55,458	$ 56,389
Work in process	935	767
Finished goods	14	113
	$ 56,407	$ 57,269

NOTE 4 - PROPERTY, PLANT AND EQUIPMENT, NET

Property, plant and equipment consists of the following:

	January 31, 2021	October 31, 2020
Land	$ 12,653	$ 12,422
Buildings and improvements	182,540	179,162
Machinery and equipment	1,845,975	1,812,791
Leasehold improvements	21,587	21,157
Furniture, fixtures and office equipment	16,354	15,665
Construction in progress	113,282	70,915
	2,192,391	2,112,112
Accumulated depreciation and amortization	(1,519,993)	(1,480,637)
	$ 672,398	$ 631,475

Depreciation and amortization expense for property, plant and equipment was $22.6 million for the three-month period ended January 31, 2021, and $23.5 million for the three-month period ended February 2, 2020, respectively.

Right-of-use assets resulting from finance leases are included in above property, plant and equipment as follows:

	January 31, 2021	October 31, 2020
Construction in progress	$ 35,560	$ -
Less accumulated amortization	-	-
	$ 35,560	$ -

NOTE 5 - PDMCX JOINT VENTURE

In January 2018, Photronics, through its wholly owned Singapore subsidiary (hereinafter, within this Note “we”, “Photronics”, “us” or “our”), and Dai Nippon Printing Co., Ltd., through its wholly owned subsidiary “DNP Asia Pacific PTE, Ltd.” (“DNP”) entered into a joint venture under which DNP obtained a 49.99% interest in our IC business in Xiamen, China. The joint venture, known as “Xiamen American Japan Photronics Mask Co., Ltd.” (“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 total investment per the PDMCX operating agreement (“the Agreement”) is $160 million. As of January 31, 2021, Photronics and DNP had each contributed cash of approximately $65 million, and PDMCX had obtained local financing of approximately $50 million; thus both parties have fulfilled their initial investment commitments under the Agreement. As discussed in Note 6, liens were granted to the local financing entity on assets with a total carrying value of $95.7 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 losses from the operations of PDMCX of $0.1 million, and $3.7 million during the three-month periods ended January 31, 2021 and February 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 January 31, 2021, was $56.8 million.

As required by the guidance in Topic 810 - “Consolidation” of the Accounting Standards Codification (“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.

	January 31, 2021		October 31, 2020	
Classification	**Carrying Amount**	**Photronics Interest**	**Carrying Amount**	**Photronics Interest**
Current assets	$ 43,753	$ 21,881	$ 56,095	$ 28,053
Non-current assets	144,069	72,049	141,097	70,562
Total assets	187,822	93,930	197,192	98,615
Current liabilities	29,545	14,776	31,922	15,964
Non-current liabilities	44,620	22,314	55,676	27,844
Total liabilities	74,165	37,090	87,598	43,808
Net assets	$ 113,657	$ 56,840	$ 109,594	$ 54,807

NOTE 6 - DEBT

Short-term debt was $0.0 million, and $4.7 million as of January 31, 2021 and October 31, 2020, respectively. 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.

As of January 31, 2021	Xiamen Project Loans	Xiamen Working Capital Loans	Hefei Equipment Loan	Finance Lease	Total
Principal due:					
Next 12 months	$ 6,961	$ 8,861	$ -	$ 5,819	$ 21,641
Months 13 – 24	$ 10,055	$ 990	$ 4,641	$ 5,445	$ 21,131
Months 25 – 36	10,055	3,465	1,701	5,509	20,730
Months 37 – 48	10,055	-	-	18,787	28,842
Months 49 – 60	9,281	-	-	-	9,281
Thereafter	-	-	-	-	-
Long-term debt	$ 39,446	$ 4,455	$ 6,342	$ 29,741	$ 79,984
Interest rate at balance sheet date	4.90%	4.53% - 4.61%	4.20%	1.14%	
Basis spread on interest rates	25.00	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	December 2024	
Periodic payment amount	Increases as loans mature	Increases as loans mature	Varies [1]	Varies [3]	
Periodic payment frequency	Semiannual, on individual loans	Semiannual, on individual loans	Semiannual[2]	Monthly	
Loan collateral (carrying amount)	$ 95,703	N/A	$ 89,799	$ 35,560[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 approved loan principal.
[2] Semiannual repayments commence in March 2022.
[3] See Note 8 for periodic payment amounts.
[4] Amount represents the carrying amount of the related right-of-use asset, in which the lessor has a secured interest.

As of October 31, 2020	Xiamen Project Loans	Xiamen Working Capital Loans	Total
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	$ 43,358	$ 11,622	$ 54,980
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 was approved for credit of 345 million RMB (approximately $53.4 million, at the balance sheet date), subject to certain limitations related to PDMCX registered capital at the time of the initial approval, pursuant to which PDMCX has and will enter into separate loan agreements ("the Project Loans") for intermittent borrowings. The Project Loans, which are denominated in RMB, are being used to finance certain capital expenditures for our Xiamen, China facility. PDMCX granted liens on its land use right, building, and certain equipment as collateral for the Project Loans. As of January 31, 2021, PDMCX had outstanding borrowings of 300.0 million RMB ($46.4 million) against this approval. The interest rates on the Project Loans are variable, and based on the RMB Loan Prime Rate of the National Interbank Funding Center. 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.

Xiamen Working Capital Loans

In November 2018, PDMCX was approved 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. Under this credit agreement (the "Working Capital Loans"), PDMCX can borrow up to 140.0 million RMB to pay value-added taxes ("VAT"), and up to 60.0 million RMB to fund operations; combined total borrowings are limited to the equivalent of $25.0 million. As of January 31, 2021, PDMCX had 86.1 million RMB ($13.3 million) outstanding against the approval to pay VAT and no outstanding borrowings against the approval to fund operations. The interest rates on the approval to pay VAT are variable, based on the RMB Loan Prime Rate of the National Interbank Funding Center. Interest incurred on the VAT 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.

Hefei Equipment Loan

In October 2020, our Hefei facility was approved to borrow 200 million RMB (approximately $30.9 million, at the balance sheet date) from the China Construction Bank Corporation. Loan proceeds have been, and will be, used to fund the purchases of two lithography tools at our facility in Hefei, China. As of January 31, 2021, we had 41.0 million RMB ($6.3 million) outstanding against this approval. 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 has covenants and provisions, certain of which relate to the assets pledged as security for the loan, which we were not in compliance with at January 31, 2021. We obtained waivers from the lender for all instances of noncompliance, but are precluded from borrowing additional funds against this facility until our noncompliance with this provision has been cured. In addition, the loan includes covenants for the ratio of total liabilities to total assets and the ratio of current assets to current liabilities.

Finance Lease

In December 2020, under a Master Lease Agreement which we entered into effective July 2019, we entered into a $35.6 million lease for a high-end lithography tool. Upon entering into the lease, our prior $3.5 million short-term obligation to the lessor became a portion of this lease liability. See Note 8 for additional information on this lease.

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 foreign 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 January 31, 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 January 31, 2021, and $50 million was available for borrowing. The interest rate on the Credit Agreement (1.12% at January 31, 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 governmental 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 is 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 $6.8 million are included in *Other current assets*, and contract liabilities of $7.5 million and $5.3 million are included in *Accrued liabilities* and *Other liabilities*, respectively, in our January 31, 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-month periods ended January 31, 2021 or February 2, 2020, and we recognized $2.5 million and $1.2 million, respectively, of revenue from the settlement of contract liabilities that existed at the beginning of those three-month 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 doubtful accounts. In the event that an amount is determined to be uncollectible, we charge the allowance for doubtful accounts and derecognize the related receivable. Credit losses incurred on our accounts receivable during the three-month periods ended January 31, 2021 or February 2, 2020, were immaterial.

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’ve 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-month periods ended January 31, 2021 and February 2, 2020, disaggregated by product type, geographic origin, and timing of recognition.

	Three Months Ended	
Revenue by Product Type	**January 31, 2021**	**February 2, 2020**
IC		
High-end	$ 36,780	$ 41,041
Mainstream	68,176	65,937
Total IC	$ 104,956	$ 106,978
FPD		
High-end	$ 34,645	$ 39,770
Mainstream	12,466	12,988
Total FPD	$ 47,111	$ 52,758
	$ 152,067	$ 159,736

	Three Months Ended	
Revenue by Geographic Origin	**January 31, 2021**	**February 2, 2020**
Taiwan	$ 56,590	$ 66,114
Korea	38,783	40,736
United States	26,604	25,067
China	20,997	19,900
Europe	8,575	7,543
All other Asia	518	376
	$ 152,067	$ 159,736

	Three Months Ended	
Revenue by Timing of Recognition	**January 31, 2021**	**February 2, 2020**
Over time	$ 141,284	$ 137,696
At a point in time	10,783	22,040
	$ 152,067	$ 159,736

Contract Costs

We pay commissions to third-party sales agents for certain sales that they obtain for us. 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 would 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 such 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 (at our option) 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 date of the lease agreement or commitment, if earlier. Our evaluation considers whether the arrangement 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. The present value of lease payments over the term of the lease, which is determined using our incremental borrowing rate for collateralized loans at the commencement date of the lease, provides the basis for the initial measurement of right-of-use assets and their related lease liabilities. Variable lease payments, other than those that are dependent on an index or on a rate, are not included in the measurement of right-of-use (ROU) assets and their related lease liabilities. Lease terms will include extension periods if the lease agreement includes an option to extend the lease that we are reasonably certain to exercise. As allowed under ASC Topic 842 – “Leases” 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 December 2020, we entered into a five-year $35.6 million finance lease for a high-end lithography tool. Monthly payments on the lease, which commenced in January 2021, increase 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 for the forty-eighth monthly payment, we may exercise an early buy-out option to purchase the tool at 39.84% of its original cost. If we do not exercise the early buy-out 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 buy-out option, we have classified the lease as a finance lease. The interest rate of the lease, which is the rate implicit in the lease, is 1.14%.

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 buy-out option to purchase the tool at 33.684638% of its original cost. If we do not exercise the early buy-out 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 buy-out option, we have classified the lease as a finance lease. The interest rate of the lease, which is the rate implicit in the lease, is 1.09%.

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

Classification	**January 31, 2021**	**October 31, 2020**
ROU Assets – Operating Leases		
Other assets	$ 7,517	$ 7,706
ROU Assets – Finance Leases		
Property, plant and equipment	$ 35,560	$ -
Lease Liabilities – Operating Leases		
Accrued liabilities	$ 2,282	$ 2,175
Other liabilities	4,792	5,008
	$ 7,074	$ 7,183
Lease Liabilities – Finance Leases		
Current portion of long-term debt	$ 5,819	$ -
Long-term debt	29,741	-
	$ 35,560	$ -

The following table presents future lease payments under noncancelable operating and finance leases as of January 31, 2021. Imputed interest represents the difference between undiscounted cash flows and discounted cash flows.

	Operating Leases	**Finance Lease**
Remainder of fiscal year 2021	$ 1,814	$ 4,506
2022	2,306	6,054
2023	1,311	5,760
2024	783	5,760
2025	639	14,661
Thereafter	550	-
Total lease payments	7,403	36,741
Imputed interest	329	1,181
Lease liabilities	$ 7,074	$ 35,560

The following table presents lease costs for the three-month periods ended January 31, 2021 and February 2, 2020.

	Three Months Ended	
	January 31, 2021	**February 2, 2020**
Operating lease costs	$ 664	$ 1,178
Short-term lease costs	$ 46	$ 122
Variable lease costs	$ 144	$ -
Interest on lease liabilities	$ 35	$ -
Amortization of ROU assets	$ -	$ -

Presented below is other information related to our operating and finance leases.

	Three Months Ended	
Supplemental cash flows information:	**January 31, 2021**	**February 2, 2020**
Operating cash flows used for operating leases	$ 603	$ 1,885
Operating cash flows used for finance leases	$ 35	$ -
Financing cash flows used for finance leases	$ -	$ -
ROU assets obtained in exchange for operating lease obligations	$ 267	$ 282
ROU assets obtained in exchange for finance lease obligations	$ 35,560	$ -

	As of			
	January 31, 2021		October 31, 2020	
Classification	Weighted-average remaining lease term (in years)	Weighted-average discount rate	Weighted-average remaining lease term (in years)	Weighted-average discount rate
Operating leases	3.9	2.37%	4.1	2.37%
Finance lease	3.9	1.14%	-	-

NOTE 9 - SHARE-BASED COMPENSATION

In March 2016, shareholders approved a new equity incentive compensation plan (the “Plan”), under which incentive stock options, non-qualified stock options, stock grants, stock-based awards, restricted stock, restricted stock units, stock appreciation rights, performance units, performance stock, and other stock or cash awards may be granted. Shares to be issued under the Plan may be authorized and unissued shares, issued shares that have been reacquired by us (in the open-market or in private transactions), or a combination thereof. The maximum number of shares of common stock approved that may be issued under the Plan is four million shares. Awards may be granted to officers, employees, directors, consultants, advisors, and independent contractors of Photronics 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-month periods ended January 31, 2021 and February 2, 2020, were $1.3 million and $1.4 million, respectively. No share-based compensation cost was capitalized as part of an asset during the periods presented, and related income tax benefits were not material during those 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 541,200 restricted stock awards granted during the three-month period ended January 31, 2021, with a weighted-average grant-date fair value of $11.13 per share, and there were 522,000 restricted stock awards granted during the three-month period ended February 2, 2020, with a weighted-average grant-date fair value of $15.26 per share. As of January 31, 2021, the total compensation cost not yet recognized related to unvested restricted stock awards was approximately $10.6 million. That cost is expected to be recognized over a weighted-average amortization period of 3.0 years. As of January 31, 2021, there were 1,059,001 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 the 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 three-month period ended January 31, 2021, or the three-month period ended February 2, 2020. The Company received cash from option exercises of $0.7 million and $2.8 million for the three-month periods ended January 31, 2021 and February 2, 2020, respectively. As of January 31, 2021, the total unrecognized compensation cost related to unvested option awards was approximately $0.3 million. That cost is expected to be recognized over a weighted-average amortization period of 1.6 years.

Information on outstanding and exercisable option awards as of January 31, 2021, is presented below.

Options	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value
Outstanding at January 31, 2021	1,524,777	$ 9.39	4.6 years	$ 2,954
Exercisable at January 31, 2021	1,412,200	$ 9.40	4.3 years	$ 2,747

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 23.6% in the three-month period ended January 31, 2021 differs from the U.S. statutory rate of 21% primarily due to the non-recognition of the tax benefit of losses that, in certain jurisdictions, have been offset by valuation allowances and non-U.S. pre-tax income being taxed at higher statutory rates in the non-U.S. jurisdictions that were partially offset by the benefits of investment credits in a foreign jurisdiction.

The effective tax rate of 45.4% differs from the U.S. statutory rate of 21.0% in the three-month period ended February 2, 2020, 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 benefit of a tax holiday 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 more likely than not that the tax benefits will not be realized. In the three-month period ended February 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 $2.6 million and $2.7 million at January 31, 2021 and October 31, 2020, respectively, of which $1.9 million and $2.0 million, if recognized, would favorably impact the Company’s effective tax rate. Accrued interest and penalties related to unrecognized tax benefits was $0.1 million at January 31, 2021 and October 31, 2020. 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 that 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.

We were granted a five-year tax holiday in Taiwan that expired on December 31, 2019. This tax holiday reduced foreign taxes by $0.1 million in the three-month period ended February 2, 2020; per share impact was immaterial.

NOTE 11 - EARNINGS PER SHARE

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

	Three Months Ended	
	January 31, 2021	February 2, 2020
Net income attributable to Photronics, Inc. shareholders	$ 8,036	$ 10,300
Effect of dilutive securities	-	-
Earnings used for diluted earnings per share	$ 8,036	$ 10,300
Weighted-average common shares computations:		
Weighted-average common shares used for basic earnings per share	62,475	65,554
Effect of dilutive securities:		
Share-based payment awards	530	895
Potentially dilutive common shares	530	895
Weighted-average common shares used for diluted earnings per share	63,005	66,449
Basic earnings per share	$ 0.13	$ 0.16
Diluted earnings per share	$ 0.13	$ 0.16

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 price exceeded the average market value of the common shares for the period or, under application of the treasury stock method, they were otherwise determined to be antidilutive.

	Three Months Ended	
	January 31, 2021	February 2, 2020
Share-based payment awards	826	173
Total potentially dilutive shares excluded	826	173

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-month periods ended January 31, 2021 and February 2, 2020.

	Three Months Ended January 31, 2021		
	Foreign Currency Translation Adjustments	Other	Total
Balance at October 31, 2020	$ 18,828	$ (870)	$ 17,958
Other comprehensive (loss) income	18,289	(1)	18,288
Less: other comprehensive income attributable to noncontrolling interests	4,217	-	4,217
Balance at January 31, 2021	$ 32,900	$ (871)	$ 32,029

	Three Months Ended February 2, 2020		
	Foreign Currency Translation Adjustments	Other	Total
Balance at October 31, 2019	$ (8,331)	$ (674)	$ (9,005)
Other comprehensive (loss) income	(1,564)	17	(1,547)
Less: other comprehensive income attributable to noncontrolling interests	1,181	9	1,190
Balance at February 2, 2020	$ (11,076)	$ (666)	$ (11,742)

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 January 31, 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 of 1933 (as amended) (the “Securities Act”). The company commenced repurchasing shares under this authorization on September 16, 2020. All of the 1.7 million shares repurchased under this authorization prior to November 1, 2020, were retired in fiscal 2020; the table below presents information on this repurchase program.

	Three Months Ended January 31, 2021	From Inception Date of September 16, 2020
Number of shares repurchased	1,222	2,952
Cost of shares repurchased	$ 13,209	$ 30,709
Average price paid per share	$ 10.81	$ 10.40

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 program have been retired. The table below presents information on this repurchase program.

	Three Months Ended February 2, 2020	From Inception Date of September 25, 2019
Number of shares repurchased	916	1,911
Cost of shares repurchased	$ 11,000	$ 22,000
Average price paid per share	$ 12.01	$ 11.51

NOTE 15 - COMMITMENTS AND CONTINGENCIES

As of January 31, 2021, the Company had commitments outstanding for capital expenditures of approximately $68.9 million, primarily for purchases of high-end equipment.

The Company's wholly owned subsidiary in South Korea has been involved in litigation regarding a 2016 informational tax filing for its 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. The civil matter has subsequently been 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. We are awaiting a trial date from the appellate court. Prior to the Supreme Court decision, our assessment was that the possibility of a fine was deemed remote, based on advice of local counsel and the subsequent judgments in the lower courts having been in our favor. Our estimate of the possible range of loss is $0.03 million to $2.2 million with the most likely amount being $0.03 million (based on the prosecutor's recommendation). Accordingly, during the three-month period ended May 3, 2020, we accrued a contingent loss of $0.03 million. It is reasonably possible that the estimated loss will change in the near term. Our maximum exposure to loss in excess of amounts accrued is $2.17 million. The imposition of the fine will not have a material impact on our financial position or financial performance.

We are subject to various other claims that arise in the ordinary course of business. We believe that our potential liability under such claims, individually or in the aggregate, will not have a material effect on the 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 replaces the incurred loss impairment methodology, found in current GAAP, with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. This ASU requires a cumulative-effect adjustment as of the beginning of the first reporting period in which the guidance is adopted. ASU 2016-13 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 the London Interbank Offered Rate, 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 will 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 Annual Report on 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 downturns 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 December 2020, we entered into a five-year $35.6 million finance lease for a high-end lithography tool. Monthly payments on the lease, which commenced in January 2021, increase 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 for the forty-eighth monthly payment, we may exercise an early buy-out option to purchase the tool at 39.84% of its original cost. If we do not exercise the early buy-out 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 buy-out option, we have classified the lease as a finance lease. The interest rate of the lease, which is the rate implicit in the lease, is 1.14%.

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 buy-out option to purchase the tool at 33.684638% of its original cost. If we do not exercise the early buy-out 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 buy-out option, we have classified the lease as a finance lease. The interest rate of the lease, which is the rate implicit in the lease, is 1.09%.

In the fourth quarter of fiscal 2020, we were approved to borrow 200 million Chinese renminbi (RMB) (approximately $30.9 million, at the balance sheet date) from the China Construction Bank Corporation. We received initial proceeds of 41 million RMB (approximately $6.3 million, at the balance sheet date) against this approval in November 2020. Please see Note 6 to the condensed consolidated financial statements for additional information on this loan.

In the fourth quarter of fiscal 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 of 1933 (as amended) ("the Securities Act"). See Note 14 of the condensed consolidated financial statements for additional information on this repurchase program.

In the fourth quarter of fiscal 2020, PDMC, the Company's majority-owned IC subsidiary in Taiwan, paid a dividend of which 49.99%, or approximately $16.2 million, was paid to noncontrolling interests.

In the first quarter of fiscal 2020, we acquired the remaining 0.2% of noncontrolling interests in Photronics Cheonan, Ltd. (formerly PK, Ltd.), our South Korean subsidiary, for $0.6 million.

In the first quarter of fiscal 2020, we adopted ASU 2016-02 and all subsequent amendments, collectively codified in Accounting Standards Codification Topic 842 - "Leases" ("Topic 842"). This guidance requires modified retrospective adoption, either at the beginning of the earliest period presented or at the beginning of the period of adoption; we elected to apply the guidance at the beginning of the period of adoption, and recognized right-of-use leased assets of $6.5 million and corresponding lease liabilities which were discounted at our incremental borrowing rates, on our November 1, 2019 condensed consolidated balance sheet to reflect our adoption of the guidance. Our adoption of Topic 842 did not affect our cash flows or our ability to comply with covenants under our credit agreements.

In the fourth quarter of fiscal 2019, our board of directors declared a dividend of one preferred stock purchase right (a "Right"), payable on or about October 1, 2019, for each share of common stock, par value $0.01 per share, of the Company outstanding on September 30, 2019, to the stockholders of record on that date. In connection with the distribution of the Rights, we entered into a Section 382 Rights Agreement (the "Rights Agreement"), dated as of September 23, 2019, between the Company and Computershare Trust Company, N.A., a federally chartered trust company, as rights agent. The purpose of the Rights Agreement is to deter trading of our common stock that would result in a change in control (as defined in Internal Revenue Code Section 382), thereby preserving our future ability to use our historical federal net operating losses and other Tax Attributes (as defined in the Rights Agreement). Each Right entitles the registered holder to purchase from the Company one one-thousandth of a share of Series A Preferred Stock, par value $0.01 per share, at a price of $33.63, subject to adjustment. The Rights, which are described in the Company's Current Report on Form 8-K filed on September 24, 2019, are in all respects subject to and governed by the provisions of the Rights Agreement. The Rights will expire at the earliest to occur of (i) the close of business on the day following the date on which our board of directors determines, in its sole discretion, that the Rights Agreement is no longer necessary for the preservation of material valuable tax attributes, or the tax attributes have been fully utilized and may no longer be carried forward or (ii) the close of business on September 22, 2022.

In the fourth quarter of fiscal 2019, PDMC, the Company's majority-owned IC subsidiary in Taiwan, paid a dividend of which 49.99%, or approximately $18.9 million, was paid to noncontrolling interests.

In the fourth quarter of fiscal 2019, upon our request, a financing entity made an advance payment of $3.5 million to an equipment vendor. We entered into a Master Lease Agreement ("MLA") with this financing entity, which became effective in July 2019. The MLA enables us to request advance payments or other funds to finance equipment to be leased or purchased in the U.S. In connection with this MLA, we have been approved for financing of $35 million for the purchase of a high-end lithography tool. As discussed above, we entered into a lease agreement for the related equipment in the first quarter of fiscal 2021.

In the fourth quarter of fiscal 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. We repurchased 2.5 million shares, at a cost of $27.9 million (an average price of $11.34 per share), under this authorization. All shares repurchased during fiscal 2019 (0.9 million) were retired in fiscal 2019; the repurchase program was terminated on March 20, 2020.

Results of Operations
Three-Months ended January 31, 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		
	January 31, 2021	October 31, 2020	February 2, 2020
Revenue	100.0%	100.0%	100.0%
Cost of goods sold	79.9	78.6	78.3
Gross margin	20.1	21.4	21.7
Selling, general and administrative expenses	9.2	8.6	8.9
Research and development expenses	3.1	2.8	2.6
Operating income	7.7	10.0	10.2
Other income (expense), net	0.4	(1.9)	2.3
Income before income tax provision	8.2	8.1	12.5
Income tax provision	1.9	2.3	5.7
Net income	6.3	5.8	6.8
Net income attributable to noncontrolling interests	1.0	1.5	0.4
Net income attributable to Photronics, Inc. shareholders	5.3%	4.3%	6.4%

Note: All the following tabular comparisons, unless otherwise indicated, are for the three-months ended January 31, 2021 (Q1 FY21), October 31, 2020 (Q4 FY20), and February 2, 2020 (Q1 FY20).

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, and sometimes the second, quarters of our fiscal year, by the North American, European, and Asian holiday periods, as some of our customers reduce their development and, consequently, their buying activities during those periods.

The following tables present changes in disaggregated revenue in Q1 FY21 from revenue in prior reporting periods. Columns may not total due to rounding.

Quarterly Changes in Revenue by Product Type

	Q1 FY21 from Q4 FY20			Q1 FY21 from Q1 FY20	
	Revenue in Q1 FY21*	Increase (Decrease)	Percent Change	Increase (Decrease)	Percent Change
IC					
High-end *	$ 36.8	$ (1.4)	(3.6)%	$ (4.3)	(10.4)%
Mainstream	68.2	0.4	0.6%	2.2	3.4%
Total IC	$ 105.0	$ (1.0)	(0.9)%	$ (2.0)	(1.9)%
FPD					
High-end *	$ 34.6	$ 3.3	10.7%	$ (5.1)	(12.9)%
Mainstream	12.5	0.4	3.4%	(0.5)	(4.0)%
Total FPD	$ 47.1	$ 3.7	8.6%	$ (5.6)	(10.7)%
Total Revenue	$ 152.1	$ 2.8	1.9%	$ (7.7)	(4.8)%

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

Quarterly Changes in Revenue by Geographic Origin

	Q1 FY21 from Q4 FY20			Q1 FY21 from Q1 FY20	
	Revenue in Q1 FY21	Increase (Decrease)	Percent Change	Increase (Decrease)	Percent Change
Taiwan	$ 56.6	$ 0.0	(0.1)%	$ (9.5)	(14.4)%
Korea	38.8	2.2	6.1%	(2.0)	(4.8)%
United States	26.6	(0.1)	(0.3)%	1.5	6.1%
China	21.0	0.0	0.0%	1.1	5.5%
Europe	8.6	0.6	8.0%	1.0	13.7%
Other	0.5	0.0	10.4%	0.1	37.8%
	$ 152.1	$ 2.8	1.9%	$ (7.7)	(4.8)%

Revenue increased 1.9% in Q1 FY21, compared with Q4 FY20, as FPD demand rose 8.6%, primarily due to increased demand for AMOLED masks for new mobile displays. The increased demand was primarily the result of alternative phone manufacturers filling the void that resulted from the U.S. Department of Commerce adding non-U.S. affiliates of Huawei Technologies Co., Ltd. to the prohibited entity list. The growth in AMOLED demand was somewhat offset by weaker demand for LCD masks, including G10.5+, as panel producers delayed releasing new designs, and focused on meeting favorable market trends with current products. IC revenue fell just under 1% from last quarter, as a result of decreased demand for high-end logic masks; this decline was somewhat mitigated by increased demand for high-end memory and mainstream masks. In addition, the productivity loss of a high-end lithography tool contributed to the decrease in IC revenue, as the tool repair was delayed as a result of vendor imposed travel restrictions.

Revenue decreased 4.8% in Q1 FY21, compared with Q1 FY20; IC demand declined 1.9%, due to weakened demand for high-end logic photomasks, while FPD demand fell 10.7%, primarily due to lower demand for G10.5+ displays, partially offset by an increase in demand for mobile display masks.

Gross Margin

	Three Months Ended				
	Q1 FY21	Q4 FY20	Percent Change	Q1 FY20	Percent Change
Gross profit	$ 30.5	$ 31.9	(4.3)%	$ 34.6	(11.8)%
Gross margin	20.1%	21.4%		21.7%	

Gross margin decreased by 1.3 percentage points in Q1 FY21, from Q4 FY20, primarily due to unfavorable product mix; as a result, material costs increased 1.3% as a percentage of revenue, with increases experienced in all regions, excepting the U.S. Labor costs also increased as a percentage of revenue, though at a more modest 0.8 percentage points, with the largest increases experienced in the U.S. and at our two Asia based joint ventures. These increases were partially mitigated by the 1.9% increase in revenue, and a 0.8 percentage point decrease in overhead costs, as a percentage of revenue.

Gross margin decreased by 1.6 percentage points in Q1 FY21, from Q1 FY20, primarily as a result of the 4.8% decrease in revenue in the current year quarter. Materials and labor costs both increased as a percent of revenue, rising 0.6 and 1.3 percentage points, respectively, thus contributing to the decreased gross margin. Overhead costs were down 0.3 percentage points to revenue from the prior year quarter.

Selling, General and Administrative Expenses

Selling, general and administrative expenses were $14.1 million in Q1 FY21, compared with $12.8 million in Q4 FY20, and $14.2 million in Q1 FY20. The increase from Q4 FY20 was primarily the result of increased compensation and related expenses of $0.7 million; the balance of the net increase was spread across sundry expense categories. The decrease from the prior year quarter was the result of decreased travel expenses of $0.3 million, which were partially offset by increases in sundry expense categories, none of which were individually significant.

Research and Development Expenses

Research and development expenses consist of development efforts related to high-end process technologies for high-end IC and FPD applications, and were $4.7 million in Q1 FY21, compared with $4.1 million in both Q4 FY20 and Q1 FY20. The increase in the current quarter from both comparative quarters was primarily the result of increased development activities in the U.S.

Other Income (Expense)

	Three Months Ended		
	Q1 FY21	**Q4 FY20**	**Q1 FY20**
Foreign currency transactions (losses) gains, net	$ 1.4	$ (2.2)	$ 4.7
Interest expense	(0.8)	(0.8)	(1.8)
Interest income and other income, net	0.1	0.1	0.8
Other income (expense)	$ 0.7	$ (2.9)	$ 3.7

The favorable change in Other income (expense), net of $3.6 million, from a net expense of $2.9 million in Q4 FY20, to net income of $0.7 million in Q1 FY21, was primarily due to $3.8 million less unfavorable foreign currency exchange losses of the South Korean won against the U.S. dollar. The decrease in Other income (expense), net of $3.0 million, from net income of 3.7 million in Q1 FY20 to $0.7 million in Q1 FY21, was primarily attributable to the effect of our recognizing $2.1 million of net foreign currency exchange gains of the South Korean won against the U.S. dollar, in Q1 FY20, compared with our recognizing $2.1 million of net foreign currency exchange losses between those same currencies in Q1 FY21. The $4.2 million net unfavorable results of the South Korean won against the U.S. dollar were partially offset by a favorable net change in results between the RMB and the U.S. dollar, which increased by $2.5 million from $2.5 million in Q1 FY20 to $5.0 million in Q1 FY21. Year-over-year interest expense decreased by $1 million, from $1.8 million in Q1 FY20 to $0.8 million in Q1 FY21, primarily as a result of interest we recorded on our loans in China. The majority of the interest on our China-based debt is eligible for reimbursements through subsidies, which we recognize upon receipt.

Income Tax Provision

	Three Months Ended		
	Q1 FY21	**Q4 FY20**	**Q1 FY20**
Income tax provision	$ 2.9	$ 3.5	$ 9.1
Effective income tax rate	23.6%	28.8%	45.4%

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, where the tax benefit of the losses is not available.

The effective income tax rate decrease in Q1 FY21, compared with Q4 FY20, is primarily due to an increase in credits in a non-US jurisdiction in Q1 FY21.

The effective income tax rate decrease in Q1 FY21, compared with Q1 FY20, is primarily due to an increase in credits in a non-US jurisdiction in Q1 FY21, and the establishment of a valuation allowance for a non-U.S. based loss carryforward in Q1 FY20.

Net Income Attributable to Noncontrolling Interests

Net income attributable to noncontrolling interests was $1.5 million in Q1 FY21, as compared with $2.1 million in Q4 FY20, and was primarily the result of decreased net income at our Taiwan-based IC facility. Net income attributable to noncontrolling interests increased $0.8 million in Q1 FY21 from $0.6 million in Q1 FY20; the net increase was attributable to a decreased loss at our China-based IC facility, which was partially offset by decreased income at our Taiwan-based IC facility.

Liquidity and Capital Resources

We had cash and cash equivalents of $278.5 million at the end of Q1 FY21, compared with $278.7 million at the end of fiscal 2020. The net decrease of $0.1 million is primarily attributable to:

- $26.3 million provided by operating activities;
- $6.2 million received from borrowings in China;
- $17.5 million paid for property, plant, and equipment;
- $13.2 million used to repurchase our common stock;
- $7.8 million repayments of debt;
- $5.2 million positive effects of currency rate changes on our cash.

Our working capital at the end of Q1 FY21 was $360.6 million, compared with $357.2 million at the end of fiscal 2020. The $3.4 million net increase is primarily attributable to the following increases (decreases) in working capital:

- Increased accounts receivable of $5.2 million, the predominance of which arose at our Korea-based facility, as a result of a comparative late-in-the-quarter increase in shipments to Korean customers, and at our Taiwan-based IC facility, as a result of increased shipments to two China-based customers;
- Increased current portion of long-term debt of $(8.0) million, which was primarily the result of a new $6.2 million borrowing in China;
- Decreased accounts payable of $4.5 million, $3.8 million of which was the result of a reduction in payables for capital assets;
- Increased value added taxes receivable of $2.0 million.

The net cash provided by operating activities of $26.3 million in Q1 FY21 was a $4.5 million decrease from $30.8 million provided in Q1 FY20. The net decrease was due primarily to the following:

- Decreased net income of $1.4 million in Q1 FY21;
- Decreased non-cash add backs to net income, including depreciation, share-based compensation and deferred income taxes of $3.1 million;
- Cash positive comparative changes in our accounts receivable balances of $4.7 million, which primarily resulted from changes in the accounts receivable balances at our China-based sites, which commenced operations in fiscal 2019;
- A comparative increase in value added tax prepayments of $3.9 million (predominantly arising in China), and a comparative decrease in value added tax payables of $3.8 million;
- A comparative decrease in inventory growth of $3.5 million, primarily experienced in the U.S. and Korea.

Net cash used in investing activities was $17.2 million in Q1 FY21, an increase of $5.7 million from the $11.5 million used in Q1 FY20. The net increase was primarily attributable to increased capital expenditures of $3.7 million, and decreased government incentives received of $2.0 million.

Net cash flows used in financing activities increased from funds used of $7.6 million in Q1 FY20 to $14.4 million used in Q1 FY21. Significant components of the $6.7 million net increase were:

- $5.1 million increased proceeds from debt;
- $(2.2) million increased purchases of treasury stock;
- $(7.4) million increase in debt repayments;
- $(2.1) million less proceeds received from share-based arrangements.

As of January 31, 2021 and October 31, 2020, our total cash and cash equivalents included $197.8 million and $218.0 million, respectively, held by our foreign subsidiaries. The majority of earnings of our foreign subsidiaries are considered to be indefinitely reinvested. Repatriation of these funds to the U.S. may subject them to U.S. state income taxes and local country withholding taxes in certain jurisdictions. Furthermore, our foreign subsidiaries continue to grow through the reinvestment of earnings in additional manufacturing capacity and capability, particularly in the high-end IC and FPD areas.

Since we operate in a high fixed cost environment, our liquidity is highly dependent on our revenue, cash conversion cycle, and the timing of our capital expenditures (which can vary significantly from period to period). We believe that our cash on hand, cash generated from operations, and amounts available to borrow will be sufficient to meet our cash requirements for the next twelve months. However, depending on conditions in the semiconductor and display markets, our cash flows from operations and current holdings of cash may not be adequate to meet our current and long-term needs for capital expenditures, operations and debt repayments. Historically, in certain years, we have used external financing to fund these needs. Due to conditions in the credit markets and covenant restrictions on our existing debt, some financing instruments we have used in the past may not be available to us when required. Consequently, we cannot assure that additional sources of financing would be available to us on commercially favorable terms, should our long-term cash requirements exceed our existing cash and cash available under our corporate credit agreement (which is discussed in Note 6 to the condensed consolidated financial statements). Please also refer to Financing Related Risk Factors in our fiscal 2020 annual report on Form 10-K.

As of January 31, 2021, we had outstanding capital commitments of approximately $69 million. We intend to finance our capital expenditures with our working capital, contributions from our joint venture partners, cash generated from operations and, if necessary, additional borrowings.

Off-Balance Sheet Arrangements

In January 2018, Photronics, through its wholly owned Singapore subsidiary, and DNP, through its wholly owned subsidiary “DNP Asia Pacific PTE, Ltd.” entered into a joint venture under which DNP obtained a 49.99% interest in our IC business in Xiamen, China. The joint venture, known as “Xiamen American Japan Photronics Mask Co., Ltd.” (“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 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 January 31, 2021, Photronics and DNP each had net investments in PDMCX of $56.8 million.

Business Outlook

While we, as always, caution that our outlook, due to our short backlog (which typically does not exceed two weeks) is limited, we reaffirm our Q4 FY20 expectation for revenue to increase, as a percentage of FY20 revenue, in the high single digits. We also continue to anticipate that operating profit will grow at a rate similar to the 23% increase we experienced in FY20. The bases of our expectations include growth for both IC and FPD in FY2021. IC growth drivers include added capacity across our global operations including the completion of Phase 1 of our China IC facility ramp (which we expect to begin generating revenue in Q2 FY21, and to ramp up over the succeeding quarters), growing demand for semiconductor masks in China, a recovery in high-end IC logic, continued strength in mainstream IC, and increased demand in the IC memory space. For FPD, we expect the increased demand for AMOLED displays to continue throughout the year; this, along with the expected transition from LCD to OLED displays, or alternative advanced screen technologies, for ultra-large screen TVs will result in increased demand for more critical layer photomasks, consequently increasing our FPD revenue. To support this foreseen increase in demand for high-end display masks, we have invested in three additional FPD write tools. We are also encouraged by the widening availability of recently developed coronavirus vaccines, as we think this supports a reasonable expectation that supply chain disruptions and travel restrictions will continue to be eased over the next several quarters, concomitantly reducing the impediments to growth they represented in FY20.

The impact, if any, on our business of changing geopolitical conditions, such as U.S.-China trade relations, tensions between the Republic of South Korea and Japan, and the effects of the United Kingdom exiting the European Union cannot be predicted. However, we believe the recent change in leadership in the U.S. may lead to an improvement in its trade relationship with China, including the possible removal of sanctions on some Chinese enterprises, as well as a reduction in the likelihood of the impositions of additional sanctions.

We believe that a majority of the growth in the IC and FPD markets will come from the Asia region, predominantly in China. We expect to meet these demands both through the utilization of our facilities in China and by importing photomasks into China from our other facilities. We make continual assessments of our global manufacturing strategy and monitor our revenue and related cash flows from operations. These ongoing assessments could result in future facility closures, asset redeployments, impairments of intangible or long-lived assets, workforce reductions, or the addition of manufacturing facilities, all of which would be based on market conditions and customer requirements.

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 affect the Company’s financial reporting.

Item 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency Exchange Rate Risk

We conduct business in several major international currencies throughout our worldwide operations, and our financial performance may be affected by fluctuations in the exchange rates of these currencies. Changes in exchange rates can positively or negatively affect our reported revenue, operating income, assets, liabilities, and equity. The functional currencies of our Asian subsidiaries are the South Korean won, the New Taiwan dollar, the Chinese renminbi, and the Singapore dollar. The functional currencies of our European subsidiaries are the British pound and the euro. In addition, we 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 January 31, 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 than the functional currencies of our subsidiaries would have resulted in a net unrealized pre-tax loss of $32.5 million, which represents an increase of $0.6 million from our exposures at October 31, 2020. Our most significant exposures at January 31, 2021, related to both the Chinese renminbi and the South Korean won exposures to the U.S. dollar, which were $12.6 million and $11.8 million, respectively, 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 January 31, 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 January 31, 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 January 31, 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 Securities Exchange Act of 1934, as amended (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 Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to management, including our chief executive officer and chief financial officer, as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on an evaluation of our disclosure controls and procedures as of January 31, 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 January 31, 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 Quarterly Report on 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 weaknesses 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 January 31, 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 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 of 1933 (as amended) ("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.

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)
November 1, 2020 – November 29, 2020	0.5	$ 10.60	0.5	$ 77.2
November 30, 2020 – December 27, 2020	0.5	$ 10.95	0.5	$ 71.7
December 28, 2020 – January 31, 2021	0.2	$ 10.99	0.2	$ 69.3
Total	1.2	$ 10.81	1.2	

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 on March 20, 2020. All shares repurchased under this program were retired in the year of their repurchase.

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)
November 1, 2019 – December 2, 2019	0.9	$ 12.01	0.9	$ 78.0
February 3, 2020 – March 1, 2020	0.1	$ 12.37	0.1	$ 77.0
March 2, 2020 – March 29, 2020	0.5	$ 10.48	0.5	$ 0.0
Total	1.5	$ 11.54	1.5	

Item 6. EXHIBITS

		Incorporated by Reference				
Exhibit Number	**Description**	**Form**	**File Number**	**Exhibit**	**Filing Date**	**Filed or Furnished Herewith**
10.40	Master Lease Agreement between Banc of America Leasing & Capital, LLC and Photronics, Inc. dated July 25, 2019, and Schedule 1 thereto, dated February 8, 2021					X
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					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	XBRL Instance Document					X
101.SCH	XBRL Taxonomy Extension Schema Document					X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document					X

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Photronics, Inc.
(Registrant)

By: /s/ JOHN P. JORDAN	By: /s/ ERIC RIVERA
JOHN P. JORDAN Executive Vice President, Chief Financial Officer (Principal Financial Officer)	ERIC RIVERA Vice President, Corporate Controller (Principal Accounting Officer)
Date: March 10, 2021	Date: March 10, 2021

Exhibit 10.40

Banc of America Leasing & Capital, LLC **Master Lease Agreement Number: 48869-90000**

This Master Lease Agreement, dated as of July 25, 2019, (this **"Agreement"**), is by and between **Banc of America Leasing & Capital. LLC**, a Delaware limited liability Company having an office at 3400 Pawtucket Avenue, Riverside, RI 02915 (together with its successors **and** assigns, **"Lessor"**), and Photronics, Inc. as **"Lessee"**, a corporation existing under the laws of the state of Connecticut, and having its chief executive office and any organizational identification number as specified with its execution of this Agreement below. **Certain defined terms used herein are Identified in bold face and quotation marks throughout** this **Agreement and in Section 15 below.** This Agreement sets forth the terms and conditions for the lease of Equipment between Lessor and Lessee pursuant to one or more **"Schedules"** incorporating by reference the terms of this Agreement, together with all exhibits, addenda, schedules, certificates, riders and other documents and instruments executed and delivered in connection with such Schedule (as amended from time to time, a **"Lease"**). Each Lease constitutes a separate, distinct and independent lease of Equipment and contractual obligation of Lessee. This Agreement is not an agreement or commitment by Lessor or Lessee to enter into any future Leases or other agreements, or for Lessor to provide any financial accommodations to Lessee, Lessor shall not be obligated under any circumstances to advance any progress payments other funds for any Equipment or to enter into any Lease if there shall have occurred a material adverse change in the operations, business, properties or condition, financial or otherwise, of Lessee or any Guarantor. This Agreement and each Lease shall become effective only upon Lessor's acceptance and execution thereof at its corporate offices set forth above.

1. Lease; Term; Non-lnterference. Lessor and Lessee agree to lease Equipment described in Schedules entered into from time to time, together with all other documentation from Lessee required by Lessor with respect to such Lease. Upon receipt of any item or group of Equipment intended for Lease hereunder, Lessee shall execute a Schedule, with all information fully completed and irrevocably accepting such Equipment for Lease, and deliver such Schedule to Lessor for its review and acceptance. Provided no Event of Default has occurred, Lessee shall be entitled to use and possess the Equipment during the original Lease Term provided in the Schedule (together with any extensions or renewals thereof in accordance with terms of the Lease, the **"Lease Term"**) free from interference by any person claiming by, through or under Lessor.

2. Rent. "Rent" shall be payable to Lessor during the Lease Term in the amounts and at the times provided in the Schedule. If any Rent or other amount payable hereunder is not paid within 10 days of its due date, Lessee shall pay an administrative late charge of 5% of the amount not timely paid. All Rent and other amounts payable under a Lease shall be made in immediately available funds al Lessor's address above or such other place as Lessor shall specify in writing. Unless otherwise provided herein, payments received under any Lease will be applied to all interest, fees and amounts owing thereunder (other than Rent), and then to Rent payable thereunder.

3. Net Lease; Disclaimer Of Warranties. Each Lease is a net lease and a "finance lease" under Article 2A of the UCC, and Lessee waives all rights and remedies Lessee may have under sections 2A-508 - 2A-522 thereof, including any right to cancel or repudiate any Lease or to reject or revoke acceptance of any Equipment. Upon the **"Acceptance Date"** provided in the Schedule for each Lease, Lessee's Obligations thereunder (i) shall be non- cancelable, absolute and unconditional under all circumstances for the entire Lease Term, (ii) shall be unaffected by the loss or destruction of any Equipment, and (iii) shall not be subject to any abatement, deferment, reduction, set-off, counterclaim, recoupment or defense for any reason whatsoever. LESSOR IS NOT A VENOOR OR AGENT OF THE EQUIPMENT VENDOR, AND HAS NOT ENGAGED IN THE SALE OR DISTRIBUTION OF ANY EQUIPMENT. LESSOR MAKES NO EXPRESS OR IMPLIED REPRESENTATIONS OR WARRANTIES AS TO TITLE, MERCHANTABILITY, PERFORMANCE, CONDITION, EXISTENCE, FITNESS OR SUITABILITY FOR LESSEE'S PURPOSES OF ANY EQUIPMENT, PATENT, TRADEMARK OR COPYRIGHT INFRINGEMENTS, THE CONFORMITY OF THE EQUIPMENT TO THE DESCRIPTION THEREOF IN ANY LEASE, OR ANY OTHER REPRESENTATION OR WARRANTY OF ANY KIND WITH RESPECT TO THE EQUIPMENT. If Equipment is not delivered or properly installed, does not operate as warranted, becomes obsolete, or is unsatisfactory for any reason, Lessee shall make all claims on account thereof solely against Vendor and not against Lessor. Lessee is solely responsible for the selection, shipment, delivery and installation of the Equipment and its Vendors, expressly disclaims any reliance upon any statements or representations made by Lessor in connection therewith, and has received and approved the terms of any purchase orders, warranties, licenses or agreements with respect to the Equipment. During the Lease Term, Lessee shall be entitled, on a non-exclusive basis. to enforce any applicable Vendor warranties, to the extent permitted thereby and by applicable law. Lessor assigns such warranties to Lessee, to the extent permitted thereby, and agrees to cooperate with Lessee, at Lessee's sole cost and expense, in making any reasonable claim against such Vendor arising from any defect in the Equipment.

4. Use; Maintenance; Location; Inspection. Lessee shall: (i) use, operate, protect and maintain the Equipment (a) in good operating order, repair, condition and appearance, in the same condition as when received, ordinary wear and tear excepted, (b) consistent with prudent industry practice (but in no event less than the extent to which Lessee maintains other similar equipment In the prudent management of its assets and properties), and (c) in compliance with all applicable insurance policies, laws, ordinances. rules, regulations and manufacturer's recommended maintenance and repair procedures, and (ii) maintain comprehensive books and records regarding the use, operation, maintenance and repair of the Equipment. The Equipment shall be used only within the 48 contiguous United States, solely for business purposes (and not for any consumer, personal, home, or family purpose), and shall not be abandoned or used for any unlawful purpose. Lessee shall not discontinue use of any Equipment except for normal maintenance nor, through modifications, alterations or otherwise, impair the current or residual value, useful life, utility or originally intended function of any Equipment without Lessor's prior consent. Any replacement or substitution of parts, improvements, upgrades. or additions to the Equipment during the Lease Term shall be the property of Lessor and subject to the Lease, except that if no Event of Default exists, Lessee may at its expense remove improvements or additions provided by Lessee that can be readily removed without impairing the value, function or remaining useful life of the Equipment. If requested by Lessor. Lessee shall cause Equipment to be plainly marked to disclose Lessor's ownership, as specified by Lessor. Lessee shall not change the location or, in the case of over-the-road vehicles, the base of any Equipment specified in its Schedule without Lessor's prior written consent. Lessor shall have the right to enter any premises where Equipment is located and inspect it (together with related books and records) at any reasonable time.

5. Loss and Damage. Lessee assumes all risk of (and shall promptly notify Lessor in writing of any occurrence of) any damage to or loss theft, confiscation or destruction of any Equipment from any cause whatsoever (a **"Casualty"**) from the date shipped or otherwise made available to Lessee and continuing until it is returned to and accepted by Lessor in the condition required by the Lease, including Section 8 of this Agreement If any Equipment suffers a Casualty which Lessee determines is reparable, Lessee shall at its expense promptly place the same in good repair, condition or working order. If any Equipment suffers a casualty which Lessee determines is beyond repair or materially impairs its residual value (a **"Total Loss"**), Lessee shall at Lessee's option (unless an Event of Default has occurred and is then continuing, in which case it shall be at Lessor's option) either (a) promptly replace such Equipment with a similar item reasonably acceptable to Lessor having an equivalent value, utility and remaining useful life of such Equipment, whereupon such replacement items shall constitute Equipment for all purposes the Lease, or (b) on the Rent payment dale following such Casualty (or, if none. within 30 days) pay lessor the Stipulated Loss Value for such Equipment, together with all Rent scheduled for payment on such dare, and all accrued interest, late charges and other amounts then due and owing under the Lease. Upon such payment following a Total Loss. the Lease with respect to the Equipment suffering a Total Loss shall terminate, and Lessor shall transfer all of its right, title and interest in such Equipment, free from all liens and encumbrances created by Lessor, but otherwise on an "AS-IS, WHERE-IS," quitclaim basis. if less than all Equipment under a Schedule suffers a Total Loss, (i)the Stipulated Loss Value with respect to any such item of Equipment shall be calculated by reference to the allocable portion of **"Lessor's Cost"** provided in the applicable Schedule, Rent or other amount related to such item, as reasonably determined by Lessor, and (ii) the remaining Rent under the Schedule shall be proportionately reduced as reasonably calculated by Lessor upon Lessor's receipt of the payments described above.

6. Insurance. Lessee, at its own expense, shall keep each item of Equipment insured against all risks for its replacement value, and in no event less than its Stipulated Loss Value, and shall maintain public liability and, with respect to Equipment that is over-the-road vehicles, automotive liability insurance against such risks and for such amounts as lessor may require. All such insurance shall (a) be with companies rated "A" or better by A.M. Best Company. in such form as Lessor shall approve, (b) specify Lessor and Lessee as insureds and provide that it may not be canceled or altered in any way that would affect the interest of Lessor without at least 30 days' prior written notice to Lessor (10 days' in the case of nonpayment of premium), (c) be primary, without right of contribution from any other insurance carried by Lessor and contain waiver of subrogation and "breach of warranty" provisions satisfactory to Lessor, (d) provide that all amounts payable by reason of loss or damage to Equipment shall be payable solely to Lessor, unless Lessor otherwise agrees (<u>provided</u>, <u>however</u>, that absent the existence of an Event of Default, Lessor agrees to promptly remit to Lessee any such insurance proceeds that are to be used by Lessee to repair or replace the applicable Equipment), and (e) contain such other endorsements as Lessor may reasonably require. Lessee shall provide Lessor with evidence satisfactory to Lessor of the required insurance upon the execution of any Schedule and promptly upon any renewal of any required policy.

7. Indemnities; Taxes. Lessee's indemnity and reimbursement obligations set forth below shall survive the cancellation, termination or expiration of any Lease or this Agreement

(a) <u>**General indemnity**</u>. Lessee shall indemnify, on an after-tax basis, defend and hold harmless Lessor and its respective officers, directors, employees, agents and Affiliates (**"Indemnified Persons"**) against all claims, liabilities, losses and expenses whatsoever (except those determined by final decision of a court of competent jurisdiction to have been directly and primarily caused by the Indemnifier Person's gross negligence or willful misconduct), including court costs and reasonable attorneys' fees and expenses (together, **"Attorneys' Fees"**), in any way relating to or arising out of the Equipment or any Lease at any time, or the ordering, acquisition, rejection, installation, possession, maintenance, use, ownership, condition, destruction or return of the Equipment, including any claims in negligence. strict liability in tort, environmental liability or infringement.

(b) <u>**General Tax, indemnity**</u>. Lessee shall pay or reimburse Lessor, and indemnify, defend and hold Lessor harmless from, on an after-tax basis, all taxes. assessments, fees and other governmental charges paid or required to be paid by Lessor or Lessee in any way arising out of or related to **the** Equipment or any Lease before or during the Lease Term or after the Lease Term following an Event of Default, including foreign, Federal, stale, county and municipal fees, taxes and assessments, and property, value-added, sales, use, gross receipts. excise, stamp and documentary taxes, and all related penalties, fines, additions to tax and interest charges (**"Impositions"**), excluding only Federal and state taxes based on Lessor's net income unless such taxes are in lieu of any Imposition Lessee would otherwise be required to pay hereunder. Lessee shall timely pay any Imposition for which Lessee is primarily responsible under law and any other Imposition not payable or not paid by Lessor, but Lessee shall have no obligation to pay any Imposition being contested in good faith and by appropriate legal proceedings, the nonpayment of which does not, in the opinion of Lessor, result in a material risk of adverse effect on the title, property, use, disposition or other rights of Lessor with respect to the Equipment. Upon Lessor's request, Lessee shall furnish proof of its payment of any Imposition.

(c) <u>**Income Tax indemnity**</u>. Lessor shall be treated for federal and state income tax purposes as the owner of the Equipment and shall be entitled to take into account certain Tax Benefits in computing its income tax liabilities in connection with any Lease. If Lessor suffers a Tax Loss by reason of any act or failure to act by Lessee, or Lessee's breach of any representation, warranty or agreement in any Lease then, upon Lessor's demand and at Lessor's option, either:(i) all further Rent under the Lease, if any, shall be increased by an amount, or (ii) Lessee shall pay Lessor a lump sum amount, <u>which in either case</u> shall maintain the net economic after-tax yield, cash-flow and rate of return Lessor originally anticipated, based on Lessor's federal and state corporate income tax rate in effect on the Acceptance Date of the applicable Schedule and other assumptions originally used by Lessor in evaluating the transaction and setting the Rent there for and other terms thereof. Lessee shall also pay Lessor on demand all interest, costs (including Attorneys' Fees), penalties and additions to tax associated with the Tax Loss. Lessor shall have no obligation to contest any Tax Loss. All references to **"Lesser"** in this Section 7(c) shall include (A) Lessor's successors and Assignees, and (B) each member of the affiliated group of corporations, as defined in Section 1504(a) of the Code, of which Lessor or such successor or Assignee is at any time a member. As used herein: **"Tax Benefits"** means all items of income, deduction (including depreciation consistent with Lessee's representation in the applicable Schedule), credit, gain or loss relating to ownership of the Equipment as are provided to owners of similar equipment under the Code and applicable state tax laws in effect on the Acceptance Date of such Schedule; and **"Tax Loss"** means and will be deemed to be suffered if Lessor loses, is delayed in claiming, is required to recapture, is not allowed or may not claim all or any potion of any Tax Benefits, provided, however, that Lessee shall be under no obligation to make any payments with respect to a Tax Loss to the extent that it (1) is caused by Lessor's failure to have sufficient taxable income to benefit from any Tax Benefits, or (2) results from any disposition of Equipment by Lessor other than a disposition of Equipment following an Event of Default.

8. Return. Upon any cancellation, termination or expiration of any Lease (after the occurrence of an Event of Default or otherwise). Lessee shall, at its expense, Cause the Equipment to be prepared and adequately protected for shipment by an authorized manufacturer's representative and either surrender it to Lessor in place or, if instructed by Lessor, ship the Equipment to Lessor, freight and insurance pre-paid, to a place designated by Lessor within the 48 contiguous United States, in the condition required under Section 4 hereof and under the applicable Schedule, able to be put into immediate service and to perform at manufacturer's rated levels (if any), together with all related manuals, documents and records, and, if applicable, reassembled by an authorized manufacturer's representative and immediately qualified for the manufacturer's (or its authorized servicing representative's) then available service contract or warranty. If requested by Lessor, Lessee shall, at its expense: (i) cause the Equipment to qualify for all applicable licenses or permits necessary for its operation and for its intended purpose, and to comply with all specifications and requirements of applicable federal, slate and local laws, regulations and ordinances; (ii) provide safe, suitable storage, acceptable to Lessor, for the Equipment for a period not to exceed 90 days from the date of return; and (iii) cooperate with Lessor in attempting to remarket the Equipment, including display and demonstration to prospective parties, and allowing Lessor to conduct a private sale on Lessee's premises. If Lessee does not surrender or return any item of Equipment to Lessor on the date or in the condition required under a Lease, in addition to all other available rights and remedies, at Lessor's election, such Equipment shall continue to be subject to all the terms and conditions of the Lease, with Rent and other charges continuing to accrue and be payable under the Lease with respect to such Equipment until it is so surrendered or returned to Lessor.

9. Lessee Representations and Agreements. Lessee represents, warrants and agrees that: (a) Lessee has had for the previous 5 years (except as previously disclosed to Lessor in writing) the legal name and form of business organization in the state described above; (b) Lessee's chief executive office and notice address, taxpayer identification number and any organizational identification number is as described with its execution of this Agreement below; (c) Lessee shall notify Lessor in writing at least 30 days before changing its legal name, state of organization, chief executive office location or organizational identification number; (d) Lessee is duly organized and existing in good standing under the laws of the state described above and all other jurisdictions where legally required in order to carry on its business, shall maintain its good standing in all such jurisdictions, and shall conduct its businesses and manage its properties (and cause each of its Affiliates to conduct its businesses and manage its properties) in compliance with all applicable laws, rules or regulations binding, in any jurisdiction, on Lessee and its Affiliates including, without limitation, all anti-money laundering laws and regulations; (e) the execution, delivery and performance of this Agreement, each Lease and Related Agreement to which it is a party has been duly authorized by Lessee, each of which are and will be binding on and enforceable against Lessee in accordance with their terms, and do not and will not contravene any other instrument or agreement binding Lessee; and (f) there is no pending litigation, tax or environmental claim, proceeding, dispute or regulatory or enforcement action (and Lessee shall promptly notify Lessor of any of the same that may hereafter arise) that may adversely affect any Equipment or Lessee's financial condition or impair its ability to perform its Obligations.

All covenants of Lessee that are based upon a specified level or ratio relating to assets, liabilities, indebtedness, rentals, net worth, cash flow, earnings, profitability, or any other accounting-based measurement or test, now or hereafter existing (collectively, the "Additional Covenants"), In that certain. Fourth Amended and Restated Credit Agreement dated September 27, 2018. by and between Lessee and Bank of America, N.A., as Syndication Agent, and JPMorgan Chase Bank, N,A., as Administrative Agent and Collateral Agent or in any replacement credit facility accepted in writing by Lessor between Lessee and a United States national banking association or other financial institution (a "Bank Facility"), are hereby incorporated into and made a part of this Agreement (with such adjustments to defined terms as may be necessary to assure consistency) without modification or amendment unless specifically accepted and approved in writing by Lessor. Lessee acknowledges and agrees that (i) the Additional Covenants in the form included in the existing Bank Facility shall be deemed to be permanently incorporated into this Agreement, and shall remain in effect for all purposes of this Agreement notwithstanding the cancellation or termination of a Bank Facility due to voluntary prepayment, payment at maturity, default or otherwise, unless a replacement credit facility with Additional Covenants has been accepted in writing by Lessor in its sole discretion prior to the effective date of such cancellation or termination of such Bank Facility, and (ii) any waiver of any breach (or anticipated breach) of any Additional Covenant under the Bank Facility (by reason of amendment, forbearance or otherwise) shall not constitute a waiver of the corresponding default (or anticipated default) under this Agreement unless specifically agreed to in writing by Lessor. Lessee hereby certifies that Lessor has been furnished a true, correct and complete copy of all documentation concerning the existing Bank Facility, and further covenants and agrees to promptly provide Lessor: (a) certified copies of true, correct and complete documentation of any other Bank Facility in effect from time to time, and any all proposed amendments and modifications to any Bank Facility; (b) notices of any event of default or other condition of non-compliance issued to Lessee in connection with a Bank Facility; (c) all financial statements and reports required pursuant to a Bank Facility and any certificates of compliance in the form required thereunder as they pertain to the Additional Covenants. and shall continue to provide the same to Lessor notwithstanding the cancellation or other termination of such Bank Facility for so long as any Obligations owing to Lessor remain outstanding in connection with this Agreement; and (d) prior written notice of the cancellation or termination of a Bank Facility for any reason. Lessee further acknowledges and agrees that any event of default under a Bank Facility shall constitute an Event of Default under this Agreement

10. Title; Property; Additional Security. (a) Title; Personal Property. Each Lease is and is intended to be a lease of personal property for all purposes. Lessee does not acquire any right, title or interest in or to any Equipment, except the right to use and possess the same under the terms of the applicable Lease. Except as specifically provided in the applicable Schedule, Lessee has no right or option to extend the Lease Term of a Lease or purchase any Equipment Lessee assigns all of its rights (but none of its obligations) to Lessor under any purchase orders, invoices or other contracts of sale with respect to the Equipment, and conveys whatever right, title and interest it may now or hereafter have in any Equipment lo Lessor. Lessor shall be the sole owner of Equipment free and clear of all liens or encumbrances, other than Lessee's rights under the Lease. Lessee will not create or permit to exist any lien, security interest, charge or encumbrance on any Equipment except those created by Lessor. The Equipment shall remain personal property at all times, notwithstanding the manner in which it may be affixed to realty. Lessee shall obtain and record such instruments and take such steps as may be necessary to (i) prevent any creditor, landlord, mortgagee or other entity (other than Lessor) from having any lien, charge, security interest or encumbrance on any Equipment, and (ii) ensure Lessor's right of access to and removal of Equipment in accordance with the Lease.

(b) Additional Security. To secure the punctual payment and performance of Lessee's Obligations under each Lease and, as a separate grant of security, to secure the payment and performance of all other Obligations owing to Lessor, Lessee grants to Lessor a continuing security interest in the Collateral, provided, however, that if there then exists no Event of Default, Lessor's security interest in Collateral subject to a Lease shall terminate upon the payment and performance of all Obligations of Lessee under the applicable Lease. Notwithstanding the grant of a security interest in any Collateral, Lessee shall have no right to sell, lease, rent, dispose or surrender possession, use or operation of any Equipment to any third parties without the prior written consent of Lessor. The foregoing grant of a security Interest shall not of itself be a factor in determining whether any Lease creates a lease or security interest in the Equipment under applicable provisions of the UCC.

11. Default. Each of the following (a **"Default"**) shall with the giving of any notice or passage of any time period specified, constitute an **"Event of Default"** hereunder and under all Leases: (I) Lessee fails to pay any Rent or other amount owing under any Lease within 10 days of its due date; (2) Lessee fails lo maintain insurance as required herein, or sells, leases, subleases assigns, conveys, or suffers to exist any lien, charge, security interest or encumbrance on, any Equipment without Lessor's prior consent, or any Equipment is subjected to levy, seizure or attachment; (3) Lessee fails to perform or comply with any other covenant or obligation under any Lease or Related Agreement and, if curable, such failure continues for 30 days after written notice there of by Lessor to Lessee; (4) any representation. warranty or other written statement made to Lessor by Lessee in connection with this Agreement, any Lease, Related Agreement or other Obligation, or by any Guarantor pursuant to any Guaranty (including financial statements) proves to have been incorrect in any material respect when made; (5) Lessee (w) enters into any merger or consolidation with. or sells or transfers all or any substantial portion of its assets to, or enters into any partnership or joint venture other than in the ordinary course of business with, any entity, (x) dies (if a natural person), dissolves, liquidates or ceases or suspends the conduct of business, or ceases to maintain its existence, (y) if Lessee is a privately held entity, enters into or suffers any transaction or series of transactions as a result of which Lessee is directly or indirectly controlled by persons or entities not directly or indirectly controlling Lessee as of the date hereof, or (z) if Lessee is a publicly held entity, there shall be a change in the ownership of Lessee's stock or other equivalent ownership interest such that Lessee is no longer subject to the reporting requirements of, or no longer has a class of equity securities registered under, the Securities Act of 1933 or the Securities Exchange Act of 1934; (6) Lessee undertakes any general assignment for the benefit of creditors or commences any voluntary case or proceeding for relief under the bankruptcy code, or any other law for the relief of debtors, or takes any action to authorize or implement any of the foregoing; (7) the filing of any petition or application against Lessee under any law for the relief of debtors, including proceedings under the federal bankruptcy code, or for the subjection of property of Lessee to the control of any court, receiver or agency for the benefit of creditors if such petition or application is consented to by Lessee or is otherwise not dismissed within 60 days from the date of filing; (8) any default occurs under any other lease, credit or other agreement or instrument to which Lessee and Lessor or any Affiliate of Lessor are now or hereafter party; (9) any default occurs under any other agreement or instrument to which Lessee is a party and under which there is outstanding. owing or committed an aggregate amount greater than $5,000,000; (10) any attempted repudiation, breach or default of any Guaranty; or (11) the occurrence of any event described in clauses (4) through (9) above with reference to any Guarantor or any controlling shareholder, general partner or member of lessee. Lessee shall promptly notify Lessor in writing of any Default or Event of Default

12. Remedies. (a) Upon the occurrence of an Event of Default, Lessor may, in its discretion, exercise any one or more of the following remedies with respect to any or all Leases or Equipment: (1) cause Lessee to promptly discontinue use of or disable any Equipment, or to assemble and return any Equipment or other Collateral in accordance with the terms of the applicable Lease; (2) remedy such Event of Default or proceed by court action, either at law or in equity, to enforce performance of the applicable provisions of any Lease; (3) with or without court order, enter upon the premises where Equipment is located and repossess and remove the same, all without liability for damage to such premises or by reason such entry or repossession, except for Lessor's, gross negligence or willful misconduct; (4) dispose of any Equipment in a public or private transaction, or hold, use, operate or keep idle the Equipment, tree and clear of any rights or interests of Lessee therein; (5) recover direct, incidental consequential and other damages for the breach of any Lease, including the payment of all Rent and other amounts payable thereunder (discounted at the Discount Rate with respect to any accelerated future amounts), and all costs and expenses incurred by Lessor in exercising its remedies or enforcing its rights thereunder (including all Attorneys' Fees); (6) by written notice to Lessee, cancel any Lease and, as liquidated damages for the loss of Lessor's bargain and not as a penalty, declare immediately due and payable an amount equal to the Stipulated Loss Value applicable to such Leases which Lessee acknowledges to be reasonable liquidated damages in light of the anti harm to Lessor that might be caused by an Event of Default and the facts and circumstances existing as of the Acceptance Date of each Lease; (7) without notice to Lessee, apply or set-off against any Obligations all security deposits, advance payments, proceeds of letters of credit, certificates of deposit (whether or not matured), securities or other additional collateral held by Lessor or otherwise credited by or due from Lessor to Lessee; or (8) pursue all other remedies provided under the UCC or other applicable law. Upon the commencement of any voluntary case under the federal bankruptcy code concerning the Lessee, the remedy provided in clause (6) above shall be automatically exercised without the requirement of prior written notice to Lessee or of any other act or declaration by Lessor, and the liquidated damages described therein shall be immediately due and payable. Lessee shall pay interest equal to the lesser of (a) 12% per annum, or (b) the highest rate permitted by applicable law (**"Default Rate"**) on (i) any amount other than Rent owing under any Lease and not paid when due, (ii) Rent not paid within 30 days of its due date, and (iii) any amount required to be paid upon cancellation of any Lease under this Section 12. Any payments received by Lessor after an Event of Default, including proceeds of any disposition of Equipment, shall be applied in the following order: (A) to all of Lessor's costs (including Attorneys' Fees), charges and expenses incurred in taking, removing, holding, repairing and selling or leasing the Equipment or other Collateral or enforcing the provisions hereof; (B) to the extent not previously paid by Lessee, to pay Lessor for any damages then remaining unpaid hereunder, (C) to reimburse Lessee for any sums previously paid by Lessee as damages; and (D) the balance, if any, shall be retained by Lessor.

(b) No remedy referred to in this Section 12 shall be exclusive, each shall be cumulative (but not duplicative of recovery of any Obligation) and in addition to any other remedy referred to above or other wise available to Lessor at law or inequity, and all such remedies shall survive the cancellation of any Lease. Lessor's exercise or partial exercise of; or failure to exercise, any remedy shall not restrict Lessor from further exercise of that remedy or any other available remedy. No extension of time for payment or performance of any Obligation shall operate to release, discharge. modify, change or affect the original liability of Lessee for any Obligations, either in whole or in part. Lessor may proceed against any Collateral or Guarantor, or may proceed contemporaneously or in the first instance against Lessee, in such order and at such times following an Event of Default as Lessor determines in its sole discretion. In any action to repossess any Equipment or other Collateral, Lessee waives any bonds and any surety or security required by any applicable laws as an incident to such repossession. Notices of Lessor's intention to accelerate, acceleration, nonpayment, presentment, protest, dishonor, or any other notice whatsoever (other than notices of Default specifically required of Lessor pursuant to Section 11 above) arc waived by Lessee and any Guarantor. Any notice, given by Lessor of any disposition of Collateral or other intended action of lessor which is given in accordance with this Agreement at least 5 business days prior to such action, shall constitute fair and reasonable notice of such action.

13. Assignment. Lessor and any Assignee may assign or transfer any of Lessor's interests in any Lease or Equipment without notice to Lessee, subject. however, to the rights of Lessee to use and possess the Equipment under such Lease for so long as no Event of Default has occurred and is continuing. Lessee agrees that: (i) the rights of any Assignee shall not be affected by any breach or default of Lessor or any prior Assignee, and Lessee shall not assert any defense, rights of set-off or counterclaim against any Assignee, nor hold or attempt to hold such Assignee liable for any such breach or default; (ii) no Assignee shall be required to assume any obligations of Lessor under any Lease except the obligation of non-interference in Section I above, (iii) any Assignee expressly assuming the obligations of Lessor shall thereupon be responsible for Lessor's duties under the applicable accruing after assignment and Lessor shall be released from such duties, and (iv) Lessee shall execute and deliver upon request such additional documents, instruments and assurances as Lessor deems necessary in order to (y) acknowledge and confirm all of the terms and conditions of any Lease and Lessor's or such Assignee's rights with respect thereto, and lessee's compliance with all of the terms and provisions thereof, and (z) preserve, protect and perfect Lessor's or Assignee's right, title or interest hereunder and in any Equipment, including, without limitation, such UCC financing statements or amendments, control agreements, corporate or member resolutions, votes, notices of assignment of interests, and confirmations of lessee's obligations and representations and warranties with respect thereto as of the dates requested. lessor may disclose to any potential Assignee any information regarding Lessee, any Guarantor and their Affiliates. **Lessee shall not assign, pledge, hypothecate or in any way dispose of any of its rights or obligations under any Lease, or enter into any sublease or any Equipment, without Lessor's prior written consent. Any purported assignment, pledge, hypothecation, disposal or sublease by Lessee made without Lessor's prior written consent shall be null and void**.

14. Financial and Other Data. (a) During any Lease Term, Lessee shall (i) maintain books and records in accordance with generally accepted accounting principles consistently applied **("GAAP")** and prudent business practice; (ii) promptly provide lessor, within 120 days after the close of each fiscal year, and. upon Lessor's request, within 45 days of the end of each quarter of Lessee's fiscal year, a copy of financial statements for Lessee requested by Lessor, in each case prepared in accordance with GAAP and (in the case of annual statements) audited by independent certified public accountants and (in the case of quarterly statements) certified by the chief financial officer of lessee; provided, however, that for so long as Lessee is legally and timely filing annual and quarterly financial reports on Forms 10-K and 10-Q with the Securities and Exchange Commission which are readily available to the public, the filing of such reports shall satisfy the foregoing financial statement reporting requirements for such entity; and (iii) furnish Lessor all other financial information and reports and such other information as Lessor may reasonably request concerning lessee, its affairs, or the Equipment or its condition, location, use or operation.

(b) lessee represents and warrants that all information and financial statements at any time furnished by or on behalf of Lessee are accurate and reasonably reflect as of their respective dates, results of operations and the financial condition of lessee or such other entity they purport to cover. Credit and other information regarding Lessee, its Affiliates, any Lease or Equipment may be disclosed by lessor to its Affiliates, agents and potential Assignees, notwithstanding anything contained in any agreement that may purport to limit or prohibit such disclosure.

15. Definitions

As used herein, the following tens shall have the meanings assigned or referred to them below:

"Affiliate" means any entity controlling, controlled by or under common control with the referent entity; **"control"** includes (i) the ownership of 25% or more of the voting stock or other ownership interest of any entity and (ii) the status of a general partner of a partnership or managing member of a limited liability company.

"Assignee" means any assignee or transferee of all or any of Lessor's right, title and interest in any Lease or any Equipment.

"Code" means the Internal Revenue Code of 1986, as amended.

"Collateral" means and includes all of Lessee's right, title and interest in and to all Equipment, together with: (i) all parts, attachments, accessories and accessions to, substitutions and replacements for, each item of Equipment; (ii) all accounts, chattel paper, and general intangibles arising from or related to any sale, lease, rental or other disposition of any Equipment to third parties, or otherwise resulting from the possession, use or operation of any Equipment by third parties, including instruments, investment property, deposit accounts, letter of credit rights, and supporting obligations arising thereunder or in connection therewith; (iii) all insurance, warranty and other claims against third parties with respect to any Equipment; (iv) all software and other intellectual property rights used in connection therewith; (v) proceeds of all of the foregoing, including insurance proceeds and any proceeds in the form of goods, accounts, chattel paper, documents, instruments, general intangibles, investment property, deposit accounts, letter of credit rights and supporting obligations; and (vi) all books and records regarding the foregoing. in each case, now existing or hereafter arising.

"Discount Rate" means the 1-year Treasury Constant Maturity rate as published in the Selected Interest Rates table of the Federal Reserve statistical release H.15(519) for the week ending immediately prior to the original Acceptance Date of a lease (or if such rate is no longer determined or published, a successor or alternate rate selected by Lessor).

"Equipment" means the items, units and groups of personal property, licensed materials and fixtures described in each Schedule, together with all replacements, parts, additions, accessories and substitutions therefor, and **"item of Equipment"** means a "commercial unit" as defined and described in Article 2A of the UCC, and includes each functionally integrated and separately marketable group or unit of Equipment.

"Guarantor" means any guarantor, surety, endorser, general partner or co-lessee of Lessee, or other party liable in any capacity, or providing additional collateral security for, the payment or performance of any Obligations of Lessee.

"Guaranty" means any guaranty, surety instrument, security, indemnity, "keep-well" agreement or other instrument or arrangement from or with any Guarantor.

"Obligations" means and includes all obligations of Lessee owing to Lessor under this Agreement, any Lease or Related Agreement, or of any Guarantor owing to Lessor under any Guaranty, together with all other obligations, indebtedness and liabilities of lessee to Lessor under any other financings. leases, loans, notes, progress payment agreements, guaranties or other agreements, of every kind and description, now existing or hereafter arising, direct or indirect, joint or several, absolute or contingent, whether for payment or performance, regardless of how the same may arise or by what instrument, agreement or book account they may be evidenced, including without limitation, any such obligations, indebtedness and liabilities of lessee to others which may be obtained by Lessor through purchase, negotiation, discount, transfer, assignment or otherwise.

"Related Agreement" means and includes any Guaranty and any approval letter or progress payment, assignment, security or other agreement or addendum related to this Agreement, any Lease or any Collateral to which Lessee or any Guarantor is a party.

"Stipulated Loss Value" means, as of any particular date, the product obtained by multiplying the **"Lessor's Cost"** specified in the Schedule by the percentage set forth in the **"Schedule or Stipulated Loss Values"** attached to the Schedule, specified opposite the Rent installment number (or date) becoming due immediately after the Casualty, Event of Default or other event requiring the calculation of Stipulated Loss Value. If there is no Schedule of Stipulated Loss Values attached to a Schedule, or if the Schedule of Stipulated Loss Values does not otherwise cover a Rent installment number (or date), Stipulated Loss Value on any Rent payment date shall equal the net present value of: (a) all unpaid Rent for the remainder of the Lease Term, plus (b) the amount of any purchase obligation, fixed price purchase option, or TRAC amount payment or, if there is no such obligation, option or payment, then the fair market value of the Equipment as of the end of the Lease Term, as estimated by lessor in its sole discretion, all discounted to present value at the Discount Rate.

"UCC" means the Uniform Commercial Code in effect in the state specified in Section 16(f) of this Agreement.

"Vendor" means the manufacturer, distributor, supplier or other seller (whether or not a merchant or dealer) of the Equipmen1 and any sales representative or agent thereof.

16. Miscellaneous. (a) At Lessor's request, Lessee shall execute, deliver, file and record such financing statements and other documents as Lessor deems necessary to protect Lessor's interest in the Equipment and to effectuate the purposes of any Lease or Related Agreement, and Lessee authorizes, and irrevocably appoints Lessor as its agent and attorney-in-fact, with right of substitution and coupled with an interest, to (i) execute, deliver, tile, and record any such item, and to take such action for Lessee and in Lessee's name, place and stead, (ii) make minor corrections to manifest errors in factual data in any Schedule and any addenda, attachments, exhibits and riders thereto, and (iii) after the occurrence of an Event of Default, enforce claims relating to the Equipment against insurers, Vendors or other persons, and to make, adjust, compromise, settle and receive payment under such claims; but without any obligation to do so.

(b) Federal law requires all financial institutions to obtain, verify and record information that identifies each entity that obtains a loan or other financial accommodation. The first time lessee requests a financial accommodation from Lessor, the Lessor may ask for Lessee's (or any Guarantor's) legal name, address, tax ID number and other identifying information. Lessee shall promptly provide copies of business licenses or other documents evidencing the existence and good standing of Lessee or any Guarantor requested by Lessor.

(c) Time is of the essence in the payment and performance of all of Lessee's Obligations under any Lease or Related Agreement. This Agreement,, and each Lease or Related Agreement may be executed in one or more counterparts, each of which shall constitute one and the same agreement. All demands, notices, requests, consents, waivers and other communications concerning this Agreement and any Lease or Related A agreement shall be in writing and shall be deemed to have been duly given when received, personally delivered or three business days after being deposited in the mail, first class postage prepaid, or the business day after delivery to an express carrier, charges prepaid, addressed to each party at the address provided herein, or at such other address as may hereafter be furnished in writing by such party to the other.

(d) Except as otherwise agreed between Lessee and Lessor in writing, Lessee shall reimburse Lessor upon demand for costs and expenses incurred by Lessor in connection with the execution and delivery of this Agreement, any Lease or Related Agreement. Lessee shall reimburse Lessor on demand for all costs (including Attorneys' Fees) incurred by Lessor in connection with Lessee's exercise of any purchase or extension option under any Lease, or any amendment or waiver of the terms of this Agreement or any Lease or Related Agreement requested by Lessee.

(e) Any provisions of this Agreement or any Lease or Related Agreement which are unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such unenforceability without invalidating the remaining provisions thereof, and any such unenforceability shall not render unenforceable such provisions in any other jurisdiction. Any requirement for the execution and delivery of any document, instrument or notice may be satisfied, in Lessor's discretion, by authentication as a record within the meaning of, and to the extent permitted by, Article 9 of the UCC.

(f) THIS AGREEMENT AND ANY LEASE OR RELATED AGREEMENT, AND THE LEGAL RELATIONS OF THE PARTIES THERETO, SHALL IN ALL RESPECTS BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF RHODE ISLAND, WITHOUT REGARD TO CHOICE OF LAW PRINCIPLES; THE PARTIES CONSENT AND SUBMIT TO THE JURISDICTION OF THE STATE AND FEDERAL COURTS OF SUCH STATE FOR THE PURPOSES OF ANY SUIT, ACTION OR OTHER PROCEEDING ARISING THEREFROM, AND EXPRESSLY WAIVE ANY OBJECTIONS THAT IT MAY HAVE TO THE VENUE OF SUCH COURTS. THE PARTIES EXPRESSLY WAIVE ANY RIGHT TO TRIAL BY JURY IN ANY ACTION BROUGHT ON OR WITH RESPECT THERETO. IN NO EVENT SHALL LESSOR HAVE ANY LIABILITY TO LESSEE FOR INCIDENTAL, GENERAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES. Any cause of action by Lessee against Lessor relating to this Agreement or any Lease or Related Agreement shall be brought within one year after any such cause of action first arises, and Lessee hereby waives the benefit of any longer period provided by statute.

(g) EACH LEASE, TOGETHER WITH THIS AGREEMENT AND ANY REL.ATED AGREEMENTS, (i) CONSTITUTES THE FINAL AND ENTIRE AGREEMENT BETWEEN THE PARTIES SUPERSEDING ALL CONFLICTING TERMS OR PROVISIONS OF ANY PRIOR PROPOSALS, APPROVAL LETTERS, TERM SHEETS OR OTHER AGREEMENTS OR UNDERSTANDINGS BETWEEN THE PARTIES, (ii) MAY NOT BE CONTRADICTED BY EVIDENCE OF (y) ANY PRIOR WRITTEN OR ORAL AGREEMENTS OR UNDERSTANDINGS, OR (z) ANY CONTEMPORANEOUS OR SUBSEQUENT ORAL AGREEMENTS OR UNDERSTANDINGS BETWEEN THE PARTIES; and (iii) MAY NOT BE AMENDED, NOR MAY ANY RIGITTS THEREUNDER BE WAIVED, EXCEPT BY AN INSTRUMENT IN WRITING SIGNED BY THE PARTY CHARGED WITH SUCH AMENDMENT OR WAIVER.

In Witness Whereof, Lessor and Lessee have executed this Agreement as of the date first above written.

BANC OF AMERICA LEASING & CAPITAL, LLC (Lessor)

By: /s/ Denise C. Simpson
Print Name: Denise C. Simpson
Title: Vice President

PHOTRONICS,INC. (Lessee)

By: /s/ JOHN P. JORDAN
Print Name: JOHN P. JORDAN
Title: Sr Vice President, CFO & Treasurer
Taxpayer ID# : 06-0854886
Org. ID#(if any)

Chief Executive Office:
15 Secor Road
Brookfield, CT 06804

Master Lease Agreement Number: 48869-90000

Amended Schedule Number: 001 (the "Transaction")

To: Banc of America Leasing & Capital, LLC

The undersigned hereby certifies that all property described in the above-referenced Transaction by and between **Banc of America Leasing & Capital, LLC,** and the undersigned has been furnished, that delivery and installation has been fully completed as required, and that such property has been irrevocably accepted and is satisfactory in all respects to the undersigned for purposes of the Transaction.

Subject to the holdback provisions set forth in the Schedule, We hereby authorize you to disburse the proceeds of this Transaction as follows:

Disburse To:	**Amount:**
Previously funded through Progress Payment(s)	$ 32,130,455.08 *(JPY 3,336,300,000)
Hold-Back from Vendor (NuFlare)	$ 3,576,780.16 *(JPY 370,700,000)
Credit to Sch 001 (Exchange Rate Fluctuation)	($ 112,559.44) *(USD)
TOTAL	**$35,594,675.80 *(JPY 3,707,000,000)**

Portion held by Banc of America Leasing & Capital, LLC per the request of Photronics, Inc., and Hold-Back and Total amounts subject to adjustment, as stated in more detail in Section 9. of the Amended Schedule 001

PHOTRONICS, INC.
(Lessee)

By: **/s/ JOHN P. JORDAN**

Printed Name: **JOHN P. JORDAN**

Tittle: **Executive Vice President & CFO**

Date: **FEBRUARY 8, 2021**

Bank of America

Banc of America Leasing & Capital, LLC	Amended Schedule to Master Lease Agreement	Amended Schedule Number .001

This Schedule (**"Schedule"**), dated as of December 11, 2020, between **Banc of America Leasing & Capital, LLC** (**"Lessor"**) and .Photronics. Inc. (**"Lessee"**) is executed pursuant to Master Lease Agreement Number 48869-90000 dated July 25, 2019. (the **"Master Lease"**), which is incorporated into this Schedule by this reference. Unless otherwise defined in this Schedule, capitalized terms used in this Schedule have the respective meanings assigned to such terms in the Master Lease. If any provision of this Schedule conflicts with any provision of the Master Lease. the provisions contained in this Schedule shall prevail. Lessee hereby authorizes Lessor to insert the serial numbers and other identification data of the Equipment, dates, and other omitted factual matters or descriptions in this Schedule.

1. **Description of Equipment; Location.** The Equipment subject to this Schedule, which has a cost to Lessor in the aggregate of **$35,594,675.80 (JPY 3,707.000.000),** which may include taxes, shipping, installation and other related expenses, if any (collectively **"Lessor's Cost"**), are as follows:

.Quantity.	Description.	Lessor's Cost
1	EBM-9000 Electron-Beam Mask Lithography System	

Location of Equipment. The Equipment will be located or (in the case of over-the-road vehicles) based at the following locations:

.Location.	Address.	.City.	County.	.State.	ZIP
A	10136 S. Federal Way	Boise	Ada	ID	83716

2. **Acceptance.** Lessee acknowledges and represents that the Equipment (a) has been delivered to, received and Inspected by Lessee, (b) is in good operating order, repair, condition and appearance, (c) is of the manufacture, design and capacity selected by Lessee and is suitable for the purposes for which the Equipment is leased, and is acceptable and satisfactory to Lessee. (d) does not require any additions or modifications to make it suitable for use, other than ancillary modifications or additions normally made by lessees of similar assets. and is available for use and lease by Lessee and Lessor, and (e) has been irrevocably accepted as "Equipment" leased by Lessee under this Schedule as of the date written below (the **"Acceptance Date"**). Lessee hereby authorizes and directs Lessor to reimburse Lessee or pay Vendors for the purchase price of the Equipment in accordance with Vendors' invoices therefor, receipt and approval of which are hereby reaffirmed by Lessee.

3. **Lease Term.** The original Lease Term for the Lease of Equipment under this Schedule consists of: (i) an **"Interim Term"** (if any) beginning on the Acceptance Date, and continuing through and including the day preceding the Base Date; and (ii) a **"Base Term"** of **Sixty (60)** months, beginning on **December 30, 2020** (the **"Base Date"**).

4. **Rent** Rent payable under this Schedule consists of: (i) **"Interim Rent"**, which shall be due Lessor for each day of the Interim Term and equal the daily equivalent of the initial Base Rent, and payable on the Base Date; and (ii) **"Base Rent",** which shall be payable in **arrears** in **Three (3)** consecutive monthly installments of **$39.071.98** each, followed by **Nine (9)** consecutive monthly installments of **$626.960.07** each, followed by **Forty-Eight (48)** consecutive monthly installments of **$479,988.05** each, or as set forth in the Schedule of Base Rent installments attached hereto, with the first Base Rent installment being payable **Thirty (30) days following** the Base Date and the remaining Base Rent installments being payable on the **30th** day of each succeeding month.

5. **Tax Exemption; Personal Property Taxes.** Lessor will invoice Lessee for all sales and use taxes as and when due and payable in accordance with applicable law, unless Lessee timely delivers to Lessor a valid exemption certificate with respect to such taxes. Delivery of such certificate shall constitute Lessee's representation and warranty that no such taxes shall become due and payable with respect to the Equipment, and Lessee shall indemnify and hold harmless Lessor from and against any and all liability or damages, including late charges and interest which Lessor may incur by reason of the assessment of such taxes. Notwithstanding any provision to the contrary in this Lease, Lessor shall file directly with all appropriate taxing authorities all declarations, returns, inventories and other documentation with respect to any personal property taxes due or to become due with respect to the Equipment **("Taxes")** and shall pay on or before the date when due all such Taxes assessed, billed or otherwise payable with respect to such Equipment directly to such taxing authorities. Lessee shall indemnify and, upon demand, reimburse Lessor for all Taxes paid by Lessor. The indemnity, covenants and reimbursement obligations set forth herein shall continue in full force and effect and shall survive the expiration or earlier termination of this Lease.

6. Tax Matters. Lessee represents, warrants and agrees that (i) Lessee will not claim that Lessee is the owner of the Equipment or that Lessee is otherwise entitled to all or any of the Tax Benefits; (ii) the Equipment will not require any improvements, modifications, or additions (other than ancillary or incidental items of removable equipment) in order to be rendered complete for its intended use by Lessee; (iii) the Equipment will not constitute "limited use property" within the meaning of Rev. Proc. 2001-28; (iv) during the Lease Term, Lessor shall not be required to include in its gross income for federal income tax purposes (1) any amount derived from the cost of any alteration, addition, improvement, modification, replacement, or substitution of the Equipment or from any refund or credit from the Vendor of the Equipment or (2) any foreign source income under Section 863 of the Code; (v) the Equipment will not constitute "public utility property" or "tax-exempt use property" within the meaning of Sections 168(i)(10) or 168(h) of the Code; and (vi) the Equipment constitutes "qualified property" eligible for the additional "bonus depreciation" deduction allowance described in Section 168(k) of the Internal Revenue Code of 1986, as amended, and Lessee acknowledges that Lessor has assumed such eligibility in reliance upon the foregoing representation and warranty of Lessee. The definition of "Tax Benefits• set forth in Section 7(c) of the Master Lease is hereby amended to include such allowance, and any loss, disallowance, recapture or delay in claiming of such allowance shall constitute a "Tax Loss" as defined therein.

7. Further Representations and Agreements. Lessee represents, warrants and agrees as follows: (a) all representations and warranties of Lessee contained in the Master Lease are restated as of the Acceptance Date and are true and correct as of such date; (b) there has been no material adverse change in the operations, business, properties or condition, financial or otherwise, of Lessee or any Guarantor since October 31. 2019; (c) there exists no Default or Event of Default as of the Acceptance Date; and (d) the operation and maintenance of any Equipment in the ordinary course by Lessee does not require the entry into any software or other intellectual property rights agreement with any licensor or other person, except as disclosed to Lessor in writing prior to the Acceptance Date.

8. Lease Options.

(A) Extension: Purchase Options.. Provided no Event of Default has occurred and remains uncured, and upon Lessee having provided Lessor with written notice not more than 360 days or less than 180 days prior to expiration of the Lease Term, Lessee may irrevocably elect to:

(i) extend the Lease Term as to all and not less than all of the Equipment under this Schedule for a renewal period to be agreed upon by Lessee and Lessor for an amount equal to the then fair market rental value of the Equipment, as determined by Lessor, plus applicable taxes, payable monthly by Lessee to Lessor on the first day of each month during the extension term, or

(ii) purchase all of Lessor's right, title and interest in and to all, but not less than all, of the Equipment under this Schedule, free from all liens and encumbrances created by Lessor, but otherwise on an "AS-IS, WHERE-IS," quitclaim basis, for a purchase price equal to: the then fair market value of the Equipment, as determined by Lessor; *plus* all Base Rent installments, late charges and other amounts then due and owing under the Lease; *plus* all applicable taxes, assessments and other charges due or payable in connection with the sale of the Equipment (collectively, the **"Purchase Price"**). Lessee shall pay Lessor the Purchase Price on or before the expiration of the Base Term in immediately available funds.

As used herein, **"fair market value"** means the amount which would be obtained in an arm's-length transaction between an informed and willing buyer-user (other than a buyer-user currently in possession or a used equipment or scrap dealer) and an informed and willing seller, each under no compulsion to buy or sell, and **"fair market rental value"** means the amount which would be obtained in an arm's-length transaction between an informed and willing lessee (other than a lessee currently in possession) and an informed and willing lessor, each under no compulsion to lease; provided, however, that in each such determination (a) the costs of removal of any Equipment from the location of current use shall not be a deduction from such value, (b) it shall be assumed (whether or not the same be true) that the Equipment has been maintained and would have been returned to Lessor in compliance with the requirements of this Lease, and (c) if any Equipment has been attached to or installed on or in any other property leased or owned by Lessee, the value for such Equipment shall be determined on an installed basis, in place and in use.

(B) Early Buy-Out. Provided no Event of Default has occurred and then remains uncured, Lessee may, by written notice to Lessor, purchase all, but not less than all, Equipment subject to this Schedule as of the due date for the **Forty-Eighth (48)**, scheduled Base Rent installment (the **"Early Buy-Out Date"**). Such notice to Lessor shall be given not more than 360 days or less than 180 days prior to the Early Buy-Out Date and once given shall be irrevocable. On the Early Buy-Out Date, Lessee shall pay to Lessor the Base Rent installment then due, together with all accrued interest, late charges and all other amounts then due and owing under this Lease, *plus* an amount equal to **Thirty-Nine and 8400/10000 percent (39.8400%) of Lessor's Cost for all Equipment,** which Lessor and Lessee acknowledge represents a reasonable current estimate of the fair market value of the Equipment as of the Early Buy -Out Date, *plus* any applicable taxes. Upon such payment, the obligation of Lessee to pay Rent hereunder with respect to the Equipment after the Early Buy-Out Date shall cease, the Lease Term of this Lease shall terminate on the Early Buy-Out Date, and Lessor shall convey all of its right, title and interest in the Equipment to Lessee free from all liens and encumbrances created by Lessor, but otherwise on an "AS-IS, WHERE-IS," quitclaim basis.

9. Holdback. Lessee has requested, and Lessor has agreed, that Lessor withhold from the vendor of the Equipment a portion of the Lessor's Cost in the amount of **$3.576.780.16**. (subject to adjustment as described below. the **"Holdback Amount"**) for a period not to exceed **150 days** (the **"Holdback Period"**). It shall be deemed an Event of Default in the event Lessee does not, for whatever reason, authorize Lessor (both in writing and through verbal telephonic confirmation) to disburse the Holdback Amount to the vendor prior to the expiration of the Holdback Period. The Holdback Amount is an estimate based on an amount withheld from the vendor of the Equipment equal to JPY 370,000,000 at US Dollar to Japanese Yen (USO to JPY) exchange rates in effect on or about the date of this Schedule. Lessee acknowledges and agrees that the Holdback Amount will be adjusted to reflect the US Dollar to Japanese Yen (USD to JPY) exchange rates in effect and available to Lessor on or about the date on which Lessor funds the Holdback Amount to the vendor of the Equipment. Lessee authorizes Lessor to adjust all amounts set forth in this Schedule to reflect the actual and final Holdback Amount, as funded by Lessor, and Lessee shall promptly, upon Lessor's request, confirm in writing the final US Dollar equivalent of the Holdback Amount and any and all amounts adjusted in this Schedule as a result of the determination of the actual and final Holdback Amount.

This Schedule and any other documents or instruments executed by either party in connection herewith (collectively the "Documents"), may be executed and delivered by facsimile signature or other electronic or digital means (including, without limitation, Adobe's Portable Document Format ("PDF")). Any such signature shall be of the same force and effect as an original signature, it being the express intent of the parties to create a valid and legally enforceable contract between them. The exchange and delivery of the Documents and the related signature pages via facsimile or as an attachment to electronic mail (including in PDF) shall constitute effective execution and delivery by the parties and may be used by the parties for all purposes. Notwithstanding the foregoing, at the request of either party, the parties hereto agree to exchange inked original replacement signature pages as soon thereafter as reasonably practicable.

BANC OF AMERICA LEASING & CAPITAL, LLC

Printed Name: Alison R Hook
Title: Senior Vice President

PHOTRONICS, INC.

Printed Name: JOHN P. JORDAN
Title: Executive Vice President & CFO
Acceptance Date: December 30, 2020

Where multiple counterpart originals of this Schedule have been executed by Lessee and Lessor, only the counterpart marked "Lessor's Copy" shall be deemed chattel paper evidencing the Lease of Equipment subject to this Schedule, and a security interest in such chattel paper and Lease may be perfected through the transfer and possession of the "Lessor's Copy" of such Schedule only, without the need to transfer possession of the Master Lease, any Related Agreement or any other document executed and delivered in connection with this Lease.

The terms applicable to the Lease of Equipment subject to this Schedule are supplemented by the following:
Annex I: Schedule of Stipulated Loss Values
Annex II: Supplemental Maintenance and Return Conditions

ANNEX I
TO AMENDED
SCHEDULE NO. 001
48869-90000

SCHEDULE OF
STIPULATED LOSS VALUES

Base Rent Installment Number	Stipulated Loss Value Percentage	Base Rent Installment Number	Stipulated Loss Value Percentage
0	103.50	31	66.41
1	103.57	32	65.19
2	103.63	33	63.96
3	103.70	34	62.73
4	102.11	35	61.50
5	100.53	36	60.27
6	98.94	37	59.04
7	97.35	38	57.80
8	95.75	39	56.57
9	94.16	40	55.33
10	92.56	41	54.09
11	90.96	42	52.85
12	89.35	43	51.61
13	88.16	44	50.36
14	86.97	45	49.11
15	85.77	46	47.87
16	84.57	47	46.62
17	83.37	48	45.37
18	82.17	49	44.11
19	80.97	50	42.86
20	79.77	51	41.60
21	78.56	52	40.34
22	77.35	53	39.08
23	76.14	54	37.83
24	74.93	55	36.57
25	73.72	56	35.31
26	72.51	57	34.05
27	71.29	58	32.79
28	70.07	59	31.52
29	68.85	60	30.26
30	67.63		

ANNEX II
TO AMENDED
SCHEDULE NO. 001
48869-90000

SUPPLEMENTAL MAINTENANCE AND RETURN CONDITIONS
SEMICONDUCTOR MANUFACTURING

In addition to the maintenance and return provisions applicable to all Equipment set forth in the Master Lease, the following shall apply to the Equipment subject to the Schedule:

1. Lessee will at all times use each item of Equipment for the purpose it was originally designed and at the rated capacities as specified by the original equipment manufacturer ("OEM"). Lessee shall (i) use each item of Equipment leased under the Schedule (each, an "Item") solely in the conduct of the Lessee's business, for the purpose for which such item was designed, (ii) operate, maintain, service and repair each such item (A) in material compliance with **(1)** the OEM and/or Supplier's maintenance and operating manuals, or service agreements, issued by the OEM and/or Supplier or authorized service provider, if and to the extent then applicable to such Item, (2) the supply contract relating to such Item, and (3) all applicable laws pertaining to such Item; and (B) without limiting the foregoing, so as to cause each Item to be in good repair and operating condition and in at least the same condition as when accepted by Lessee under the Schedule, but taking into account ordinary wear and tear, any permitted modifications, and any other circumstances relating to the operation of such Item in the manner contemplated in the Master Lease and the Schedule, including this Annex; and (iii) maintain all records relating thereto, in a manner no less than Lessee's normal customary practices with respect to similar equipment.

2. Equipment shall be under the OEM's continuous maintenance plan for the duration of the Schedule and at expiration of the Lease Term must be brought to the current revision level including but not limited to hardware and software upgrades and improvements. Maintenance and repairs to the Equipment shall be performed by the OEM or its authorized representative with the authority to sign the maintenance, service and/or repair log. Written records of all work performed on the Equipment shall be dated and signed by the appropriate authority, and kept by the Lessee.

3. If any parts comprising any Item purchased and leased by Lessor on the Acceptance Date of the Schedule, or any replacement or substitute parts for such original parts, shall become worn out, lost, stolen, destroyed, damaged beyond repair or otherwise permanently unfit for use, Lessee, at its own expense , shall promptly replace such parts, or cause the same to be replaced, by replacement parts which are free of all liens and of such quality and in such manner that such Item shall be in as good an operating condition as, and have a value, remaining useful life and utility at least equal to the value, remaining useful life and utility of, such Item prior to such replacement (assuming such Item was, at the time of such replacement, in the condition required by the terms hereof). Immediately upon a conforming replacement part becoming incorporated or installed in or attached to such Item as above provided, without further act, (i) title to the replaced part shall vest in Lessee, free and clear of all rights of Lessor, and shall no longer be part of an Item hereunder, (ii) good title to such replacement part shall vest in Lessor free and clear of all liens and (iii) such replacement part shall become subject to the Lease and be deemed part of such Item for all purposes to the same extent as if originally incorporated or installed in or attached to such Item.

4. Lessee shall ensure that all Equipment and the operation of such Equipment conforms to any and all applicable local, state, and federal laws.

5. Lessee shall ensure that any and all inspections, overhauls, rebuilds, or certifications of the Equipment required to satisfy the terms and conditions of the Schedule, including this Annex, and the Master Lease that are scheduled within six months of the expiration of the Lease Term are completed prior to redelivery to Lessor.

6. All tooling and documentation must be current, present and available.

7. Decommissioning, decontaminating, dismantling, crating and installation of correct locking mechanisms, if any, are to be performed by the OEM, or its authorized service provider. Any transportation devices, such as crates, metal skids, lifting slings, brackets, etc. that were with the Equipment when originally delivered must be used.

8. At time of return, all process fluids, gases and solids are to be removed from the Equipment and disposed of in accordance with prevailing waste disposal laws and regulations. Equipment must be purged, cleaned and decontaminated to allow for interstate transfer, storage and subsequent use, which decontamination shall materially comply with (A) Lessee' s practices for equipment of the same type (but in no event to a standard less stringent than applicable industry standards, (B) OEM requirements and (C) any then applicable federal environment laws. Written certification of such removal and disposal shall be provided by the OEM or its authorized service provider

9. Equipment must be in a condition such that it can perform to the OEM's then applicable specifications, and Lessee shall provide evidence, in the form of a letter from the OEM, that the Equipment qualifies for continued OEM maintenance service and OEM warranty, if applicable.

10. At time of return, all passwords are to be reset to original, or made known to Lessor. In addition, the previous 12-month operating file, calibration report and decommissioning report from the OEM must be provided to Lessor upon return.

11. Until the Equipment is decommissioned in readiness for redelivery to Lessor, the Equipment must remain operational with Lessee providing adequate electrical power, lighting, heat, water and compressed air necessary to maintain and demonstrate the Equipment to any potential buyer. Lessee shall permit Lessor to video record the Equipment "under power" at the Lessee's facility at times mutually agreeable to the Lessor and Lessee prior to de- installation at the end of the Lease Term.

12. Unless Lessee elects any purchase option set forth in the Lease, or unless otherwise instructed by Lessor, Lessee will notify Lessor in writing no less than 90 days prior to lease maturity and Equipment redelivery to facilitate coordination of inspection and other return logistics. If Lessee fails to give such notice, the Lease may, at Lessor's option, continue on a month-to-month basis for 90 days after delivery of such notice.

Master Lease Agreement No. 48869-90000

Amended Schedule No. 001

Tax laws require Banc of America Leasing & Capital, LLC, as legal owner of your leased equipment, to be responsible for listing the equipment under this lease contract, and any supplements thereto, for any Federal, State, County, or Municipal taxes applicable to this leased property, and for timely payment of taxes assessed thereon.

Your lease agreement defines your responsibility for reimbursement of these taxes to Banc of America Leasing & Capital, LLC promptly as Lessee.

Please acknowledge your understanding and acceptance of these conditions by signing and dating below:

I (We) will declare when listing property to taxing authorities, the equipment covered by this and any subsequent leases as LEASED equipment only.

I (We) will immediately notify Banc of America Leasing & Capital, LLC of any change in location of this equipment.

I (We) will reimburse Banc of America Leasing & Capital, LLC promptly upon receipt of invoices for any tax.es paid by Banc of America Leasing & Capital, LLC assessed on equipment we are leasing therefrom.

Equipment Location:

Location	Address	City	Country	State	ZIP
A	10136 S. FEDERAL WAY	BOISE	ADA	ID	83716

PHOTRONICS, INC.

/s/ JOHN P. JORDAN

BY

Executive Vice President & CFO

TITLE

2/8/21

DATE

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
March 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
March 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 January 31, 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
March 10, 2021

EXHIBIT 32.2

Section 1350 Certification of the Chief Financial Officer

I, John P. Jordan, Chief Financial 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 January 31, 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
March 10, 2021