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

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, 2020

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: 001-35061

NeoPhotonics Corporation
(Exact name of registrant as specified in its charter)

Delaware	**94-3253730**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

3081 Zanker Road
San Jose, California 95134
(Address of principal executive offices, zip code)

(408) 232-9200
(Registrant's telephone number, including area code)

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 Stock, $0.0025 par value	NPTN	The New York Stock Exchange

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 ("Exchange Act") during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit 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.

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 ☒

As of October 27, 2020, there were approximately 50,146,455 shares of the registrant’s Common Stock outstanding.

NEOPHOTONICS CORPORATION
For the Quarter Ended September 30, 2020
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PART I. FINANCIAL INFORMATION

ITEM 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited)

(In thousands, except par value data)	As of September 30, 2020	As of December 31, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 83,619	$ 70,467
Short-term investments	27,667	7,638
Restricted cash	11,655	10,972
Accounts receivable, net of allowance for doubtful accounts	60,148	68,890
Inventories	46,989	46,930
Prepaid expenses and other current assets	27,507	25,851
Total current assets	257,585	230,748
Property, plant and equipment, net	67,729	81,133
Operating lease right-of-use assets	14,297	15,603
Purchased intangible assets, net	1,618	2,151
Goodwill	1,115	1,115
Other long-term assets	3,904	3,929
Total assets	$ 346,248	$ 334,679
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 54,822	$ 58,554
Current portion of long-term debt	3,153	3,044
Accrued and other current liabilities	51,049	47,481
Total current liabilities	109,024	109,079
Long-term debt, net of current portion	31,799	39,237
Operating lease liabilities, noncurrent	15,039	16,543
Other noncurrent liabilities	8,868	9,614
Total liabilities	164,730	174,473
Commitments and contingencies (Note 12)		
Stockholders' equity:		
Preferred stock, $0.0025 par value, 10,000 shares authorized, no shares issued or outstanding	—	—
Common stock, $0.0025 par value, 100,000 shares authorized; at September 30, 2020, 50,138 shares issued and outstanding; at December 31, 2019, 48,526 shares issued and outstanding	125	121
Additional paid-in capital	592,875	582,504
Accumulated other comprehensive loss	(4,063)	(7,871)
Accumulated deficit	(407,419)	(414,548)
Total stockholders' equity	181,518	160,206
Total liabilities and stockholders' equity	$ 346,248	$ 334,679

See accompanying Notes to Condensed Consolidated Financial Statements.

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
(In thousands, except per share data)	**2020**	**2019**	**2020**	**2019**
Revenue	$ 102,398	$ 92,392	$ 302,970	$ 253,448
Cost of goods sold	77,994	66,193	215,338	195,837
Gross profit	24,404	26,199	87,632	57,611
Operating expenses:				
Research and development	15,276	13,688	40,849	42,164
Sales and marketing	3,692	3,832	11,630	12,058
General and administrative	7,758	7,403	23,350	22,330
Amortization of purchased intangible assets	—	—	—	119
Asset sale related costs	87	12	219	388
Restructuring charges	141	3	141	261
Gain on asset sale	—	—	—	(817)
Total operating expenses	26,954	24,938	76,189	76,503
Income (loss) from operations	(2,550)	1,261	11,443	(18,892)
Interest income	21	95	141	293
Interest expense	(263)	(483)	(942)	(1,472)
Other income (expense), net	(3,317)	2,960	(2,314)	2,452
Total interest and other income (expense), net	(3,559)	2,572	(3,115)	1,273
Income (loss) before income taxes	(6,109)	3,833	8,328	(17,619)
Income tax (provision) benefit	1,206	(1,561)	(1,199)	(1,526)
Net income (loss)	$ (4,903)	$ 2,272	$ 7,129	$ (19,145)
Basic net income (loss) per share	$ (0.10)	$ 0.05	$ 0.14	$ (0.41)
Diluted net income (loss) per share	$ (0.10)	$ 0.05	$ 0.14	$ (0.41)
Weighted average shares used to compute basic net income (loss) per share	49,936	47,666	49,212	46,949
Weighted average shares used to compute diluted net income (loss) per share	49,936	48,615	51,411	46,949

See accompanying Notes to Condensed Consolidated Financial Statements.

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(Unaudited)

(in thousands)	**Three Months Ended September 30,**		**Nine Months Ended September 30,**	
	2020	**2019**	**2020**	**2019**
Net income (loss)	$ (4,903)	$ 2,272	$ 7,129	$ (19,145)
Other comprehensive income (loss):				
Foreign currency translation adjustments, net of zero tax	5,317	(4,615)	3,808	(3,468)
Total other comprehensive (loss) income	5,317	(4,615)	3,808	(3,468)
Comprehensive income (loss)	$ 414	$ (2,343)	$ 10,937	$ (22,613)

See accompanying Notes to Condensed Consolidated Financial Statements.

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(Unaudited)

Three Months Ended September 30, 2020	Common stock		Additional paid-in capital	Accumulated other comprehensive loss	Accumulated deficit	Total stockholders' equity
(In thousands)	Shares	Amount				
Balances at June 30, 2020	49,547	$ 124	$ 590,800	$ (9,380)	$ (402,516)	$ 179,028
Comprehensive income (loss)	—	—	—	5,317	(4,903)	414
Issuance of common stock upon exercise of stock options	7	—	40	—	—	40
Issuance of common stock under employee stock purchase plan	—	—	—	—	—	—
Issuance of common stock for vested restricted stock units	690	2	(2)	—	—	—
Tax withholding related to vesting of restricted stock units	(106)	(1)	(935)	—	—	(936)
Stock-based compensation costs	—	—	2,972	—	—	2,972
Balances at September 30, 2020	50,138	$ 125	$ 592,875	$ (4,063)	$ (407,419)	$ 181,518

Three Months Ended September 30, 2019	Common stock		Additional paid-in capital	Accumulated other comprehensive loss	Accumulated deficit	Total stockholders' equity
(In thousands)	Shares	Amount				
Balances at June 30, 2019	47,152	$ 118	$ 572,734	$ (5,979)	$ (418,889)	$ 147,984
Comprehensive income (loss)	—	—	—	(4,615)	2,272	(2,343)
Offering Cost	—	—	(46)	—	—	(46)
Issuance of common stock in exchange for research and development services	276	1	1,499	—	—	1,500
Issuance of common stock upon exercise of stock options	98	—	397	—	—	397
Issuance of common stock under employee stock purchase plan	—	—	—	—	—	—
Issuance of common stock for vested restricted stock units	573	1	(1)	—	—	—
Tax withholding related to vesting of restricted stock units	(82)	—	(378)	—	—	(378)
Stock-based compensation costs	—	—	2,883	—	—	2,883
Balances at September 30, 2019	48,017	$ 120	$ 577,088	$ (10,594)	$ (416,617)	$ 149,997

See accompanying Notes to Condensed Consolidated Financial Statements.

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(Unaudited)

Nine Months Ended September 30, 2020	Common stock		Additional paid-in capital	Accumulated other comprehensive loss	Accumulated deficit	Total stockholders' equity
(In thousands)	Shares	Amount				
Balances at December 31, 2019	48,526	$ 121	$ 582,504	$ (7,871)	$ (414,548)	$ 160,206
Comprehensive income (loss)	—	—	—	3,808	7,129	10,937
Issuance of common stock upon exercise of stock options	322	1	1,386	—	—	1,387
Issuance of common stock under employee stock purchase plan	204	1	1,331	—	—	1,332
Issuance of common stock for vested restricted stock units	1,288	3	(3)	—	—	—
Tax withholding related to vesting of restricted stock units	(202)	(1)	(1,721)	—	—	(1,722)
Stock-based compensation costs	—	—	9,378	—	—	9,378
Balances at September 30, 2020	50,138	$ 125	$ 592,875	$ (4,063)	$ (407,419)	$ 181,518

Nine Months Ended September 30, 2019	Common stock		Additional paid-in capital	Accumulated other comprehensive loss	Accumulated deficit	Total stockholders' equity
(In thousands)	Shares	Amount				
Balances at December 31, 2018	46,378	$ 116	$ 564,722	$ (7,126)	$ (397,472)	$ 160,240
Comprehensive income (loss)	—	—	—	(3,468)	(19,145)	(22,613)
Offering Cost	—	—	(46)	—	—	(46)
Issuance of common stock in exchange for research and development services	276	1	1,499	—	—	1,500
Issuance of common stock upon exercise of stock options	265	—	969	—	—	969
Issuance of common stock under employee stock purchase plan	254	1	1,234	—	—	1,235
Issuance of common stock for vested restricted stock units	996	2	(2)	—	—	—
Tax withholding related to vesting of restricted stock units	(152)	—	(705)	—	—	(705)
Stock-based compensation costs	—	—	9,417	—	—	9,417
Balances at September 30, 2019	48,017	$ 120	$ 577,088	$ (10,594)	$ (416,617)	$ 149,997

See accompanying Notes to Condensed Consolidated Financial Statements.

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

(In thousands)	Nine Months Ended September 30, 2020	2019
Cash flows from operating activities		
Net income (loss)	$ 7,129	$ (19,145)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation and amortization	24,096	23,956
Stock-based compensation expense	9,078	9,294
Deferred taxes	(4)	—
Others	269	333
Gain on sale of assets and other write-offs	(47)	(693)
Allowance for doubtful accounts	(16)	(17)
Write-down of inventories	7,236	6,750
Amortization of operating lease right-of-use assets	1,415	1,320
Foreign currency remeasurement	2,309	(2,534)
Issuance of common stock in exchange for research and development services	—	1,500
Change in operating assets and liabilities:		
Accounts receivable	8,790	9,462
Inventories	(6,592)	(4,049)
Prepaid expenses and other assets	(1,315)	1,978
Accounts payable	(4,052)	(1,096)
Accrued and other liabilities	1,218	(8,670)
Net cash provided by operating activities	49,514	18,389
Cash flows from investing activities		
Purchase of property, plant and equipment	(9,243)	(6,247)
Proceeds from sale of property, plant and equipment and other assets	507	2,138
Purchase of marketable securities	(23,529)	(126)
Proceeds from sale of marketable securities	3,500	—
Net cash used in investing activities	(28,765)	(4,235)
Cash flows from financing activities		
Proceeds from exercise of stock options and issuance of stock under ESPP	2,719	2,204
Offering costs	—	(46)
Tax withholding on restricted stock units	(1,722)	(705)
Proceeds from bank loans, net of debt issuance costs	—	5,000
Repayment of bank loans	(8,349)	(12,312)
Repayment of notes payable	—	(4,806)
Repayment of finance lease liabilities	(64)	(60)
Net cash used in financing activities	(7,416)	(10,725)
Effect of exchange rates on cash, cash equivalents and restricted cash	502	(444)
Net increase in cash, cash equivalents and restricted cash	13,835	2,985
Cash, cash equivalents and restricted cash at the beginning of the period	81,439	69,238
Cash, cash equivalents and restricted cash at the end of the period	$ 95,274	$ 72,223

See accompanying Notes to Condensed Consolidated Financial Statements.

Note 1. Basis of presentation and significant accounting policies

Basis of Presentation and Consolidation

The condensed consolidated financial statements of NeoPhotonics Corporation ("NeoPhotonics" or the "Company") as of September 30, 2020 and for the three and nine months ended September 30, 2020 and 2019, have been prepared in accordance with the instructions on Form 10-Q pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC"). In accordance with those rules and regulations, the Company has omitted certain information and notes normally provided in the Company's annual consolidated financial statements. In the opinion of management, the condensed consolidated financial statements contain all adjustments, consisting only of normal recurring items, except as otherwise noted, necessary for the fair presentation of the Company's financial position and results of operations for the interim periods. These condensed consolidated financial statements do not include all disclosures required by U.S. generally accepted accounting principles ("U.S. GAAP") and should be read in conjunction with the Consolidated Financial Statements and Notes thereto included in the Company's Annual Report on Form 10-K/A for the fiscal year ended December 31, 2019. The results of operations for the three and nine months ended September 30, 2020 are not necessarily indicative of the results expected for the entire fiscal year. All intercompany accounts and transactions have been eliminated.

Certain Significant Risks and Uncertainties

The Company operates in a dynamic industry and, accordingly, can be affected by a variety of factors. For example, any of the following areas could have a negative effect on the Company in terms of its future financial position, results of operations or cash flows: the general state of the U.S., China and world economies; the highly cyclical nature of the industries the Company serves; successful and timely completion of product design efforts; the ability of the Company to sell its new products into new market segments; trade restrictions by the United States against the Company's customers in China, as well as potential retaliatory trade actions taken by China; the loss of any of its larger customers; restrictions on the Company's ability to sell to foreign customers due to additional U.S. or new China trade laws, regulations and requirements; disruptions of the supply chain of components needed for its products; ability to obtain additional financing; inability to meet certain debt covenants; fundamental changes in the technology underlying the Company's products; the hiring, training and retention of key employees; and new product design introductions by competitors. The inputs into the Company's judgments and estimates consider the economic implications of the Covid-19 pandemic as the Company knows them, on its critical and significant accounting estimates. The extent to which the Covid-19 pandemic may impact its business will depend on future developments, which are highly uncertain, such as the duration of the outbreak, travel restrictions, governmental mandates issued to mitigate the spread of the disease, business closures, economic disruptions, and the effectiveness of actions taken to contain and treat the virus. Accordingly, future adverse developments with respect to the Covid-19 pandemic may have a negative impact on its sales, supply chain and results of operations. The inputs into the Company's judgments and estimates also consider the the Department of Commerce Entities List restrictions on Huawei Technologies effective September 2020 for the Company and expected loss of business from Huawei Technologies. See also Note 8.

Concentration

In the three months ended September 30, 2020, Huawei Technologies, together with its affiliate HiSilicon Technologies Co. Ltd. (collectively "Huawei") accounted for approximately 44% of the Company's total revenue. Two other customers were greater than 10% and the Company's top five customers represented approximately 82% of the Company's total revenue. In the three months ended September 30, 2019, Huawei accounted for approximately 37% of the Company's total revenue. One other customer was greater than 10% and the Company's top five customers represented approximately 85% of the Company's total revenue. In the nine months ended September 30, 2020, Huawei accounted for approximately 49% of the Company's total revenue. One other customer was greater than 10% and the Company's top five customers represented approximately 82% of the Company's total revenue. In the nine months ended September 30, 2019, Huawei accounted for approximately 41% of the Company's total revenue. One other customer was greater than 10% and the Company's top five customers represented approximately 84% of the Company's total revenue.

As of September 30, 2020, three customers each accounted for more than 10% of the Company's accounts receivable. As of December 31, 2019, two customers each accounted for more than 10% of the Company's accounts receivable.

Use of Estimates

The preparation of financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported revenue and expenses during the reporting period. Significant estimates made by management include: the useful lives and recoverability of long-lived assets; valuation allowances for deferred tax assets; valuation of excess and obsolete inventories; warranty reserves; litigation accrual and recognition of stock-based compensation, among others. Actual results could differ from these estimates.

Long-lived Assets

The Company assesses the impairment of long-lived assets whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. Due to the Department of Commerce Entities List restrictions effective September 2020 and expected loss of business from Huawei, the Company performed a recoverability test and determined there was no impairment of long-lived assets at September 30, 2020.

An impairment loss would be recognized when the sum of the future net cash flows expected to result from the use of the asset and its eventual disposition is less than its carrying amount. The estimated future cash flows are based upon, among other things, assumptions about expected future operating performance and may differ from actual cash flows.

Leases

The Company determines if an arrangement is a lease at inception. Operating leases are included in operating lease right-of-use ("ROU") assets, other current liabilities and operating lease liabilities on the Company's condensed consolidated balance sheets. Finance leases are included in property, plant and equipment, current portion of long-term debt and long-term debt, net of current portion on the condensed consolidated balance sheets.

Operating lease ROU assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. As most of the Company's leases do not provide an implicit rate, the Company uses an estimate of its incremental borrowing rate based on observed market data and other information available at the lease commencement date. The operating lease ROU assets also include any lease payments made and exclude lease incentives. Lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise such options. The Company does not record leases on the condensed consolidated balance sheet with a term of one year or less. The Company does not separate lease and non-lease components but rather account for each separate component as a single lease component for all underlying classes of assets. Variable lease payments are expensed as incurred and are not included within the operating lease ROU asset and lease liability calculation. Variable lease payments primarily include reimbursements of costs incurred by lessors for common area maintenance and utilities. Lease expense for minimum operating lease payments is recognized on a straight-line basis over the lease term.

Accounting Pronouncements Recently Adopted

In January 2017, the Financial Accounting Standards Board ("FASB") issued ASU 2017-04, *Intangibles-Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment* (“ASU 2017-04”). This standard amends the goodwill impairment test to compare the fair value of a reporting unit with its carrying amount and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit’s fair value, up to the total amount of goodwill allocated to that reporting unit. In November 2019, the FASB issued ASU 2019-10, according to which, the new standard is effective for smaller reporting companies (“SRC”) as defined by the SEC, for fiscal years beginning after December 15, 2022 including interim periods within those fiscal years. The Company early adopted ASU 2017-04 guidance on January 1, 2020. The adoption of this standard had no material impact on the Company’s consolidated financial statements and related disclosures.

In November 2018, the FASB issued ASU 2018-18, *Collaborative Arrangements* (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606 ("ASU 2018-18"), which clarifies that certain transactions between participants in a collaborative arrangement should be accounted for under ASC 606 when the counterparty is a customer. In addition, ASU 2018-18 precludes an entity from presenting consideration from a transaction in a collaborative arrangement as revenue from contracts with customers if the counterparty is not a customer for that transaction. This guidance is effective for the Company beginning after December 15, 2019, with early adoption permitted. The Company adopted new guidance on January 1, 2020. The adoption of ASU 2018-08 had no material impact on the Company’s consolidated financial statements and related disclosures.

Recent Accounting Pronouncements Not Yet Effective

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). ASU 2016-13 amends existing guidance on the impairment of financial assets and adds an impairment model that is based on expected losses rather than incurred losses and requires an entity to recognize as an allowance its estimate of expected credit losses for its financial assets. An entity will apply this guidance through a cumulative-effect adjustment to retained earnings upon adoption (a modified-retrospective approach) while a prospective transition approach is required for debt securities for which an other-than-temporary impairment had been recognized before the effective date. In November 2019, the FASB issued ASU 2019-10, according to which, the new standard is effective for smaller reporting companies ("SRC") as defined by the SEC, for fiscal years beginning after December 15, 2022 including interim periods within those fiscal years. The Company is in the process of evaluating the impact and timing of the adoption on its consolidated financial statements and related disclosures.

Note 2. Revenue

Product revenue

The Company develops, manufactures and sells lasers and other high-speed optoelectronic products that transmit, receive, modify and switch high speed digital optical signals for communications networks. Revenue is derived primarily from the sale of optoelectronic laser, component and module hardware products. The Company sells its products worldwide, primarily to leading network equipment manufacturers.

Revenue recognition

Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration the Company expects to receive in exchange for those products or services. The Company generally bears all costs, risk of loss or damage and retains title to the goods up to the point of transfer of control of promised products to customer. Revenue related to the sale of consignment inventories at customer vendor managed locations is not recognized until the products are pulled from consignment inventories by customers. In instances where acceptance of the product or solutions is specified by the customer, revenue is deferred until such required acceptance criteria have been met. Shipping and handling costs are included in the cost of goods sold. The Company presents revenue net of sales taxes and any similar assessments.

Nature of products

Revenue from sale of hardware products is recognized upon transfer of control to the customer. The performance obligation for the sale of hardware products is satisfied at a point in time. The Company has aligned its products in two groups - High Speed Products and Network Products and Solutions. The following presents revenue by product group (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
High Speed Products	$ 94,532	$ 85,366	$ 277,245	$ 228,393
Network Products and Solutions	7,866	7,026	25,725	25,055
Total revenue	$ 102,398	$ 92,392	$ 302,970	$ 253,448

The following table presents the Company's revenue information by geographical region. Revenue is classified based on the ship to location requested by the customer. Such classification recognizes that for many customers, including those in North America or in Europe, designated shipping points are often in China or elsewhere in Asia (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
China	$ 57,087	$ 44,439	$ 178,661	$ 128,928
Americas	17,201	22,713	51,622	56,138
Rest of world	28,110	25,240	72,687	68,382
Total revenue	$ 102,398	$ 92,392	$ 302,970	$ 253,448

Deferred revenue

The Company records deferred revenue when cash payments are received or due in advance of the Company's performance. There were no deferred revenue balances as of September 30, 2020 and December 31, 2019.

Contract assets

Contract assets are rights to consideration in exchange for goods or services that the Company has transferred to a customer when such right is conditional on something other than the passage of time. Contract assets exclude any amounts presented as an accounts receivable. There were no contract assets balances as of September 30, 2020 and December 31, 2019.

Refund liabilities

The Company recognizes a refund liability if the Company receives consideration from a customer and expects to refund some or all of that consideration to the customer. The refund liabilities as of September 30, 2020 and December 31, 2019 were immaterial.

Note 3. Net income (loss) per share

The following table sets forth the computation of the basic and diluted net income (loss) per share for the periods indicated (in thousands, except per share amounts):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Numerator:				
Net income (loss)	$ (4,903)	$ 2,272	$ 7,129	$ (19,145)
Denominator:				
Weighted average shares used to compute per share amount:				
Basic	49,936	47,666	49,212	46,949
Diluted	49,936	48,615	51,411	46,949
Basic net income (loss) per share	$ (0.10)	$ 0.05	$ 0.14	$ (0.41)
Diluted net income (loss) per share	$ (0.10)	$ 0.05	$ 0.14	$ (0.41)

The Company has excluded the impact of the following outstanding employee stock options and restricted stock units as well as the shares expected to be issued under its employee stock purchase plan from the computation of diluted net income (loss) per share, as their effect would have been antidilutive (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Employee stock options	2,282	1,217	658	2,833
Restricted stock units	3,622	1,037	80	3,208
Market-based restricted stock units	612	641	612	641
Performance-based restricted stock units	90	—	90	—
Employee stock purchase plan	169	172	—	182
	6,775	3,067	1,440	6,864

Note 4. Cash, cash equivalents, short-term investments and restricted cash

The following table summarizes the Company's cash, cash equivalents and restricted cash (in thousands):

	September 30, 2020	December 31, 2019
Cash and cash equivalents	$ 83,619	$ 70,467
Restricted cash	11,655	10,972
Total cash, cash equivalents and restricted cash shown in the statement of cash flows	$ 95,274	$ 81,439

The following table summarizes the Company's unrealized gains and losses related to its short-term investments in marketable securities designated as available-for-sale (in thousands):

	As of September 30, 2020				As of December 31, 2019			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Loss	Fair Value	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Loss	Fair Value
Marketable securities:								
Money market funds	$ 27,667	$ —	$ —	$ 27,667	$ 7,638	$ —	$ —	$ 7,638
Reported as:								
Short-term investments				$ 27,667				$ 7,638

As of September 30, 2020 and December 31, 2019, maturities of marketable securities were less than one year. There were no realized gains and losses on the sale of marketable securities during the three and nine months ended September 30, 2020 and 2019. The Company did not recognize any impairment losses on its marketable securities during the three and nine months ended September 30, 2020 or 2019. As of September 30, 2020, the Company did not have any investments in marketable securities that were in an unrealized loss position for a period in excess of 12 months.

Note 5. Fair value disclosures

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The following table presents the Company's assets that are measured at fair value on a recurring basis (in thousands):

	As of September 30, 2020				As of December 31, 2019			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets								
Short-term investments:								
Money market funds	$ 27,667	$ —	$ —	$ 27,667	$ 7,638	$ —	$ —	$ 7,638
Other long-term assets:								
Mutual funds held in Rabbi Trust	$ 695	$ —	$ —	$ 695	$ 616	$ —	$ —	$ 616

The Company offers a Non-Qualified Deferred Compensation Plan ("NQDC Plan") to a select group of its highly compensated employees. The NQDC Plan provides participants the opportunity to defer payment of certain compensation as defined in the NQDC Plan. A Rabbi Trust has been established to fund the NQDC Plan obligation, which was fully funded at September 30, 2020. The assets held by the Rabbi Trust are substantially in the form of exchange traded mutual funds and are included in the Company's other long-term assets on its condensed consolidated balance sheets as of September 30, 2020 and December 31, 2019.

There were no liabilities that are measured at fair value on a recurring basis as of September 30, 2020.

Assets and Liabilities Measured at Fair Value on a Nonrecurring Basis

As of September 30, 2020 and December 31, 2019 the Company had no assets or liabilities required to be measured at fair value on a nonrecurring basis.

Assets and Liabilities Not Measured at Fair Value

The carrying values of accounts receivable, accounts payable and short-term borrowings approximate their fair values due to the short-term nature and liquidity of these financial instruments.

Note 6. Asset Sale

NeoRussia

In December 2018, the Company entered into an agreement with Joint Stock Company Rusnano, a related party, for Joint Stock Company Rusnano group to purchase the 100% interest in the operations of NeoPhotonics Corporation, LLC, the Company's manufacturing operations in Russia. In 2018, the Company recorded additional restructuring expense of $1.6 million related to these operations, bringing the total amount accrued for the Rusnano payment derivative to $2.0 million. As of December 31, 2018, the Company had recorded assets with a carrying value of $3.0 million as held for sale. The balance for liabilities held for sale as of December 31, 2018 was immaterial.

In April 2019, the Company completed the sale of 100% interest in the operations of NeoPhotonics Corporation, LLC, the Company's manufacturing operations in Russia to Joint Stock Company Rusnano, a related party. In connection with the sale, the Company received $2.0 million in cash, settled the $2.0 million payment derivative and recognized a gain on asset sale of $0.9 million within operating expenses during 2019.

APAT

In January 2017, the Company completed the sale of its Low Speed Transceiver Products' assets to APAT Optoelectronics Components Co., Ltd. ("APAT OE") pursuant to an asset purchase agreement dated December 14, 2016 for consideration of approximately $25.0 million (in RMB equivalent) plus approximately $1.4 million (in RMB equivalent) post-closing transaction service fees to be received under a transition services agreement with APAT OE in which the Company provided short-term manufacturing and other specific services pursuant to such agreement. The related supply chain purchase commitments and value-added tax obligations were assumed by APAT OE. The receivable and payable balances related to the transition service arrangement were $12.1 million and $11.8 million, respectively, as of September 30, 2020.

As of December 31, 2016, the balance in assets held for sale was $13.9 million, consisting of $13.1 million in inventories and $0.8 million in property, plant and equipment. As a result of post-closing adjustments, total consideration was reduced by approximately $3.4 million for inventory. In addition, an immaterial amount of property, plant and equipment was reclassified from assets held for sale. Upon closing, assets sold to APAT OE were approximately $12.8 million, including approximately $12.1 million in inventories and $0.7 million in property, plant and equipment. The adjusted consideration received of approximately $21.6 million was subject to further reduction of up to $10.0 million for any indemnification claims. As of September 30, 2020, the Company has a reserve of $6.8 million within accrued and other current liabilities for warranty claims. The indemnification warranties expired on June 30, 2017. The Company recognized a $2.2 million gain on the sale of these assets in 2017.

All of the Low Speed Transceiver Products were part of the Company's Network Products and Solutions product group and included the low speed optical network (PON) products for which the end-of-life plan was announced in mid-2016.

Note 7. Balance sheet components

Accounts receivable, net

Accounts receivable, net, consists of the following (in thousands):

	September 30, 2020	December 31, 2019
Accounts receivable	$ 60,391	$ 68,988
Trade notes receivable	—	156
Allowance for doubtful accounts	(243)	(254)
	$ 60,148	$ 68,890

Included in trade accounts receivable at September 30, 2020, was approximately $1.4 million due from APAT OE.

Inventories

Inventories consist of the following (in thousands):

	September 30, 2020	December 31, 2019
Raw materials	$ 25,627	$ 19,350
Work in process	10,219	12,262
Finished goods[(1)]	11,143	15,318
	$ 46,989	$ 46,930

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(1) Finished goods inventory at customer vendor managed inventory locations was $4.7 million and $1.6 million as of September 30, 2020 and December 31, 2019, respectively.

Prepaid expenses and other current assets

Prepaid expenses and other current assets consist of the following (in thousands):

	September 30, 2020	December 31, 2019
Transition services agreement receivable (refer to Note 6)	$ 12,116	$ 11,861
Prepaid taxes and taxes receivable	5,744	6,979
Receivables due from suppliers	6,538	4,147
Deposits and other prepaid expenses	2,710	2,512
Other receivable	399	352
	$ 27,507	$ 25,851

Notes to Condensed Consolidated Financial Statements (Continued)
(Unaudited)

Purchased intangible assets, net

Purchased intangible assets, net, consist of the following (in thousands):

	September 30, 2020			December 31, 2019		
	Gross Assets	Accumulated Amortization	Net Assets	Gross Assets	Accumulated Amortization	Net Assets
Technology and patents	$ 37,155	$ (36,361)	$ 794	$ 36,880	$ (35,555)	$ 1,325
Customer relationships	15,243	(15,243)	—	15,089	(15,089)	—
Leasehold interest	1,251	(427)	824	1,222	(396)	826
	$ 53,649	$ (52,031)	$ 1,618	$ 53,191	$ (51,040)	$ 2,151

Amortization expense relating to technology and patents and the leasehold interest intangible assets is included within cost of goods sold and customer relationships within operating expenses. The following table presents details of the amortization expense of the Company’s purchased intangible assets as reported in the condensed consolidated statements of operations (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Cost of goods sold	$ 184	$ 185	$ 552	$ 553
Operating expenses	—	—	—	119
Total	$ 184	$ 185	$ 552	$ 672

The estimated future amortization expense of purchased intangible assets as of September 30, 2020, was as follows (in thousands):

2020 (remaining three months)	$ 184
2021	645
2022	28
2023	28
2024	28
Thereafter	705
	$ 1,618

Notes to Condensed Consolidated Financial Statements (Continued)
(Unaudited)

Accrued and other current liabilities

Accrued and other current liabilities consist of the following (in thousands):

	September 30, 2020	December 31, 2019
Employee-related	$ 18,666	$ 17,877
Transition services agreement payables (refer to Note 6)	11,772	11,765
Asset sale related warranty claims (refer to Note 6)	6,825	6,664
Operating lease liabilities, current	2,121	2,086
Income and other taxes payable	1,124	2,036
Accrued warranty	1,413	712
Other accrued expenses	9,128	6,341
	$ 51,049	$ 47,481

Warranty accrual

The table below summarizes the movement in the warranty accrual, which is included in accrued and other current liabilities (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Beginning balance	$ 1,617	$ 751	$ 712	$ 672
Warranty accruals	369	198	1,605	674
Settlements	(573)	(200)	(904)	(597)
Ending balance	$ 1,413	$ 749	$ 1,413	$ 749

Other noncurrent liabilities

Other noncurrent liabilities consist of the following (in thousands):

	September 30, 2020	December 31, 2019
Pension and other employee-related	$ 3,813	$ 4,125
Asset retirement obligations	3,785	3,529
Deferred income tax liabilities	541	528
Government grant	729	1,380
Other	—	52
	$ 8,868	$ 9,614

Note 8. Restructuring and Other Related Charges

Restructuring charges

On August 17, 2020 BIS in the Department of Commerce increased restrictions on Huawei and its affiliates on the Entity List related to items produced domestically and abroad that use U.S. technology or software and imposed additional requirements for items subject to Commerce export control. The Company announced on October 5, 2020, that it will manage the business without relying on and will not plan on future revenue contributions from Huawei. As a result, the Company initiated certain restructuring actions to reduce operating expenses and manufacturing costs while maintaining the Company's focus on its core capabilities, including its lasers, coherent components and solutions for data center interconnect and high speed communications networks. Under the restructuring actions, the Company estimates it will incur severance and related charges of approximately $1.1 million and is expected to be completed by the third quarter of 2021.

Other related charges

In light of the restrictions imposed on Huawei by the BIS in the third quarter of 2020, the Company incurred $4.1 million in accelerated depreciation charges related to Huawei specific assets, consolidation of Indium Phosphide production and certain end-of-life equipment. In addition, the Company incurred $1.9 million in inventory purchase commitment liabilities and $2.5 million in Huawei specific excess and obsolete inventories, resulting in a total inventory write-down of $4.4 million.

The total restructuring and other charges for this action are estimated to be $10.9 million through 2021.

Restructuring and other related charges for the three and nine months ended September 30, 2020 were as follows (in thousands):

	Three Months Ended September 30, 2020	Charges Incurred to Date
Cash related restructuring charges:		
Severance and related costs	$ 847	$ 847
Other cash related charges:		
Inventory purchase commitments	1,913	1,913
Other noncash related charges:		
Accelerated depreciation	4,120	4,120
Excess and obsolete inventories	2,522	2,522
Total other noncash related charges	6,642	6,642
Total	$ 9,402	$ 9,402

The other cash and noncash related charges for the three months ended September 30, 2020 and incurred to date totaling $1.9 million and $6.6 million, respectively, have been charged to cost of goods sold in the Company's Condensed Consolidated Statement of Operations.

The restructuring charges are included in the following line items in the Company's Condensed Consolidated Statement of Operations as follows (in thousands):

	Three Months Ended September 30, 2020	Charges Incurred to Date
Severance related charges:		
Cost of goods sold	$ 706	$ 706
Restructuring charges	141	141
Total severance related charges	$ 847	$ 847

A summary of the current period activity in accrued restructuring costs is as follows (in thousands):

	Employee Severance	Other	Total
Restructuring obligations December 31, 2019	$ —	$ —	$ —
Charges	805	42	847
Cash payments	(479)	—	(479)
Restructuring obligations September 30, 2020	$ 326	$ 42	$ 368

Note 9. Debt

The table below summarizes the carrying amounts and weighted average interest rates of the Company's debt (in thousands, except percentages):

	September 30, 2020		December 31, 2019	
	Carrying Amount	Interest Rate	Carrying Amount	Interest Rate
Long-term debt, current and noncurrent:				
Borrowing under Wells Fargo Credit Facility	$ 21,919	2.02 %	$ 27,329	3.72 %
Mitsubishi Bank loans	7,995	1.05% -1.45%	9,255	1.04%-1.44%
Mitsubishi Bank and Yamanashi Chuo Bank loan	5,176	1.07 %	5,868	1.07 %
Total long-term debt	35,090		42,452	
Finance lease liability	211		275	
Unaccreted discount and issuance costs	(349)		(446)	
Total long-term debt, net of unaccreted discount and issuance costs	$ 34,952		$ 42,281	
Reported as:				
Current portion of long-term debt	$ 3,153		$ 3,044	
Long-term debt, net of current portion	31,799		39,237	
Total long-term debt, net of unaccreted discount and issuance costs	$ 34,952		$ 42,281	

Notes payable and short-term borrowing

The Company regularly issues notes payable to its suppliers in China. These notes are supported by non-interest bearing bank acceptance drafts issued under the Company's existing line of credit facilities and are due three to six months after issuance. As a condition of the notes payable arrangements, the Company is required to keep a compensating balance at the issuing banks that is a percentage of the total notes payable balance until the amounts are settled. As of September 30, 2020, the Company's subsidiary in China had two line of credit facilities with the following banking institutions:

- Under the first line of credit facility with Shanghai Pudong Development Bank, the Company can borrow up to RMB 120.0 million ($17.6 million) for short-term loans at varying interest rates, or up to approximately RMB 240.0 million ($35.3 million) for bank acceptance drafts (with up to 50% compensating balance requirement). This line of credit facility expires in November 2021.
- Under the second line of credit facility with Shanghai Pudong Development Bank, which expires in November 2021, the Company can borrow up to RMB 30.0 million ($4.4 million) for short-term loans at varying interest rates, or up to approximately RMB 60.0 million ($8.8 million) for bank acceptance drafts (with up to 50% compensating balance requirement).

Under these line of credit facilities, the non-interest bearing bank acceptance drafts issued in connection with the Company’s notes payable to its suppliers in China, had no outstanding balance at September 30, 2020 and December 31, 2019.

As of September 30, 2020 and December 31, 2019, compensating balances relating to these bank acceptance drafts and letters of credit issued to suppliers and the Company’s subsidiaries totaled $2.6 million and $2.5 million, respectively. Compensating balances are classified as restricted cash on the Company’s condensed consolidated balance sheets.

Credit facilities

In September 2017, the Company entered into a revolving line of credit agreement with Wells Fargo Bank, National Association ("Wells Fargo") as the administrative agent for a lender group (the "Wells Fargo Credit Facility" or "Credit Facility").

The Wells Fargo Credit Facility provides for borrowings equal to the lower of (a) a maximum revolver amount of $50.0 million, or (b) an amount equal to 80% - 85% of eligible accounts receivable plus 100% of qualified cash balances up to $15.0 million, less certain discretionary adjustments ("Borrowing Base"). The maximum revolver amount may be increased by up to $25.0 million, subject to certain conditions.

The Credit Facility matures on June 30, 2022 and borrowings bear interest at an interest rate option of either (a) the LIBOR rate, plus an applicable margin ranging from 1.50% to 1.75% per annum, or (b) the prime lending rate, plus an applicable margin ranging from 0.50% to 0.75% per annum. The Company is also required to pay a commitment fee equal to 0.25% of the unused portion of the Credit Facility.

The Credit Facility agreement ("Agreement") requires prepayment of the borrowings to the extent the outstanding balance is greater than the lesser of (a) the most recently calculated Borrowing Base, or (b) the maximum revolver amount. The Company is required to maintain a combination of certain defined cash balances and unused borrowing capacity under the Credit Facility of at least $20.0 million, of which at least $5.0 million shall include unused borrowing capacity. The Agreement also restricts the Company's ability to dispose of assets, permit change in control, merge or consolidate, make acquisitions, incur indebtedness, grant liens, make investments and make certain restricted payments. Borrowings under the Credit Facility are collateralized by substantially all of the Company's assets.

On June 14, 2019, the Company entered into a First Amendment to the Credit Facility (the "Amended Credit Facility"). The Amendment removes Huawei from the list of “Eligible Accounts” as a basis for the Company’s borrowing while Huawei is on the U.S. Bureau of Industry and Security (“BIS”) “Entity List”. During the period of time while Huawei remains on the Entity List, the concentration limits of certain other customers are increased to partially offset the removal of Huawei. Additionally, until Huawei is no longer on the Entity List, the Company is required to maintain a temporary combination of certain defined unrestricted cash and unused borrowing capacity under the Credit Facility of at least $30.0 million in the U.S. and $40.0 million world-wide, of which at least $5.0 million shall include unused borrowing capacity. In May 2020, Fiberhome Technologies Group and certain affiliates ("Fiberhome") was added to the BIS entity list and is also excluded from the Borrowing Base.

The Company was in compliance with the covenants of this Amended Credit Facility as of September 30, 2020 and December 31, 2019. As of September 30, 2020, the outstanding balance under the Credit Facility was $21.9 million and the weighted average rate under the LIBOR option was 2.02%. The remaining borrowing capacity as of September 30, 2020 was $6.6 million, of which $5.0 million is required to be maintained as unused borrowing capacity. The Company repaid $1.0 million in March 2020, $4.0 million during the second quarter of 2020 and $1.0 million during the third quarter of 2020. Furthermore, the Company repaid $5.0 million in January 2019, which was borrowed in December 2018.

During the three months ended September 30, 2020, $0.1 million of accrued interest was included as a component of the principal amount of Wells Fargo Credit Facility.

Mitsubishi Bank loans

On February 25, 2015, the Company entered into certain loan agreements and related agreements with MUFG Bank, Ltd. (the "Mitsubishi Bank") that provided for (i) a term loan in the aggregate principal amount of 500.0 million JPY ($4.4 million) (the "Term Loan A") and (ii) a term loan in the aggregate principal amount of one billion JPY (approximately $9.5 million) (the "Term Loan B" and together with the Term Loan A, the "2015 Mitsubishi Bank Loans"). The 2015 Mitsubishi Bank Loans are secured by a mortgage on certain real property and buildings owned by the Company's Japanese subsidiary. Interest on the 2015 Mitsubishi Bank Loans accrues and is paid monthly based upon the annual rate of the monthly Tokyo Interbank Offer Rate ("TIBOR") plus 1.40%. The Term Loan A required interest only payments until the maturity date of February 23, 2018, with a lump sum payment of the aggregate principal amount on the maturity date. The Term Loan B requires equal monthly payments of principal equal to 8.3 million JPY (approximately $0.1 million) until the maturity date of February 25, 2025, with a lump sum payment of the balance of 8.4 million JPY (approximately $0.1 million) on the maturity date. Interest on the Term Loan B is accrued based upon monthly TIBOR plus 1.40% and is secured by real estate collateral. In conjunction with the execution of the Bank Loans, the Company paid a loan structuring fee, including consumption tax, of 40.5 million JPY (approximately $0.4 million). The Term Loan A of 500.0 million JPY (approximately $4.4 million) was repaid to the Mitsubishi Bank in January 2018.

The 2015 Mitsubishi Bank Loans contain customary representations and warranties and customary affirmative and negative covenants applicable to the Company's Japanese subsidiary, including, among other things, restrictions on cessation in business, management, mergers or acquisitions. The 2015 Mitsubishi Bank Loans contain financial covenants relating to minimum net assets, maximum ordinary loss and a coverage ratio covenant. The Company was in compliance with the related covenants as of September 30, 2020 and December 31, 2019. Outstanding principal balance for the Mitsubishi Term Loans was 441.7 million JPY (approximately $4.2 million) as of September 30, 2020.

In March 2017, the Company entered into a loan agreement and related agreements with the Mitsubishi Bank for a term loan of 690.0 million JPY (approximately $6.5 million) (the "2017 Mitsubishi Bank Loan") to acquire manufacturing equipment for its Japanese subsidiary. This loan is secured by the manufacturing equipment owned by the Company's subsidiary in Japan. Interest on the 2017 Mitsubishi Bank Loan is based on the annual rate of the monthly TIBOR rate plus 1.00%. The 2017 Mitsubishi Bank Loan matures on March 29, 2024 and requires monthly interest and principal payments over 72 months commencing in April 2018. The loan contains customary covenants relating to minimum net assets, maximum ordinary loss and a coverage ratio covenant. The Company was in compliance with these covenants as of September 30, 2020 and December 31, 2019. The loan was available from March 31, 2017 to March 30, 2018 and 690.0 million JPY (approximately $6.5 million) under this loan was fully drawn in March 2017. Outstanding principal balance for the 2017 Mitsubishi Bank Loan was approximately 402.5 million JPY (approximately $3.8 million) as of September 30, 2020.

Mitsubishi Bank and Yamanashi Chuo Bank loan

In January 2018, the Company entered into a term loan agreement with Mitsubishi Bank and The Yamanashi Chuo Bank, Ltd. for a term loan in the aggregate principal amount of 850.0 million JPY (approximately $8.1 million) (the "Term Loan C"). The purpose of the Term Loan C is to obtain machinery for the core parts of the manufacturing line and payments for related expenses by the Company's subsidiary in Japan. The Term Loan C requires no additional security. The Term Loan C was available from January 29, 2018 to January 29, 2025. The full amount of the Term Loan C was drawn in January 2018. Interest on the Term Loan C is based upon the annual rate of the three months TIBOR rate plus 1.00%. The Term Loan C requires quarterly interest payments, along with the principal payments, over 82 months commencing in April 2018. The Term Loan C loan agreement contains customary representations and warranties and customary affirmative and negative covenants applicable to the Japanese Subsidiary, including, among other things, restrictions on cessation in business, management, mergers or acquisitions. The Term Loan C loan agreement contains financial covenants relating to minimum net assets and maximum ordinary loss. The Company was in compliance with these covenants as of September 30, 2020 and December 31, 2019. Outstanding principal balance for the Mitsubishi Bank and Yamanashi Chuo Bank Loan was approximately 546.4 million JPY (approximately $5.2 million) as of September 30, 2020.

As of September 30, 2020, maturities of total long-term debt were as follows (in thousands):

2020 (remaining three months)	$	797
2021		3,186
2022		25,105
2023		3,186
2024		2,370
Thereafter		446
	$	35,090

Note 10. Leases

The Company has operating leases for offices, research and development facilities and manufacturing facilities. Leases have remaining terms of one year to seven years, some of which include options to extend the leases and some of which may include options to terminate the leases within one year. As of September 30, 2020 and December 31, 2019, an asset recorded in property, plant and equipment under a finance lease was immaterial.

The components of lease expense were as follows (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Operating lease cost	$ 757	$ 760	$ 2,273	$ 2,270
Variable and short-term lease cost	574	401	1,472	1,062
Total lease cost	$ 1,331	$ 1,161	$ 3,745	$ 3,332

Other information related to leases was as follows (in thousands, except lease term and discount rate):

	Nine Months Ended September 30,	
	2020	2019
Supplemental cash flow information		
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 2,359	$ 2,635
Right-of-use assets obtained in exchange for lease obligations:		
Operating leases	$ 98	$ 136
Weighted average remaining lease term		
Operating leases	6.7 years	7.5 years
Weighted average discount rate		
Operating leases	6.5 %	6.4 %

Future minimum lease payments under non-cancelable leases as of September 30, 2020 were as follows (in thousands):

	Operating Leases
2020 (remaining three months)	$ 804
2021	3,133
2022	3,127
2023	3,068
2024	2,944
Thereafter	8,259
Total future minimum lease payments	21,335
Less imputed interest	(4,175)
Total	$ 17,160

As of September 30, 2020 and December 31, 2019, the future minimum lease payments are captured in the Company's Consolidated Balance Sheets as follows:

Operating Leases:	September 30, 2020	December 31, 2019
Accrued and other current liabilities	$ 2,121	$ 2,086
Operating lease liabilities, noncurrent	15,039	16,543
Total	$ 17,160	$ 18,629

Note 11. Japan pension plan

The pension liability related to the Company's Retirement Allowance Plan ("RAP") in Japan as of September 30, 2020 was $3.7 million, of which $0.6 million was recorded in accrued and other current liabilities and the remainder in other noncurrent liabilities on the Company's condensed consolidated balance sheet. The pension liability related to the Company's RAP in Japan as of December 31, 2019 was $4.1 million, of which $0.6 million, was recorded in accrued and other current liabilities and the remainder in other noncurrent liabilities on the Company's condensed consolidated balance sheet.

Net periodic pension cost associated with this plan was immaterial in the three and nine months ended September 30, 2020 and 2019.

Note 12. Commitments and contingencies

Litigation

From time to time, the Company is subject to various claims and legal proceedings, either asserted or unasserted, that arise in the ordinary course of business. The Company accrues for legal contingencies if the Company can estimate the potential liability and if the Company believes it is probable that the case will be ruled against it. If a legal claim for which the Company did not accrue is resolved against it, the Company would record the expense in the period in which the ruling was made. The Company believes that the likelihood of an ultimate amount of liability, if any, for any pending claims of any type (alone or combined) will materially affect the Company's financial position, results of operations or cash flows is remote. The ultimate outcome of any litigation is uncertain, however, and unfavorable outcomes could have a material negative impact on the Company's financial condition and operating results. Regardless of outcome, litigation can have an adverse impact on the Company because of defense costs, negative publicity, diversion of management resources and other factors.

Notes to Condensed Consolidated Financial Statements (Continued)
(Unaudited)

In January 2010, Finisar Corporation (acquired by II-VI, Inc. in September 2019) ("Finisar"), filed a complaint in the U.S. District Court for the Northern District of California ("Court"), against Source Photonics, Inc., MRV Communications, Inc., Oplink Communications, Inc. and the Company, or collectively, the co-defendants. In the complaint, Finisar alleged infringement of certain of its U.S. patents. In 2011 the Company and Finisar agreed to suspend their respective claims and in 2012 the Company and Finisar further agreed to toll their respective claims. While there has been no action on this matter since 2012, the Company is currently unable to predict the outcome of this dispute and therefore cannot determine the likelihood of loss nor estimate a range of possible loss.

APAT Litigation and Settlement

Since April 2018, APAT OE and NeoPhotonics (China) Co., Ltd. and NeoPhotonics Dongguan Co. Ltd. (collectively "NeoChina", which are both wholly-owned subsidiaries of the Company) and NeoPhotonics Corporation have been involved in a series of litigations and arbitrations as described in the APAT Litigation and Arbitration Background below.

On October 27, 2020, the parties entered into a settlement agreement to settle all claims and release all property preservation orders. In exchange for a full release of all claims by all parties, terms of the settlement agreement include the following: i) APAT OE to pay NeoChina the arbitration awards in the amount of RMB 52,014,519 (approximately $7.6 million) plus interest of RMB 6,122,150 (approximately $0.9 million) for a total amount of RMB 58,136,669 (approximately $8.5 million) and ii) NeoPhotonics Corporation to pay APAT Hong Kong, a wholly subsidiary of APAT OE (“APAT HK”) $10,031,515 USD plus $500,000 USD in interest for a total payment $10,531,515 for amounts that were paid by customers to NeoPhotonics Corporation for sales of products made by APAT OE after the close of the asset purchase agreement. Payments by the Company will not be made until all prescribed conditions as described in the settlement agreement have been satisfied by APAT OE.

This settlement agreement outlines an approximately $2.0 million net cash payment by the Company to APAT OE, which exceeds the net liability recorded (see Note 7 for receivable and payable amounts recorded by the Company related to the asset sale transaction and see also Note 17), and if not breached by the parties, would result in a net gain of approximately $2.9 million during the fourth quarter of 2020 to be recorded by the Company.

APAT Litigation and Arbitration Background

In April 2018, APAT OE filed a lawsuit in the Qianhai Court in Shenzhen, China against NeoChina and NeoPhotonics Corporation with a claim of approximately $20.0 million. The lawsuit was related to the sale of the low speed transceiver business to APAT OE from NeoChina. APAT OE claimed that the business has been losing money and that APAT OE had not been given all of the information about the business prior to signing the Asset Purchase Agreement for low speed transceiver business (“APA”). In November 2018, the Shenzhen Intermediate Court ruled that the Arbitration Court, as required by the APA, was the proper forum for resolution of the dispute between NeoChina and APAT OE.

In December 2019, the Qianhai Court in Shenzhen, China dismissed the case against NeoPhotonics Corporation based upon NeoPhotonics Corporation’s argument that there was no agreement between APAT OE and NeoPhotonics Corporation. Per the terms of the settlement agreement, APAT OE has filed to dismiss an appeal of this decision.

In December 2018, APAT OE filed two additional lawsuits against NeoChina, NeoPhotonics Corporation Limited Hong Kong (or NeoHK), Novel Centennial Limited BVI ("NeoBVI") and NeoPhotonics Corporation (collectively the "defendants") in the Intermediate Court in addition to a pre-trial preservation order. On the same day the Court issued the order to preserve approximately $29.0 million of NeoChina assets, which is the approximate amount of the revised claims by APAT OE against all defendants in the first of the two lawsuits filed in December 2018. In January 2019, there was an additional pre-trial preservation order to preserve approximately $3.8 million of NeoChina assets. In the first lawsuit, the legal claims are the same as the ones APAT OE filed in April 2018 in Qianhai Court in Shenzhen, China (as described above). The difference is that instead of distributing claims in separate cases, APAT OE had combined its claims to one single case and added the additional defendants of NeoHK and NeoBVI and increased the claimed damages to approximately $29.0 million. In the second lawsuit, the claims were new and related to alleged new issues related to a contract manufacturer located in the Philippines and claimed damages in the amount of RMB 50.9 million (approximately $7.6 million). APAT OE claimed that the defendants interfered with APAT OE’s ability to sign an engagement agreement with the contract manufacturer. On April 30, 2020, the Shenzhen Intermediate Court ruled in both lawsuits that the Court has no jurisdiction over disputes between Neo China and APAT OE and that any disputes between those parties should be transferred to the Arbitration Court.

In June 2017, APAT OE filed an arbitration claim in the Arbitration Court against NeoChina, claiming that approximately $1.5 million of the inventory that was sold to APAT OE by NeoChina in the APA was aged inventory and of no value. In October 2017, the Arbitration Court awarded NeoChina approximately RMB 700,000 (approximately $110,000) in compensatory damages and attorney fees as well as having the approximately $1.5 million claim against NeoChina rejected in its entirety. After an unsuccessful appeal by APAT OE to the Shenzhen Intermediate Court, the court granted NeoChina an enforcement order of the arbitration award.

In July 2018, NeoChina filed an arbitration claim against APAT OE in the Arbitration Court claiming approximately damages related to liability under the APA. NeoChina also was granted a property preservation of APAT OE’s bank accounts. On March 31, 2020, the Arbitration Court ruled in favor of NeoChina and awarded NeoChina 54,607,000 RMB (approximately $7.7 million). On June 12, 2020, the Shenzhen Intermediate Court rejected APAT’s application for review of the arbitration award. Additionally, on April 27, 2020, NeoChina filed an enforcement action in the Intermediate People's Court of Shenzhen Municipality to enforce this arbitration award. Per the terms of the settlement agreement, NeoChina will file for a dismissal of this enforcement action, however, per the terms of the settlement agreement, NeoChina has the right to reinstate such action if APAT OE breaches the settlement agreement.

In November 2018, APAT OE filed an additional arbitration claim against NeoChina claiming approximately $7.8 million for liability under the APA. In March 2019, NeoChina filed a response and counterclaim against APAT OE including a claim for attorney fees in the amount of RMB 810,000 (approximately $121,000). On March 31, 2020, the Arbitration Court ruled in NeoChina's' favor and awarded 846,000 RMB (approximately $119,000) for attorney's fees and arbitration fees. After the Shenzhen Intermedia Court rejected APAT's application for review of the arbitration award, NeoChina filed an enforcement action in the court to enforce this arbitration award. Per the terms of the settlement agreement, NeoChina will file for a dismissal of this enforcement action, however, per the terms of the settlement agreement, NeoChina has the right to reinstate such action if APAT OE breaches the settlement agreement.

Indemnifications

In the normal course of business, the Company enters into agreements that contain a variety of representations and warranties and provides for general indemnification. The Company’s exposure under these agreements is unknown because it involves claims that may be made against the Company in the future, but have not yet been made. To date, the Company has not paid any claims or been required to defend any action related to its indemnification obligations. However, the Company may record charges in the future as a result of these indemnification obligations.

Note 13. Stockholders’ equity

Common Stock

As of September 30, 2020, the Company had reserved 8,412,559 common stock for issuance under its equity incentive plans and 1,513,012 common stock shares for issuance under its employee stock purchase plan.

Accumulated Other Comprehensive Loss

The components of accumulated other comprehensive loss, net of related taxes, were as follows (in thousands):

	Foreign Currency Translation Adjustments	Defined Benefit Pension Plan Adjustment	Total Accumulated Other Comprehensive Loss
Balance as of December 31, 2019	$ 7,641	$ 230	$ 7,871
Other comprehensive loss, net of taxes of zero	(3,808)	—	(3,808)
Balances at September 30, 2020	$ 3,833	$ 230	$ 4,063

No material amounts were reclassified out of accumulated other comprehensive income during the three and nine months ended September 30, 2020 and 2019 for realized gains or losses on available-for-sale securities.

Accumulated Deficit

Approximately $9.2 million of the Company’s retained earnings within its total accumulated deficit as of December 31, 2019 was subject to restriction due to the fact that the Company’s subsidiaries in China are required to set aside at least 10% of their respective accumulated profits each year end to fund statutory common reserves.

Note 14. Restricted net assets

The Company’s consolidated subsidiaries operating in China and Japan are restricted from transferring funds or assets to its parent company in the form of cash dividends, loans or advances. As of September 30, 2020 and December 31, 2019, the Company's consolidated subsidiaries had $22.0 million and $21.1 million, respectively, of restricted net assets. This compares to the Company's consolidated net assets of $181.5 million and $160.2 million as of September 30, 2020 and December 31, 2019, respectively, which consisted of (in thousands):

	September 30, 2020	December 31, 2019
Cash restricted in China as a result of ongoing litigation and unfulfilled government grants	$ 11,619	$ 10,936
China earnings restricted to fund statutory common reserves in China	9,464	9,240
Loan agreements in Japan requiring local subsidiaries to maintain minimum net asset levels	947	920
Total restricted net assets in the Company's consolidated subsidiaries	$ 22,030	$ 21,096

Note 15. Stock-based compensation

The following table summarizes the stock-based compensation expense recognized in the three and nine months ended September 30, 2020 and 2019 (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Cost of goods sold	$ 607	$ 441	$ 1,765	$ 1,651
Research and development	748	715	2,505	2,383
Sales and marketing	565	575	1,833	1,852
General and administrative	853	1,220	2,975	3,408
	$ 2,773	$ 2,951	$ 9,078	$ 9,294

As of September 30, 2020 and December 31, 2019, stock-based compensation capitalized in inventories totaled $0.2 million and $0.3 million, respectively.

Determining Fair Value

The Company estimated the fair value of certain stock-based awards using a Black-Scholes-Merton valuation model.

Notes to Condensed Consolidated Financial Statements (Continued)
(Unaudited)

Stock Options and Restricted Stock Units (RSUs)

The following table summarizes the Company's stock option and RSU activity, excluding market and performance-based RSUs, during the nine months ended September 30, 2020:

	Stock Options		Restricted Stock Units	
	Number of Shares	Weighted Average Exercise Price	Number of Units	Weighted Average Grant Date Fair Value
Balance as of December 31, 2019	2,598,745	$ 5.93	3,170,981	$ 5.80
Granted	53,760	8.56	1,885,378	7.67
Exercised/Converted	(322,436)	4.30	(1,287,467)	6.13
Cancelled/Forfeited	(48,259)	10.86	(146,810)	6.49
Balances at September 30, 2020	2,281,810	6.12	3,622,082	6.63

At September 30, 2020, the Company had $0.4 million of unrecognized stock-based compensation expense for stock options, net of estimated forfeitures. At September 30, 2020, the Company had $17.6 million of unrecognized stock-based compensation expense for RSUs, excluding market and performance-based RSUs, net of estimated forfeitures.

Market-based Restricted Stock Units

As of September 30, 2020, the Company has granted 611,500 shares of market-based RSUs that remain outstanding to certain employees. These RSUs will vest if the 30-day weighted average closing price of the Company's common stock is equal to or greater than certain price targets per share and the recipients remain in continuous service with the Company through such service period. No market-based RSUs have vested and 93,500 market-based RSUs have been cancelled through September 30, 2020. The weighted average grant-date fair value per share of market-based RSUs granted during 2019 and 2018 was approximately $4.86 and $5.82 per share, respectively. As of September 30, 2020, the Company had $0.7 million of unrecognized stock-based compensation expense for these RSUs, net of estimated forfeitures, which will be recognized over the remaining weighted-average period of approximately 11 months. The fair value of market-based RSUs was measured on the grant date using Monte Carlo simulation model with the following assumptions:

	Assumptions Used
Weighted-average volatility	66%
Risk-free interest rate	2.79%
Expected dividends	—%

Performance-based Restricted Stock Units

In April 2020, the Company granted 90,400 shares of performance-based RSUs to certain employees. These RSUs will vest upon certification by the Board of Directors or the Compensation Committee that the Company has achieved at least $425 million in revenue over four consecutive fiscal quarters and the recipients remain in continuous service with the Company through such service period. No performance-based RSUs were vested or cancelled during 2020.

The weighted average grant-date fair value per share of performance-based RSUs granted during 2020 was $7.73 per share.

Stock Appreciation Units (SAUs)

SAUs are liability classified share-based awards. Outstanding SAUs are re-measured each reporting period at fair value until settlement. The Company did not grant any SAUs during the three and nine months ended September 30, 2020 or 2019. As of September 30, 2020 and December 31, 2019, there were 153,312 and 163,471 SAUs outstanding, respectively, and related SAU liabilities were $0.4 million and $0.8 million, respectively.

Employee Stock Purchase Plan (ESPP)

The Company issued 204,199 shares under the ESPP during the nine months ended September 30, 2020. As of September 30, 2020, there was $0.1 million of unrecognized stock-based compensation expense for employee stock purchase rights that will be recognized over the remaining offering period through November 2020. In June 2019, the Company adopted an Amendment and Restatement of the ESPP to increase the number of shares authorized for issuance under the ESPP by an additional 1,500,000 shares and to eliminate the annual "'evergreen" automatic increase provisions.

2020 Equity Incentive Plan

On June 2, 2020, at the 2020 Annual Meeting of Stockholders of NeoPhotonics Corporation, the Company's stockholders approved NeoPhotonics Corporation 2020 Equity Incentive Plan (the "2020 Plan"). The Plan became effective immediately upon stockholder approval at the Annual Meeting. The aggregate number of shares of common stock reserved for issuance under the 2020 Plan will not exceed the sum of (i) 1,921,414 shares and (ii) certain shares subject to outstanding awards granted under the Company's 2010 Equity Incentive Plan or 2011 Inducement Award Plan that may become available for issuance under the 2020 Plan, as such shares become available from time to time.

Note 16. Income taxes

The income tax (provision) benefit from income taxes in the periods presented is based upon the income (loss) before income taxes (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Income tax (provision) benefit	$ 1,206	$ (1,561)	$ (1,199)	$ (1,526)

The Company's income tax benefit (provision) in the three and nine months ended September 30, 2020 and 2019 was primarily related to updating the projected forecast of the tax provision from U.S. and non-U.S. operations.

The Company projected a pre-tax loss for its U.S. operations and a higher effective tax rate based on non-U.S. operations for the period ended September 30, 2020. The tax provision for the nine months ended September 30, 2020 decreased compared with the same period end in 2019 due to decreased earnings from the Company's non-U.S. operations.

The Company conducts its business globally and its operating income is subject to varying rates of tax in the U.S., China and Japan. Consequently, the Company's effective tax rate is dependent upon the geographic distribution of its earnings or losses and the tax laws and regulations in each geographical region.

Due to historical losses in the U.S., the Company has a full valuation allowance on its U.S. federal and state deferred tax assets. Management continues to evaluate the realizability of deferred tax assets and the related valuation allowance. If management's assessment of the deferred tax assets or the corresponding valuation allowance were to change, the Company would record the related adjustment to income during the period in which management makes the determination.

As of September 30, 2020, there were no material changes to either the nature or the amounts of the uncertain tax positions previously determined for the year ended December 31, 2019.

On March 27, 2020, the Coronavirus Aid, Relief and Economic Security, or CARES, Act was enacted and signed into law. The CARES Act did not have a material impact on the income tax provision for the nine months ended September 30, 2020.

Note 17. Subsequent events

APAT Litigation

On October 27, 2020, the parties entered into a settlement agreement to settle all claims and release all property preservation orders. The settlement, if not breached by the parties, would result in a gain of $2.9 million to be recognized during the fourth quarter of 2020 by the Company. See also Note 12.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the unaudited condensed consolidated financial statements and the related notes thereto included elsewhere in this Quarterly Report on Form 10-Q for the period ended September 30, 2020 and the audited consolidated financial statements and notes thereto and management's discussion and analysis of financial condition and results of operations for the year ended December 31, 2019 included in our Annual Report on Form 10-K/A. References to "NeoPhotonics," "we," "our," and "us" are to NeoPhotonics Corporation unless otherwise specified or the context otherwise requires.

This Quarterly Report on Form 10-Q for the period ended September 30, 2020 contains "forward-looking statements" that involve risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such forward-looking statements. The statements contained in this Quarterly Report on Form 10-Q for the period ended September 30, 2020 that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Terminology such as "believe," "may," "might," "objective," "estimate," "continue," "anticipate," "intend," "should," "plan," "expect," "predict," "potential," or the negative of these terms or other similar expressions is intended to identify forward-looking statements.

We have based these forward-looking statements largely on our current expectations and projections about future events and industry and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. Such forward-looking statements are subject to risks, uncertainties and other important factors that could cause actual results and the timing of events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those identified in "Part II —Item 1A. Risk Factors" below, and those discussed in the sections titled "Special Note Regarding Forward-Looking Statements" and "Risk Factors" included in our Annual Report on Form 10-K/A for the year ended December 31, 2019, as filed with the SEC on March 3, 2020. Furthermore, such forward-looking statements speak only as of the date of this report. Except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances after the date of such statements.

Overview

We develop, manufacture and sell lasers, transceiver modules and other high speed optoelectronic products that transmit, receive and switch high speed digital optical signals for Cloud and hyper-scale data center internet content provider and telecom networks. Our solutions help network operators manage the explosive data traffic growth in Cloud and hyper-scale data centers.

We specialize in products that operate at the highest speed over distance, for 100 Gigabits per Second ("G"), 200G, 400G and beyond data rates, such as at 600G and 800G. Our products have the speed, size, low power consumption and interoperability required to directly transmit data using industry standard Internet Protocol coding, or IP, over DWDM wavelengths, greatly simplifying data networks.

We are the world's primary supplier of tunable lasers that emit the ultra-pure light that is required for the highest speed over distance coherent fiber optic communications links.

We integrate our lasers and our high performance coherent optical components into transmit/receive modules, or transceivers. Our high speed transceiver modules, which can operate at data rates including 400G, drive down network costs, extend reach and directly interconnect with switches and routers.

We believe we are well positioned to deliver these laser, component and transceiver module products based on our leadership in the ultra-pure lasers which power them and our comprehensive capabilities in designing and producing the highest performance Silicon Photonics and Indium Phosphide devices based on our Advanced Hybrid Photonic Integration. Moreover, we believe that our high performance materials integration platform is key our continued innovation at the highest speeds required for Cloud and hyper-scale networks.

We also believe that because of our laser and component technologies, we have been first to deliver commercial volumes for each of the highest speed advances in components for chassis-based systems since the advent of coherent optics for transmission ten years ago in 2010, as maximum speeds have advanced for each wavelength, or color, from 100G (Gigabits per second) to 400G, 600G and 800G. With adoption of coherent transmission using pluggable high speed optical modules in Cloud and hyper-scale data centers, we believe our total addressable market is rapidly expanding.

Our high speed optical communications technologies encode information to optical signals from electronic signals for transmission and decode it for receiving. We achieve these ultra-high speeds with coherent technology that encodes information using the phase, amplitude and polarization of an optical wavelength, packing in far more information than simple on/off encoding. We believe we are a global leader in coherent transmission technology, based on our achieved speeds, leadership in ultra-pure color lasers and optical integration for miniaturization and low power consumption.

Coherent transmission is becoming the technology of choice for high speed data transmission in Cloud infrastructure and data center interconnection, in addition to telecom networks, where the highest speeds over distance were first developed. Moreover, we are the most significant producer of the pure light lasers that deliver data at the highest speeds, as we have delivered more than 1.5 million lasers used by the more than 2 million coherent ports deployed by the industry over the past 10 years (each port may use either one or two lasers).

We have grown our business by delivering the highest speed over distance solutions for the Long Haul and Metro segments of the Telecom market. In recent years the Data Center Interconnect (DCI) market has become an increasing part of our revenue as DCI market adopts high speed coherent optical technologies.

Until recently our largest customers, Huawei Technologies and Ciena, have been suppliers of network equipment primarily focused on the Telecom market. Other leading customers have also been telecom equipment suppliers, such as Cisco, Nokia and ZTE. Note that due to Department of Commerce BIS restrictions on Huawei, in the Company's outlook for the fourth quarter of 2020, there is no revenue from Huawei.

Our High Speed Products for data rates of 100G, 200G and 400G were 92% of our revenues for the three months ended September 30, 2020 and 2019. Our sales concentration in High Speed Products has increased each year for more than 10 years.

Networks operating at 400G and beyond data rates have adopted coherent transmission technology because of its ability to increase data rates and lower cost-per-bit. These high speed networks are among the highest growth segments of the optical communications market, and support the rapid expansion of telecom backbone, hyper-scale data center interconnect content provider networks, accommodating increased wireline and mobile traffic.

We expect growth in the 400G and beyond segment of our business to be driven primarily by increased adoption of our High Speed Products in the much larger Cloud infrastructure market, the Metro market sector and in the high speed data center interconnect ("DCI") market segments. Furthermore, the advent of standardized coherent pluggable transceiver modules opens up additional use cases for coherent data links in 5G wireless back and mid-haul, tributaries for edge computing, new metro architectures and satellite communications.

Specific technologies have been developed for communications inside the data center and between data centers themselves as well as between data centers and consumers. We believe our solutions are often unique in their ability to provide high integrity signals across longer distances. However, high speed coherent transmission is becoming more competitive at shorter reaches, which include applications where interconnect volumes are much larger, and where we historically have not sold our products directly. Thereby we believe shorter reaches offer us further significant growth opportunities.

We believe the changes at 400G and above data rates portend a coming significant change in high speed network architectures to more efficiently implement the 400G and above technologies that we provide. This forecasted sea change is enabled by coherent techniques and Photonic Integrated Circuits, which makes possible long distance transmission by pluggable transceiver modules that connect directly into switches and routers inside data centers and that have thus far been used only for short reach connections within data centers. Such disaggregated Open Line Systems can manage optical signals between data centers with all needed channel management, amplification, traffic planning and monitoring functions.

Together coherent pluggable transceivers and Open Line fiber systems make IP over DWDM possible, that is for Internet Protocol data to be transmitted over long distances on an optical channel without translation into an equipment manufacturer's proprietary format. Connections between data centers then become as simple as connections within data centers. This is a breakthrough benefit for the network operator.

We believe that over the next few years, this connection architecture will become a mainstay of new installations, moving a significant portion of the capital expenditures from network equipment supplied DWDM proprietary boxes to disaggregated direct 400ZR interconnections. This approach of IP over DWDM moves Internet Protocol traffic from switches and routers directly over an Open Line system DWDM channel without passing through a proprietary network equipment transmission box. We supply both the 400G pluggable coherent transceivers and optical components for DWDM Line Systems, including Open Line Systems, that provide the filtering and control of the optical signals on the common fiber equipment.

The Covid-19 pandemic is impacting our business, the business of our customers and suppliers and how we execute our business. However, despite the lasting impact, our global operations including our China-based supply chain partners have executed well and have largely recovered.

Our priorities to address the impacts of the global pandemic on our operations are as follows:

- The health and well-being of our employees and supply chain partners is our top priority.
- We have implemented strict measures to ensure and maintain safety, including working remotely where possible, social distancing and enhanced protocols in each of our global facilities.
- We closely monitor evolving conditions and adhere to local and federal guidelines in each location in which we operate.

Business Continuity

- Our operations and products support essential communications networks globally.
- We have implemented and continue to adjust comprehensive business continuity plans in response to the global pandemic to ensure that we are able to deliver for our customers.
- We are working closely with our supply chain partners globally to ensure we have enough inventory and to support the health and safety of their employees.
- We have seen strong demand for products that facilitate increasing network bandwidth; we are working to ensure continuity between us, our supply partners and forward to our customers and their contract manufacturing partners around the world.

Financial Structure

- We believe our balance sheet and liquidity position provide the flexibility needed to support our operations during this pandemic.
- We have taken and will continue to take precautionary steps, as required, to maintain our financial position.

Our Solutions

Three critical optical components are required to make a high speed coherent transceiver: (1) a laser with a very narrow linewidth for very pure light; (2) a coherent modulator capable of changing both the intensity and phase of the optical signal to code data onto it; and (3) a coherent receiver capable of detecting both the intensity and phase of the received optical signal to “understand” its content, plus an electronic digital signal processor IC (DSP).

We have been a leading volume supplier of these optical components since coherent systems were first deployed in volume for telecommunications networks a decade ago in 2010. We are now the leading supplier of narrow linewidth tunable lasers and coherent receivers to the coherent market, and we have introduced new high speed coherent modulators for 400G, 600G and above applications.

The capabilities of coherent optics continue to grow with increasing photonic integration for higher performance and smaller size. These are core capabilities of NeoPhotonics, and therefore open further opportunities for us in adjacent markets. Outside of communications, coherent technology improves sensitivity and performance for a variety of applications including inter-satellite communication links including for low earth orbit (LEO) satellites, plus industrial applications, 3D sensing for autonomous vehicle navigation, and medical imaging.

We have invested and expect to continue to invest significant time and capital into our research and development operations. Our research and development activities continue to push the performance leadership boundaries in high speed digital optics, silicon photonics and hybrid photonic integration, optoelectronics control and in signal processing.

We have research and development and wafer fabrication facilities in San Jose and Fremont, California and in Tokyo, Japan that coordinate with our research and development and manufacturing facilities in Dongguan, Shenzhen and Wuhan, China and Ottawa, Canada. We use proprietary design tools and design-for-manufacturing techniques to align our design process with our precision nanoscale, vertically integrated manufacturing and testing. We believe we are one of the highest volume manufacturers of photonic integrated circuits ("PIC") in the world and that we can further expand our manufacturing capacity to meet market needs.

Demand for certain of our High Speed Products that are used in metro and data center interconnect (DCI) applications in North America and Europe is increasing rapidly. DCI deployments in North America have been strong over the past two years, and our products for these applications generally ship to contract manufacturers for our system manufacturer customers.

On May 16, 2019, the U.S. Commerce Department's Bureau of Industry and Security ("BIS") added Huawei and certain affiliates to the BIS Entity List ("Entity List"), with an effective date of May 21, 2019. This denies Huawei the ability to purchase products, software and technology that are subject to U.S. Export Administration Regulations ("EAR").

In May 2020, BIS added Fiberhome Technologies Group to the Entity List, with an effective date of June 5, 2020. This denies Fiberhome the ability to purchase products, software and technology that are subject to EAR.

We are committed to EAR compliance in each of the locations in which we do business. We subsequently determined that certain of our products were not subject to EAR regulations and could lawfully be sold to Huawei and/or Fiberhome. During 2018, prior to the denial order, non-EAR products were over half of our Huawei revenue and shipments to Huawei of many of these products continued through the current quarter. Further, in 2019 we applied for licenses for certain technology subject to EAR, and we were granted a license to ship limited, but not material, volumes of U.S.-manufactured lasers to Huawei. Similarly, in 2020 we determined that a significant portion of our shipments to Fiberhome was not be subject to EAR and shipments of certain of those products continued.

On August 17, 2020 BIS in the Department of Commerce increased restrictions on Huawei and its affiliates on the Entity List related to items produced domestically and abroad that use U.S. technology or software and imposed additional requirements for items subject to Commerce export control. On October 5, 2020 the Company announced that it will manage the business without relying on future revenue contributions from Huawei. There is no revenue from Huawei in the Company's outlook in the fourth quarter of 2020.

The Company has taken actions to better align capacity and production infrastructure with expected demand levels, with the goal of returning to profitability. The Company has taken steps to tighten production operations, account for Huawei-specific assets and inventory, consolidate Indium Phosphide production and implement an approximately 4% reduction in force. The costs to implement these changes are expected to be approximately \$10.9 million, with \$1.1 million in severance costs and \$9.8 million in inventory and idle asset charges. The Company has taken a charge of approximately \$9.4 million of these costs in the third quarter, and expects an additional \$0.7 million in the fourth quarter with the remainder as accelerated depreciation charges through 2021.

The actions taken are expected to reduce expenses with immediate impact and achieve an approximately \$2 million in quarterly operating expense reductions when fully implemented by the second quarter of 2021.

Revenue was \$102.4 million in the three months ended September 30, 2020, compared to \$92.4 million in the three months ended September 30, 2019 primarily due to volume growth in China and from continued strength from the U.S. and European based customers, including shipments through their off-shore contract manufacturers. Our gross profit was 23.8% of revenue in the three months ended September 30, 2020 compared to 28.4% of revenue in three months ended September 30, 2019. The decline in gross margin was due to the restructuring charges for actions taken in response to the new restrictions placed on Huawei by the U.S. Department of Commerce.

In the three months ended September 30, 2020, High Speed Products represented approximately 92% of total revenue, or \$94.5 million and Network Products and Solutions represented approximately 8% of total revenue, or \$7.9 million. In the three months ended September 30, 2019 High Speed Products were 92% of total revenue, or \$85.4 million and Network Products and Solutions represented approximately 8% of total revenue, or \$7.0 million. The High Speed Product market segment is growing at a much faster pace than Network Products and Solutions, demonstrating our continued leadership in 400G and higher data rate solutions to address the merging needs for more network bandwidth capacity by both Cloud players and carrier.

Critical accounting policies and estimates

Other than the policy changes disclosed in Note 1 in Notes to Condensed Consolidated Financial Statements in Item 1, Part I of this Report, there have been no material changes to our critical accounting policies and estimates during the three and nine months ended September 30, 2020 from those disclosed in Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report on Form 10-K/A for the year ended December 31, 2019.

Results of Operations

Revenue

Our business is focused on the highest speed digital optics and signal processing communications applications. In the three months ended September 30, 2020, our High Speed Products for data rates of 100G and beyond comprised 92% of our revenues.

We sell substantially all of our products to original equipment manufacturers ("OEMs") and their contract manufacturers. Revenue is recognized upon transfer of control of the product to the buyer. We price our products based on market and competitive conditions and may periodically reduce the price of our products as market and competitive conditions change or as manufacturing costs are reduced. Our first quarter revenue is typically seasonally lower than the rest of the year primarily due to the impact of annual price negotiations with customers that occur at the end of the prior year and lower capacity utilization during the holidays in China. However, this historical pattern should not be considered a reliable indicator of our future revenue or financial performance. Our sales transactions to customers are denominated primarily in U.S. dollars, with small portions in Chinese Renminbi (“RMB”) or Japanese Yen (“JPY”).

When BIS added Huawei and certain affiliates to the Entity List in the second quarter of 2019, we began shipping only certain products that have been determined by us to not be subject to EAR. Similarly, when BIS added Fiberhome to the Entity List in the second quarter of 2020, we began shipping only products determined by us not be to subject to the EAR. In August 2020, BIS added additional restrictions on Huawei imposing new export control requirements for items that use U.S. technology or software. As a result of the August 2020 restrictions, we will manage the business without relying on future revenue contributions from Huawei. We expect this Entity List to continue to affect our revenue and operations. There is no revenue from Huawei in the Company's outlook in the fourth quarter of 2020.

	Three Months Ended September 30,				Nine Months Ended September 30,			
(in thousands, except percentages)	2020	2019	$ Change	% Change	2020	2019	$ Change	% Change
Total revenue	$ 102,398	$ 92,392	$ 10,006	11%	$ 302,970	$ 253,448	$ 49,522	20%

We generate most of our revenue from a limited number of customers. Huawei has consistently been our largest customer, which was again the case in the three months ended September 30, 2020, as it accounted for approximately 44% of our revenue in the third quarter of 2020 and 37% of our revenue for the three months ended September 30, 2019.

In addition to Huawei, we have several large customers which may or may not exceed 10% of revenue in any given quarter. Two other customers were greater than 10% of our revenue for the three months ended September 30, 2020 and one other customer was greater than 10% for the three months ended September 30, 2019. After Huawei, our next four largest customers accounted for 39% and 48% of our revenue in the three months ended September 30, 2020 and 2019, respectively.

Three Months Ended September 30, 2020 Compared With Three Months Ended September 30, 2019

Revenue increased by $10.0 million, or 11%, in the three months ended September 30, 2020, compared to the same period in 2019, reflecting strong customer demand in China, as well as Metro and DCI markets in the west, including their offshore contract manufacturers. In the three months ended September 30, 2020, High Speed Products represented approximately 92% of total revenue, at the same level as in the same period in 2019, while Network Products and Solutions represented approximately 8% of total revenue both in the three months ended September 30, 2020 and the three months ended September 30, 2019. We continue to demonstrate our leadership in 400G and faster solutions to address the merging needs for more network bandwidth capacity by both Cloud players and carriers. 400ZR and 400ZR+ pluggable coherent modules were launched in the fourth quarter of 2019 and are now shipping in low volume.

Nine Months Ended September 30, 2020 Compared With Nine Months Ended September 30, 2019

Revenue increased by $49.5 million, or 20%, in the nine months ended September 30, 2020, compared to the same period in 2019, reflecting both strong customer demand in China, particularly Huawei building strategic inventory since the onset of the EAR restrictions and uncertainties from the US-China trade relationship, and Metro and DCI markets in the west. Increases in demand were partially offset by decreases in average selling prices. In the nine months ended September 30, 2020, High Speed Products represented approximately 92% of total revenue, compared to 90% of total revenue in the same period in 2019, while Network Products and Solutions represented approximately 8% of total revenue in the nine months ended

September 30, 2020, compared to approximately 10% of total revenue in the nine months ended September 30, 2019. We continue to be an industry leader for the highest speed over distance network solutions, supplying customers with components and modules which deliver the highest bandwidth per wavelength and per fiber for long distances. Our High Speed Product market segment consistently represents 90% or more of our business. Leveraging our highest performance products, together with 400ZR and 400ZR+ pluggable coherent modules launched in the fourth quarter of 2019, will bring revenue growth and potential expansion into other markets. In addition, Network Products and Solutions were also disproportionately impacted by the suspension of shipments due to Huawei's placement on the Entity List.

In the three and nine months ended September 30, 2020 and 2019, respectively, revenue from China, Americas and rest of the world, based on the ship to location requested by the customer was as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
China	56 %	48 %	59 %	51 %
Americas	17 %	25 %	17 %	22 %
Rest of world	27 %	27 %	24 %	27 %
Total revenue	100 %	100 %	100 %	100 %

Geographic revenue represents the shipment location and frequently changes based on the location of contract manufacturing, rather than end customer location. The increase in the proportion of shipments to China during the three months ended September 30, 2020, when compared to the three months ended September 30, 2019, was mainly the result of strong demand and strategic inventory build at Huawei. The same reason for the increase from 51% of revenue in the nine months ended September 30, 2019 to 59% in the same period in 2020. Shipments to China was up $13 million, or 28%, from the same three month period in 2019 and up $50 million, or 39%, from the nine months period in 2019. Shipments to the Americas and to the rest of the world are mainly to contract manufacturers for non-China based network equipment manufacturers ("NEMs").

Cost of Goods Sold and Gross Profit

Our cost of goods sold consists primarily of the cost to produce wafers and to manufacture and test our products. Additionally, our cost of goods sold generally includes stock-based compensation, write-downs of excess and obsolete inventory, amortization of certain purchased intangible assets, depreciation, acquisition-related fair value adjustments, restructuring charges, warranty costs, royalty payments, logistics and allocated facilities costs.

Gross profit as a percentage of total revenue, or gross margin, has been and is expected to continue to be affected by a variety of factors including the introduction of new products, production volume, factory utilization, the mix of products sold, inventory changes, changes in the average selling prices of our products, changes in the cost and volumes of materials purchased from our suppliers, changes in labor costs, changes in overhead costs or requirements, stock-based compensation, write-downs of excess and obsolete inventories and warranty costs. In addition, we periodically negotiate pricing with certain customers which can cause our gross margins to fluctuate, particularly in the quarters in which the negotiations occurred.

As a manufacturing company, our margins are sensitive to changes in volume and factory utilization. The Company took decisive actions to better align capacity and production infrastructure with future expected demand levels, resulting in a $9.3 million restructuring charge to cost of goods sold, 9% of revenue, for the three months ended September 30, 2020. The restructuring charge, including severance, inventory and equipment accelerated depreciation, largely explains the 4% gross margin decrease in the three months ended September 30, 2020, as compared to the same period in 2019.

Before the business change, the Company has made significant operational improvements with solid progress on cost reductions, yield improvement and effective cost absorption through higher volume, which increased gross margin by 6% in the nine months ended September 30, 2020, as compared to the same period in 2019, despite the $9.3 million restructuring charge. For the nine months ended September 30, 2019, there was $3.6 million, 1% of revenue, for Huawei special inventory reserves, and $2.3 million, 1% of revenue, of accelerated depreciation for end-of-line products.

The China government has imposed tariffs affecting products manufactured in the United States. Certain products manufactured in our U.S. operations have been included in the tariffs imposed on imports into China from the United States. These tariffs were $0.7 million and $1.5 million for the three months and for the nine months ended September 30, 2019, respectively. Starting in March 2020, tariffs on most of the products we imported into China have been eliminated and these tariffs were $0.9 million for the nine months ended September 30, 2020.

(in thousands, except percentages)	Three Months Ended September 30, 2020	2019	$ Change	% Change	Nine Months Ended September 30, 2020	2019	$ Change	% Change
Cost of goods sold	$ 77,994	$ 66,193	$ 11,801	18 %	$ 215,338	$ 195,837	$ 19,501	10 %
Gross profit	$ 24,404	$ 26,199	$ (1,795)	(7)%	$ 87,632	$ 57,611	$ 30,021	52 %

	Three Months Ended September 30, 2020	2019	Nine Months Ended September 30, 2020	2019
Gross profit as a % of revenue	24 %	28 %	29 %	23 %

Three Months Ended September 30, 2020 Compared With Three Months Ended September 30, 2019

Gross profit decreased by $1.8 million, or 7%, to $24.4 million in the three months ended September 30, 2020, compared to $26.2 million in the same period in 2019. Gross margin decreased to 24% in the three months ended September 30, 2020, compared to 28% in the three months ended September 30, 2019. Excluding the $9.3 million restructuring charge, gross margin would be 33%, 5% improvement from the same period last year. Improvement of $6.4 million was mainly from cost reductions, product mix and yield improvement, net of annual price reduction, offset by $4.4 million from the inventory write-down and accelerated depreciation charges of $4.1 million.

Nine Months Ended September 30, 2020 Compared With Nine Months Ended September 30, 2019

Gross profit increased by $30.0 million, or 52%, to $87.6 million in the nine months ended September 30, 2020, compared to $57.6 million in the same period in 2019. Gross margin increased to 29% in the nine months ended September 30, 2020, compared to 23% in the nine months ended September 30, 2019. $9.3 million of restructuring charge, 3% of revenue, was included in the nine months ended September 30, 2020, without which the gross margin would be 32%. Included in the nine months ended September 30, 2019 were a special $3.6 million, or 1% of revenue, Huawei EAR special reserve in June 2019, and $2.3 million, 1% of revenue, accelerated depreciation for end-of-line products ended by June 30, 2019. The increase in gross profit was primarily driven by $36.5 million of improvement from cost reductions, product mix and better yield net of the annual price reduction, $3.9 million of inventory write-down and $1.9 million increase in accelerated depreciation.

Operating expenses

Personnel costs are the most significant component of operating expenses and consist of costs such as salaries, benefits, bonuses, stock-based compensation and, with regard to sales and marketing expense, other variable compensation.

(in thousands, except percentages)	Three Months Ended September 30, 2020	2019	$ Change	% Change	Nine Months Ended September 30, 2020	2019	$ Change	% Change
Research and development	$ 15,276	$ 13,688	$ 1,588	12 %	40,849	42,164	$ (1,315)	(3)%
Sales and marketing	3,692	3,832	(140)	(4)%	11,630	12,058	(428)	(4)%
General and administrative	7,758	7,403	355	5 %	23,350	22,330	1,020	5 %
Amortization of purchased intangible assets	—	—	—	— %	—	119	(119)	(100)%
Asset sale related costs	87	12	75	625 %	219	388	(169)	(44)%
Restructuring charges	141	3	138	4,600 %	141	261	(120)	(46)%
Gain on asset sale	—	—	—	— %	$ —	$ (817)	$ 817	(100)%
Total operating expenses	$ 26,954	$ 24,938	$ 2,016	8 %	$ 76,189	$ 76,503	$ (314)	— %

Research and development

Research and development expense consists of personnel costs, including stock-based compensation, for our research and development personnel, and product development costs, including engineering services, development software and hardware tools, depreciation of equipment and facility costs. We record all research and development expense as incurred.

Three Months Ended September 30, 2020 Compared With Three Months Ended September 30, 2019

Research and development expense increased by $1.6 million, or 12%, in the three months ended September 30, 2020, compared to the same period in 2019. The increase was primarily due to $0.7 million higher payroll and related expenses, $0.6 million increase in project development expenses, and an increase of $0.3 million in variable compensation.

Nine Months Ended September 30, 2020 Compared With Nine Months Ended September 30, 2019

Research and development expense decreased by $1.3 million, or 3%, in the nine months ended September 30, 2020, compared to the same period in 2019. The decrease was primarily due to $2.5 million lower development and other expenses including a $1.5 million one-time license fee recorded as a reduction to research and development expense in the first quarter of 2020 and a general push-out of research and development project spend due to the Covid-19 pandemic, offset by $1.2 million increase in variable compensation.

Sales and marketing

Sales and marketing expense consists primarily of personnel costs, including stock-based compensation and other variable compensation, costs related to sales and marketing programs and services and facility costs.

Three Months Ended September 30, 2020 Compared With Three Months Ended September 30, 2019

Sales and marketing expense remained flat in the three months ended September 30, 2020 and decreased by $0.1 million, or 4%, compared to the same period in 2019.

Nine Months Ended September 30, 2020 Compared With Nine Months Ended September 30, 2019

Sales and marketing expense decreased by $0.4 million, or 4%, in the nine months ended September 30, 2020, compared to the same period in 2019 from lower levels of travel and fewer marketing events due to the Covid-19 pandemic offset by $0.3 million increase in variable compensation.

General and administrative

General and administrative expense consists primarily of personnel costs, including stock-based compensation, for our finance, human resources and information technology personnel and certain executive officers, as well as professional services costs related to accounting, tax, banking, legal and information technology services, depreciation and facility costs.

Three Months Ended September 30, 2020 Compared With Three Months Ended September 30, 2019

General and administrative expense increased by $0.4 million or 5%, in the three months ended September 30, 2020, compared to the same period in 2019. The increase was mainly from $0.8 million increase in payroll and related expenses, net of general decrease in facility expenses.

Nine Months Ended September 30, 2020 Compared With Nine Months Ended September 30, 2019

General and administrative expense increased by $1.0 million or 5%, in the nine months ended September 30, 2020, compared to the same period in 2019. The increase is mainly from a $1.1 million increase in payroll and related expenses, $1.2 million increase in variable compensation, net of a general decrease in facility and other expenses.

Amortization of purchased intangible assets

Our intangible assets are being amortized over their estimated useful lives. Amortization expense relating to technology, patents and leasehold interests are included within cost of goods sold, while customer relationships are recorded within operating expenses. Purchased intangible assets related to customer relationships were fully amortized as of December 31, 2019.

Asset sale related costs

We incurred $0.1 million and $0.2 million in the three and nine months ended September 30, 2020, respectively, and less than $0.1 million and $0.4 million in the three and nine months ended September 30, 2019, respectively, in asset sale related costs for legal and other professional services.

Interest and other income (expense), net

Interest income consists of income earned on our cash, cash equivalents and short-term investments, as well as restricted cash. Interest expense consists of amounts incurred for interest on our bank and other borrowings. Other income (expense), net is primarily made up of government subsidies as well as foreign currency transaction gains and losses. The functional currency of our subsidiaries in China is the RMB and of our subsidiary in Japan is the JPY. The foreign currency transaction gains and losses of our subsidiaries in China and Japan primarily result from transactions in U.S. dollars.

	Three Months Ended September 30,				Nine Months Ended September 30,			
(in thousands, except percentages)	**2020**	**2019**	**$ Change**	**% Change**	**2020**	**2019**	**$ Change**	**% Change**
Interest income	$ 21	$ 95	$ (74)	(78)%	$ 141	$ 293	$ (152)	(52)%
Interest expense	(263)	(483)	220	(46)%	(942)	(1,472)	530	(36)%
Other income (expense), net	(3,317)	2,960	(6,277)	(212)%	(2,314)	2,452	(4,766)	(194)%
Total	$ (3,559)	$ 2,572	$ (6,131)	(238)%	$ (3,115)	$ 1,273	$ (4,388)	(345)%

Interest expense included in interest and other income (expense), net decreased by $0.2 million in the three months ended September 30, 2020, as compared to the same period in 2019. The decrease in interest expense was due to a $14.0 million decrease in outstanding borrowings from September 30, 2019 to September 30, 2020 and lower interest rate on our Wells Fargo loan. Other income (expense), net included in interest and other income (expense), net, decreased by $6.3 million in the three months ended September 30, 2020, as compared to the same period in 2019, with $6.0 million exchange loss from U.S. dollar depreciation against both the Chinese Renminbi and Japanese Yen and $0.3 million less China government subsidy granted.

Interest expense included in interest and other income (expense) net decreased by $0.5 million in the nine months ended September 30, 2020, as compared to the same period in 2019. The decrease in interest expense was due to a $14.0 million decrease in outstanding borrowings from September 30, 2019 to September 30, 2020 and lower interest rate on our Wells Fargo loan. Other income (expense), net included in interest and other income (expense), net, decreased $4.8 million in the nine months ended September 30, 2020, as compared to the same period in 2019, primarily due to $4.4 million exchange loss from U.S. dollar appreciation against the Chinese Renminbi in the nine months period year on year and $0.3 million less China government subsidy granted.

Income taxes

We conduct our business globally and our operating income is subject to varying rates of tax in the U.S., China, Japan and other various foreign jurisdictions. Consequently, our effective tax rate is dependent upon the geographic distribution of our earnings or losses and the tax laws and regulations in each geographical region.

	Three Months Ended September 30,				Nine Months Ended September 30,			
(in thousands, except percentages)	**2020**	**2019**	**$ Change**	**% Change**	**2020**	**2019**	**$ Change**	**% Change**
Income tax (provision) benefit	$ 1,206	$ (1,561)	$ 2,767	(177)%	(1,199)	(1,526)	$ 327	(21)%

Our income tax (provision) benefit in the three months ended September 30, 2020 and 2019 was primarily related to updating the projected forecast for the tax provision for the U.S. and non-U.S. operations. We projected a pre-tax loss for our U.S. operations and a higher effective tax rate based on our non-U.S. operations for the period ended September 30, 2020.

Our income tax provision in the nine months ended September 30, 2020 and 2019 was primarily due to decreased earnings from our non-U.S. operations.

Liquidity and capital resources

As of September 30, 2020, we had working capital of $148.6 million, including total cash, short-term investments and restricted cash of $122.9 million. Approximately 26% of our total cash, short-term investments and restricted cash were held by our foreign entities, including approximately $23.6 million in accounts held by our subsidiaries in China, of which $11.6 million was in restricted cash, and approximately $8.0 million in accounts held by our subsidiary in Japan. Cash, short-term investments and restricted cash held outside of the U.S. may be subject to taxes if repatriated and may not be immediately available for our working capital needs.

Approximately $9.2 million of our retained earnings within our total accumulated deficit as of December 31, 2019 was subject to restrictions due to the fact that our subsidiaries in China are required to set aside at least 10% of their respective accumulated profits each year end to fund statutory common reserves. This restricted amount is not distributable as cash dividends except in the event of liquidation.

In September 2017 we entered into a revolving line of credit agreement with Wells Fargo Bank, National Association ("Wells Fargo") as the administrative agent for a lender group (the "Wells Fargo Credit Facility" or "Credit Facility").

The Wells Fargo Credit Facility provides for borrowings equal to the lower of (a) a maximum revolver amount of $50.0 million, or (b) an amount equal to 80% - 85% of eligible accounts receivable plus 100% of qualified cash balances up to $15.0 million, less certain discretionary adjustments ("Borrowing Base"). The maximum revolver amount may be increased by up to $25.0 million, subject to certain conditions.

The Credit Facility matures on June 30, 2022 and borrowings bear interest at an interest rate option of either (a) the LIBOR rate, plus an applicable margin ranging from 1.50% to 1.75% per annum, or (b) the prime lending rate, plus an applicable margin ranging from 0.50% to 0.75% per annum. We are also required to pay a commitment fee equal to 0.25% of the unused portion of the Credit Facility.

The Credit Facility agreement requires prepayment of the borrowings to the extent the outstanding balance is greater than the lesser of (a) the most recently calculated Borrowing Base, or (b) the maximum revolver amount. The Borrowing Base calculation contains a customary provision that gives the lender the ability to reduce the Borrowing Base by reserves that are subjectively determinable, which is considered a subjective acceleration clause. We are required to maintain a combination of certain defined cash balances and unused borrowing capacity under the Credit Facility of at least $20.0 million, of which at least $5.0 million must be unused borrowing capacity. Borrowings under the Credit Facility are collateralized by substantially all of our assets.

On June 14, 2019, we entered into a First Amendment to the Credit Facility (the "Amended Credit Facility"). The Amendment removes Huawei from the list of “Eligible Accounts” as a basis for our borrowing while Huawei is on the Entity List. During the period of time while Huawei remains on the Entity List, the concentration limits of certain other customers are increased to partially offset the removal of Huawei. Additionally, until Huawei is no longer on the Entity List, we are required to maintain a temporary combination of certain defined unrestricted cash and unused borrowing capacity under the credit facility of at least $30.0 million in the U.S. and $40.0 million world-wide, of which at least $5.0 million shall include unused borrowing capacity. In June 2020, Fiberhome was added to the Entity List and was also removed from the Borrowing Base.

We were in compliance with the covenants of this Credit Facility as of September 30, 2020. As of September 30, 2020, the outstanding balance under the Credit Facility was $21.9 million and the weighted average rate under the LIBOR option was 2.02%. The remaining borrowing capacity as of September 30, 2020 was $6.6 million, of which $5.0 million is required to be maintained as unused borrowing capacity.

We regularly issue short-term notes payable to our suppliers in China in exchange for accounts payable. These notes are supported by non-interest bearing bank acceptance drafts and are due three to six months after issuance. As a condition of the notes payable arrangements, we are required to keep a compensating balance at the issuing banks that is a percentage of the total notes payable balance until the amounts are settled. As of September 30, 2020, our subsidiary in China had two line of credit facilities with banking institutions.

Under these line of credit facilities, the non-interest bearing bank acceptance drafts issued in connection with our notes payable to our suppliers in China, had no outstanding balance at September 30, 2020 and December 31, 2019. Compensating balances relating to these credit facilities totaled $2.6 million and $2.5 million as of September 30, 2020 and December 31, 2019, respectively. Compensating balances are classified as restricted cash on our condensed consolidated balance sheets.

As of September 30, 2020, we had two loan arrangements with MUFG Bank, Ltd. (collectively the “Mitsubishi Bank Term Loans”) and a third loan arrangement with the MUFG Bank, Ltd. and The Yamanashi Chuo Bank, Ltd. One of Mitsubishi Bank Term Loans requires equal monthly payments of principal equal to 8.3 million JPY (approximately $0.1 million) until the maturity date of February 25, 2025, with a lump sum payment of the balance of 8.4 million JPY (approximately $0.1 million) on the maturity date. Interest on this loan accrues and is paid monthly based upon the annual rate of the monthly Tokyo Interbank Offer Rate (TIBOR) plus 1.40% and is secured by manufacturing equipment owned by our subsidiary in Japan. The second term loan of 690.0 million JPY (approximately $6.5 million) (the “2017 Mitsubishi Bank Loan”) was entered into in March 2017 to acquire manufacturing equipment for our Japanese subsidiary and has an annual interest rate of the monthly TIBOR rate plus 1.00%. The 2017 Mitsubishi Bank Loan requires monthly interest and principal payments over 72 months commencing in April 2018. This loan was available from March 31, 2017 to March 30, 2018 and 690.0 million JPY (approximately $6.5 million) under this loan was fully drawn in March 2017. In January 2018, we entered into a term loan agreement with MUFG Bank, Ltd. and The Yamanashi Chuo Bank, Ltd. for a term loan in the aggregate principal amount of 850.0 million JPY (approximately $8.1 million) (the "Mitsubishi-Yamanashi Term Loan"). The Mitsubishi-Yamanashi Term Loan was available from January 29, 2018 to January 29, 2025. The full amount of the Mitsubishi-Yamanashi Term Loan was drawn on January 29, 2018. Interest on the Mitsubishi-Yamanashi Term Loan is based upon the annual rate of the three months TIBOR rate plus 1.00%. The Mitsubishi-Yamanashi Term Loan requires quarterly interest payments, along with the principal payments, over 82 months commencing in April 2018. As of September 30, 2020, our aggregate outstanding principal balance under Mitsubishi Bank Term Loans and Mitsubishi-Yamanashi Term Loan was 1.4 billion JPY (approximately $13.2 million). Refer to Note 9 of Notes to Condensed Consolidated Financial Statements in Item 1 of Part I of this Report for further details.

From time to time we accept notes receivable in exchange for accounts receivable from certain of our customers in China. These notes receivable are non-interest bearing and are generally due within six months. Historically, we have collected on the notes receivable in full at the time of maturity.

In the first nine months of 2020, we generated operating income of $11.4 million and cash from operations was $49.5 million. We had an accumulated deficit of $407.4 million as of September 30, 2020. As of September 30, 2020, the remaining borrowing capacity under our revolving line of credit agreement with Wells Fargo, was $6.6 million, of which $5.0 million is required to be maintained as unused borrowing capacity. Additionally, we had $3.2 million of current portion of long-term debt as of September 30, 2020, which we plan to pay out from our existing available cash.

In China, when there is a case pending in judicial court, banks may choose to limit borrowing against existing credit lines, regardless of the legitimacy of the case. We had a dispute pending with APAT OE in judicial court. (Refer to Note 12 of Notes to Condensed Consolidated Financial Statements in Item 1 of Part I of this Report for further details.) We do not expect to make any additional draws against our credit facilities in China until this matter is resolved, and on October 27, 2020, the parties entered into a settlement agreement to settle all claims and release all property preservation orders. Nonetheless, we have sufficient cash and credit lines available in the U.S., and believe this will not adversely impact our operations in China.

On August 17, 2020, BIS increased restrictions on Huawei related to items produced domestically and abroad that uses U.S. technology or software. As a result, we will manage the business without relying on and will not plan on future revenue contributions from Huawei. As Huawei has been our largest customer, this has a material impact on our forecasted revenue and profitability. To adjust to the revised forecast, we have adjusted capital expenditures, operating expenditures, project plans and reset incoming materials to adjust to changing demand levels. We continue to implement actions to improve cash flow and profitability.

We believe that our existing cash, cash equivalents and cash flows from our operating activities will be sufficient to meet our anticipated cash needs for at least the next 12 months. Our future capital requirements will depend on many factors including our growth rate, the timing and extent of spending to support development efforts, the expansion of sales and marketing activities, the introduction of new and enhanced products, the costs to increase our manufacturing capacity and our foreign operations and the continuing market acceptance of our products. In the event that additional financing is required from outside sources, we may not be able to raise it on terms acceptable to us or at all. If we are unable to raise additional capital when desired, our business, operating results and financial condition would be adversely affected.

Rusnano Rights Agreement

Under our amended rights agreement, dated June 30, 2015, with Rusnano, one of our principal stockholders, we agreed to make a $30.0 million investment commitment (the “Investment Commitment”) toward our Russian operations. If certain of the Investment Commitments were not achieved in the indicated time frames through 2019, we had the ability to exit our Russian operations by paying an exit fee of up to $2.0 million at that time.

In April 2019, we completed the sale of 100% interest in the operations of NeoPhotonics Corporation, LLC, our manufacturing operations in Russia, to Rusnano. In connection with the sale, we received $2.0 million in cash and settled the $2.0 million exit fee.

Cash flow discussion

The table below sets forth selected cash flow data for the periods presented:

	Nine Months Ended September 30,	
(in thousands)	**2020**	**2019**
Net cash provided by operating activities	$ 49,514	$ 18,389
Net cash used in investing activities	(28,765)	(4,235)
Net cash used in financing activities	(7,416)	(10,725)
Effect of exchange rates on cash, cash equivalents and restricted cash	502	(444)
Net increase in cash, cash equivalents and restricted cash	$ 13,835	$ 2,985

Operating activities

Net cash provided by operating activities was $49.5 million in the nine months ended September 30, 2020, compared to $18.4 million net cash provided by operating activities in the same period in 2019. The net cash provided by operating activities increased by $31.1 million primarily due to the increase in net income of $26.3 million, a net increase of foreign currency remeasurement by $4.8 million, primarily due to depreciation in U.S. dollar against RMB.

Investing activities

Net cash used in investing activities was $28.8 million in the nine months ended September 30, 2020, compared to $4.2 million used in investing activities in the same period in 2019. The increase in cash flows used in investing activities was primarily due to an increase in purchases of marketable securities of $23.4 million, an increase in purchases property, plant and equipment of $3.0 million, an increase in proceeds from sales of marketable securities of $3.5 million and a decrease in proceeds from the sale of property, plant and equipment and other assets of $1.6 million, when compared to 2019.

Financing activities

Net cash used in financing activities was $7.4 million in the nine months ended September 30, 2020, compared to $10.7 million used in financing activities in the same period in 2019. The decrease in cash flows used in financing activities was primarily due to a decrease in net payments under our note payable and debt arrangements of $8.8 million, offset by a decrease in proceeds from bank loans of $5.0 million when compared to the same period in 2019.

Off-balance Sheet Arrangements

As of September 30, 2020, we did not have any significant off-balance sheet arrangements.

Recent Accounting Pronouncements

Refer to Note 1 “Basis of presentation and significant accounting policies” in the Notes to Condensed Consolidated Financial Statements in Item 1 of Part I of this Quarterly Report on Form 10-Q for a description of recent accounting pronouncements and accounting changes.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Our exposures to other market risk have not changed materially since December 31, 2019. For quantitative and qualitative disclosures about market risk, see Item 7A Quantitative and Qualitative Disclosures About Market Risk, in our Annual Report on Form 10-K/A for the year ended December 31, 2019.

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 the design and operation of our disclosure controls and procedures as of September 30, 2020. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of the end of the period covered in this report, our disclosure controls and procedures were effective at a reasonable assurance level.

Changes in Internal Control over Financial Reporting

There have not been any changes in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Securities and Exchange Act of 1934, as amended) for the quarter ended September 30, 2020 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. We have not experienced any material impact to our internal controls over financial reporting despite the fact that most of our employees are working remotely due to the Covid-19 pandemic. We are continually monitoring and assessing the impact of the Covid-19 pandemic on our internal controls to minimize the impact on their design and operating effectiveness.

Inherent Limitation on the Effectiveness of Internal Controls

The effectiveness of any system of internal control over financial reporting is subject to inherent limitations, including the exercise of judgment in designing, implementing, operating, and evaluating the controls and procedures, and the inability to eliminate misconduct completely. Accordingly, any system of internal control over financial reporting can only provide reasonable, not absolute assurances. In addition, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. We intend to continue to monitor and upgrade our internal controls as necessary or appropriate for our business, but cannot assure that such improvements will be sufficient to provide us with effective internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

From time to time, we are involved in litigation that we believe is of the type common to companies engaged in our line of business, including commercial disputes and employment issues. As of the date of this Quarterly Report on Form 10-Q, other than as described below, we are not involved in any pending legal proceedings that we believe could have a material adverse effect on our financial condition, results of operations or cash flows. However, disputes in the future may involve claims by a third party that our activities infringe their intellectual property rights. These and other types of intellectual property rights claims generally involve the demand by a third party that we cease the manufacture, use or sale of the allegedly infringing products, processes or technologies and/or pay substantial damages or royalties for past, present and future use of the allegedly infringing intellectual property. Claims that our products or processes infringe or misappropriate any third-party intellectual property rights (including claims arising through our contractual indemnification of our customers) often involve highly complex, technical issues, the outcome of which is inherently uncertain. Moreover, from time to time, we may pursue litigation to assert our intellectual property rights. Regardless of the merit or resolution of any such litigation, complex intellectual property litigation is generally costly and diverts the efforts and attention of our management and technical personnel which could adversely affect our business.

For a discussion of our current legal proceedings, please refer to the information set forth under the "Litigation" section in Note 12, *Commitments and Contingencies*, in Notes to Condensed Consolidated Financial Statements in Item 1 of Part I of this Quarterly Report on Form 10-Q, which is incorporated herein by reference.

ITEM 1A. RISK FACTORS

Except for those risk factors denoted by an asterisk (*), the risk factors facing our company have not changed materially from those set forth in Part I, Item 1A of our Annual Report on Form 10-K/A for the year ended December 31, 2019, as filed with the SEC on March 3, 2020, which risk factors are set forth below.

Risks Associated with Our Business

We are dependent on a small number of customers for a significant portion of our revenue and the loss of, or a significant reduction in orders in any period from any of these major customers may reduce our revenue and adversely impact our results of operations.

The telecommunications systems market is concentrated with approximately ten global network equipment manufacturing companies having collectively more than 90% market share in the markets outside of Cloud and DCI. In the three months ended September 30, 2020 and 2019 Huawei accounted for approximately 44% and 37% of our revenue, respectively. In the nine months ended September 30, 2020 and 2019 Huawei accounted for approximately 49% and 41% of our revenue, respectively. Revenue generated from one other customer in the three and nine months ended September 30, 2020 and 2019 was greater than 10% of our revenue. We have generated most of our revenue from a limited number of customers. In the three months ended September 30, 2020 and 2019, our top five customers represented 82% and 85% of our revenue respectively. In the nine months ended September 30, 2020 and 2019, our top five customers represented 82% and 84% of our revenue respectively. The removal of Huawei revenue from our forecast will have a material adverse effect on our revenue in the fourth quarter of 2020 and through 2021 as the Company's outlook in the fourth quarter of 2020 has no revenue from Huawei. The loss of, or a significant reduction in orders from, any of these other major customers would materially and adversely affect our revenue and results of operations.

Our solutions for the Cloud and DCI market segments may not achieve broader market acceptance, which would prevent us from increasing our revenue and market share.

Part of our overall strategy is to continue to expand our optoelectronic solutions for the highest speed Cloud and DCI market segments. If we fail to achieve broader acceptance of our products in the Cloud and DCI market segments, there would be an adverse impact on our ability to increase our revenue, gain market share and achieve and sustain profitability. Our ability to achieve broader market acceptance for our products will be impacted by a number of factors, but not limited to:

- our ability to develop, qualify, and produce optoelectronic solutions for 100G to 800G and beyond that compete favorably against other solutions on the basis of price, quality, reliability and performance;

- our ability to timely develop and introduce new designs and timely qualify and certify our products;

- whether major Cloud and DCI data center operators will qualify and adopt our solutions, which are based on a new network architecture and have a limited history in these market segments;

- our ability to develop products that comply with applicable standards and regulatory requirements, as well as potential in-country manufacturing requirements; and;

- our ability to develop and maintain successful relationships with our customers and suppliers.

If the Cloud and DCI market segments fail to grow as expected, or if demand for our solutions in these segments fails to materialize, or if we fail to develop, qualify, and produce competitive products in these markets, our business, financial condition, results of operations and prospects would suffer.

****We are subject to governmental export and import controls that could subject us to liability, impair our ability to compete in international markets, or restrict our sales to certain customers. In particular, U.S. governmental export control actions have impacted our sales to Huawei, which has had and will likely continue to have a material adverse effect on our business, financial condition and results of operations.***

We are subject to export and import control laws, trade regulations and other trade requirements that limit which products we sell and where and to whom we sell our products. In some cases, it is possible that export licenses would be required from the U.S. or other government agencies such as, but not limited to, those in Japan or China for some of our products. In addition, various countries regulate the export or import of certain technologies and have enacted laws that could limit our ability to distribute our products. Failure to comply with these and similar laws on a timely basis, or at all, or any limitation on our ability to export or sell our products or to obtain any required licenses would adversely affect our business, financial condition and results of operations.

In May 2019, BIS added Huawei and certain affiliates to the Entity List. This denies Huawei the ability to purchase products, software and technology that are subject to U.S. Export Administration Regulations ("EAR"). To ensure compliance, we immediately suspended shipments to Huawei and began a systematic assessment of our products sold to Huawei to determine how these products are, or are not, subject to the restrictions resulting from the Entity List. This suspension had an immediate impact on our products shipments to Huawei in the second quarter of 2019, which significantly affected our revenue for the remainder of 2019 and into 2020. On August 17, 2020, BIS increased restrictions on Huawei related to items produced domestically and abroad that use U.S. technology or software.

We are committed to EAR compliance in each of the locations in which we do business. Due to the actions of BIS in August 2020,we halted shipments to Huawei after September 14, 2020 and we have removed Huawei revenue from our operating plan. The loss of revenue from Huawei has a material adverse impact on our revenues and financial results, and we have taken actions to adjust our business and place higher priority on the Cloud and DCI market segments.

Additionally, in May 2020, BIS added Fiberhome to the Entity List, with an effective date of June 5, 2020. This denies Fiberhome the ability to purchase products, software and technology that are subject to EAR. For Fiberhome, we determined that certain of our products are not subject to EAR regulations and may be lawfully sold to Fiberhome. As a result, shipments of those products have continued. Further BIS actions with regard to Fiberhome may adversely affect our ability to sell products to Fiberhome.

Starting around the end of June 2019, U.S. government officials allowed companies to apply for temporary export licenses for products subject to EAR and stated that these licenses might be granted if the product was deemed not to be a risk to national security. We have submitted license applications for certain products and associated technology having elements subject to EAR. To date, we have received a license for limited, but not material, volumes of U.S. origin lasers. There can be no assurance as to which products or technology may qualify for a license, or that any such licenses will be granted in a timely manner or at all. Furthermore, there can be no assurance that the U.S. government will not challenge our determination of which products and associated technology are not subject to the EAR regulations.

Even if licenses are obtained, or if the EAR restrictions are lifted or modified to allow us to sell the same types of products we have sold historically, Huawei may decide not to purchase these products for various reasons, including to reduce its own risks of being exposed to disruptions of its supply chain.

Continued tension in U.S.-China trade relations may adversely impact our business and operating results.

Beyond the BIS actions affecting our sales to Huawei, the U.S. government has taken certain actions that change U.S. trade policies, including recently-imposed tariffs affecting certain products manufactured in China. Some products manufactured by our Chinese affiliates are subject to tariffs if imported into the United States. In addition, the China government has taken certain reciprocal actions, including tariffs, which affect certain products manufactured in the United States. Certain of our products manufactured in our U.S. operations were included in the tariffs imposed on imports into China from the United States. As of March 2020, tariffs on most of the products we imported into China have been eliminated. However, there can be no assurance that China will not re-impose these or similar tariffs, impose export restrictions, or take other retaliatory trade actions that may have a material impact on our business.

It is unknown whether and to what extent additional new tariffs or other new laws or regulations will be adopted that increase the cost of importing products to or from the United States, or from China to the United States. Further, it is unknown what effect that any such new tariffs or retaliatory actions would have on us or our industry and customers. As additional new tariffs, legislation and/or regulations are implemented, or if existing trade agreements are renegotiated or if China or other affected countries take retaliatory trade actions, such changes could have a material adverse effect on our business, financial condition, results of operations or cash flows.

In response to trade tensions, the Chinese government and/or individual Chinese customers may take steps to reduce their supply chain dependence on products from U.S. suppliers through their own internal developments or the selection of non-U.S. suppliers, placing us at a commercial disadvantage and potentially affecting our business.

We *have had a history of losses which we expect will recur in the fourth quarter of 2020 and may recur in the future.

We have had a history of losses and we may incur additional losses in future periods. As of September 30, 2020, our accumulated deficit was $407.4 million. Due to the actions of BIS in August 2020, we decided to remove Huawei revenue from our operating plan at this time. As a result of this decision, we expect that we will incur losses in the fourth quarter of 2020 and in 2021 as we pivot our business to place higher priority on the Cloud and DCI market segments.

We continue to review our expenditures related to the ongoing operations of our business for their effectiveness. We plan to make adjustments to our expenditures as needed. These include expenditures related to the sales, marketing and development of our products and to maintain our manufacturing facilities and research and development operations. Operations and assets that are deemed to be less effective have been and may in the future be subject to restructuring, which could lead to increased operating losses in future periods when and if restructuring charges are incurred.

The Covid-19 pandemic has and could further harm our operations and our financial operations.

On March 12, 2020, the World Health Organization declared the Covid-19 coronavirus to be a pandemic. In an effort to contain and mitigate the spread of Covid-19, many countries, including China and the United States, have imposed significant restrictions on travel and business and government operations. There have been business closures and a substantial reduction in economic activity in countries that have had significant outbreaks of Covid-19.

Our operations and supply chain are and could continue to be impacted by the implications of the Covid-19 pandemic, which could harm our future revenue and financial condition and increase our costs and expenses. Our manufacturing operations in Silicon Valley, California; Tokyo, Japan; and Shenzhen and Dongguan, China have been affected and could continue to be affected with actions such as being temporarily shut down, requiring longer lead times or being subject to logistics issues. The same issues could impact key suppliers in Patumthanee, Thailand, and Ottawa, Canada and other locations throughout United States and Asia. The efficiency of our business operations (including sales and research and development) could also be reduced as a result of compliance with shelter-in-place orders in Silicon Valley, California; Ottawa, Canada; and Shenzhen and Wuhan, China.

Similarly, our worldwide operations could be subject to secondary effects of the pandemic. Even if our facilities are not directly affected, the pandemic and its effects could substantially disrupt the business of our suppliers or customers, which could have a material adverse effect on us.

Accordingly, we may experience significant disruptions as a result of the Covid-19 pandemic that could materially impact our business, including:

- slower customer deployments of systems using our products due to uncertainty in the business climate;
- reduced demand for our products;
- disruptions of the supply chain of components needed for our products; and
- disruptions of our ability to conduct sales, marketing, product development and other important business activities.

The extent to which the Covid-19 pandemic may impact our business will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the duration of the outbreak, travel restrictions, governmental mandates issued to mitigate the spread of the disease, business closures, economic disruptions, and the effectiveness of actions taken to contain and treat the virus. Accordingly, we expect the Covid-19 pandemic may have a negative impact on our sales and our results of operations, the size and duration of which we are currently unable to predict. We are not insured against major public health events, including the Covid-19 pandemic.

To the extent the Covid-19 pandemic adversely affects our business and financial results, it may also have the effect of heightening many of the other risks described in this ‘‘Risk Factors’’ section, such as reduced spending for communications networks, fluctuations in customer demand, manufacturing and supply constraints, and our ability to raise capital (if necessary).

If our customers do not qualify our products for use, then our results of operations may suffer.

Prior to placing volume purchase orders with us, most of our customers require us to obtain their approval called qualification in our industry of our new and existing products, and our customers often audit our manufacturing facilities and perform other vendor evaluations during this process. The qualification process involves product sampling and reliability testing and collaboration with our product management and engineering teams in the design and manufacturing stages. If we are unable to qualify our products with customers, then our revenue would be lower than expected and we may not be able to recover the costs associated with the qualification process which would have an adverse effect on our results of operations.

In addition, due to evolving technological changes in our markets, a customer may cancel or modify a design project before we have qualified our product or begun volume manufacturing of a qualified product. It is unlikely that we would be able to recover the expenses for cancelled or unutilized custom design projects.

We face intense competition which could negatively impact our results of operations and market share.

The communications networks industry is highly competitive. Our competitors range from large international companies offering a wide range of products to smaller companies specializing in niche products.

Some of our competitors have substantially greater name brand recognition, technical, financial, and marketing resources, and greater manufacturing capacity, as well as better-established relationships with customers, than we do. Some of our competitors have more resources to develop or acquire, and more experience in developing or acquiring, new products and technologies. Some of our competitors may be able to develop new products more quickly than us and may be able to develop products that are more reliable or which provide more functionality than ours. In addition, some of our competitors have the financial resources to offer competitive products at below-market pricing levels that could prevent us from competing effectively and result in a loss of sales or market share or cause us to lower prices for our products.

We also face competition from some of our customers who evaluate our capabilities against the merits of manufacturing products internally. Due to the fact that such customers are not seeking to make a comparable profit directly from the manufacture of these products or for other reasons, they may have the ability to provide competitive products at a lower total cost than we would charge such customers. As a result, these customers may purchase less of our products and there would be additional pressure to lower our selling prices which, accordingly, would negatively impact our revenue and gross margin.

Manufacturing problems and supply constraints could impact manufacturing yields or result in delays in product shipments to customers and could adversely affect our revenue, competitive position and reputation.

We may experience delays, disruptions or quality control problems in our manufacturing operations or supply chain constraints, which could adversely impact manufacturing volumes, yields or delay product shipments. As a result, we could incur additional costs that would adversely affect our gross margin, and product shipments to our customers could be delayed beyond the shipment schedules requested by our customers, which would negatively affect our revenue, competitive position and reputation.

Additionally, manufacturing of new products and manufacturing yields more generally depend on a number of factors, including the stability and manufacturability of the product design, manufacturing improvements gained over cumulative production volumes, the quality and consistency of component parts and the nature and extent of customization requirements by customers. Capacity constraints, raw materials shortages, logistics issues, labor shortages, volatility in utilization of manufacturing operations, supporting utility services and other manufacturing supplies, the introduction of new product lines, rapid increases in production demands and changes in customer requirements, manufacturing facilities or processes, or those of some third party contract manufacturers and suppliers of raw materials and components have historically caused, and may in the future cause, reduced manufacturing yields, negatively impacting the gross margin on, and our production capacity for, those products.

Our ability to maintain sufficient manufacturing yields is particularly challenging with respect to PICs due to the complexity and required precision of a large number of unique manufacturing process steps. Manufacturing yields for PICs can also suffer if contaminated materials or materials that do not meet highly precise composition requirements are inadvertently utilized. Because a large portion of our PIC manufacturing costs are fixed, PIC manufacturing yields can have a substantial effect on our gross margin. Lower than expected manufacturing yields could also delay product shipments and decrease our revenue.

Further, our products contain purchased components including electronic components. It is possible that such purchased items could contain quality defects, manufacturing defects, performance problems or even counterfeit substitutes, each of which could result in manufacturing issues. As a result, we could incur additional costs that would adversely affect our gross margin, and product shipments to our customers could be delayed beyond the shipment schedules requested by our customers, which would negatively affect our revenue, competitive position and reputation.

We may need to raise additional capital in order to pursue our business strategies or maintain our operations, and we may not be able to obtain capital when desired on favorable terms, if at all, or without dilution to our stockholders.

We believe that our existing cash and cash equivalents, and cash flows from our operating activities and funds available under our credit facilities will be sufficient to meet our anticipated cash needs for at least the next 12 months. However, we operate in an industry that makes our prospects difficult to evaluate. It is possible that we may not generate sufficient cash flow from operations or otherwise have the capital resources to meet our future capital needs. If this occurs, we may need additional financing to continue operations or execute on our current or future business strategies, including to:

- invest in our research and development efforts (particularly in the Cloud and DCI market segments), including by hiring additional technical and other personnel;
- maintain and expand our operating or manufacturing infrastructure;
- acquire complementary businesses, products, services or technologies; or
- otherwise pursue our strategic plans and respond to competitive pressures.

We do not know with certainty what forms of financing, if any, will be available to us. If financing is not available on acceptable terms, if and when needed, our ability to fund our operations, enhance our research and development and sales and marketing functions, develop and enhance our products, respond to unanticipated events, including unanticipated opportunities, or otherwise respond to competitive pressures could be adversely impacted.

If we incur additional indebtedness through arrangements such as credit agreements or term loans, such arrangements may impose restrictions and covenants that limit our ability to respond appropriately to market conditions, make capital investments or take advantage of business opportunities. In addition, any additional debt arrangements we may enter into would likely require us to make regular interest payments, which could adversely affect our results of operations.

Our future results of operations may be subject to volatility as a result of exposure to fluctuations in foreign exchange rates, primarily the Chinese Renminbi (RMB) and Japanese Yen (JPY) exchange rates.

We are exposed to foreign exchange risks. Foreign currency fluctuations may adversely affect our revenue and our costs and expenses, and hence our results of operations. A substantial portion of our business is conducted through our subsidiaries based in China, whose functional currency is the RMB and Japan, whose functional currency is the JPY. The value of the RMB against the U.S. dollar and other currencies and the value of the JPY against the U.S. dollar and other currencies fluctuate and are affected by, among other things, changes in political and economic conditions.

To the extent that transactions by our subsidiaries in China and Japan are denominated in currencies other than the RMB and JPY, we bear the risk that fluctuations in the exchange rates of the RMB and JPY in relation to other currencies could decrease our revenue or increase our costs and expenses, therefore having an adverse effect on our future results of operations.

While we generate a significant portion of our revenue in U.S. dollars, a significant portion of our cost of goods sold are in RMB and JPY. Therefore appreciation in RMB and JPY against the U.S. dollar would negatively impact our cost of goods sold upon translation to U.S. dollars.

From mid-2016 to mid-2018, we entered into hedging transactions to reduce the short-term impact of foreign currency fluctuations. During the second half of 2018, we discontinued entering into foreign currency forward contracts. This may increase the risks to us arising from the short-term impact of foreign currency fluctuations. If we resume using hedging transactions to reduce our risks in this area, the availability and effectiveness of these hedging transactions may be limited and we may not be able to successfully hedge our exposure. In addition, our currency exchange variations may be magnified by Chinese exchange control regulations that restrict our ability to convert RMB into foreign currency.

Customer demand is difficult to accurately forecast and, as a result, we may be unable to optimally match production with customer demand.

We make planning and spending decisions based on our estimates of customer requirements. The short-term nature of commitments by many of our customers, and the possibility of unexpected changes in demand for their products, reduce our ability to accurately estimate future customer requirements. A sudden reduction in customer demand due to market downturns or other reasons would have a material adverse effect on our operating results, as occurred in 2017, because many of our costs and operating expenses are relatively fixed.

On the other hand, on occasion, customers may require rapid increases in production, which can strain our resources, cause our manufacturing to be negatively impacted by materials shortages, necessitate higher or more restrictive procurement commitments, increase our manufacturing yield loss and scrapping of excess materials, result in delayed shipments and/or reduce our gross margins. We may not have sufficient capacity at any given time to meet the volume demands of our customers, and we may have difficulty expanding our manufacturing operations on a timely basis to meet increasing customer demand. Additionally, one or more of our suppliers may not have sufficient capacity at any given time to meet our volume demands. Any inability to meet customer demands for rapid increases in production in the future could have a material adverse effect on our business, financial condition, results of operations and prospects.

We are under continuous pressure to reduce the prices of our products, which has adversely affected, and may continue to adversely affect, our gross margins.

The communications networks industry has been characterized by declining product prices over time as technological advances increase price and performance and put pressure on existing products. We have reduced the prices of many of our products in the past, most often during annual end-of-year price negotiation. We expect pricing pressure for our products to continue, including from our major customers. To maintain or increase their market share, our competitors also reduce prices of their products each year. In addition, our customers may seek to internally develop and manufacture competing products at a lower cost than we would otherwise charge, which would add additional pressure on us to lower our selling prices. If we are unable to offset any future reductions in our average selling prices by increasing our sales volume, reducing our costs or introducing new products, our gross margin would be adversely affected.

If we fail to retain our key personnel or if we fail to attract additional qualified personnel, we may not be able to achieve our anticipated growth and our business could suffer.

Our success and ability to implement our business strategy depends upon the continued contributions of our senior management team and others, including senior management in foreign subsidiaries and our technical and operations employees in all locations. Our future success depends, in part, on our ability to attract and retain key personnel, including our senior management and others. The loss of services of members of our senior management team or key personnel or the inability to continue to attract and retain qualified personnel could have a material adverse effect on our business. Competition for highly skilled technical and operations people where we operate is extremely intense, and we continue to face challenges identifying, hiring and retaining qualified personnel in many areas of our business.

****We depend upon outside contract manufacturers for a portion of the manufacturing process for some of our products. Our operations and revenue related to these products could be adversely affected if we encounter problems with any such contract manufacturer.***

While many of our products are manufactured internally, we also rely upon contract manufacturers in Thailand, China, Japan and other Asia locations and Ontario (Canada) to provide back-end manufacturing and production of some of our products. Our reliance on contract manufacturers for some of our products makes us vulnerable to possible production capacity constraints, reduced control over their supply chains, delivery schedules, manufacturing yields, manufacturing quality/controls and costs. If one of our contract manufacturers is unable to meet all of our customer demand in a timely fashion, whether due to their direct operating control, due to their supply chain or due to the Covid-19 pandemic, this could have a material adverse effect on the revenue from our products.

The majority of our customer contracts do not commit customers to specified buying levels, and many of our customers may decrease, cancel or delay their buying levels at any time with little or no advance notice to us.

Our products are typically sold pursuant to individual purchase orders or by use of a vendor-managed inventory, or VMI, model, which is a process by which we ship agreed quantities of products to a customer-designated location and those products remain our inventory and we retain the title and risk of loss for those products until the customer takes possession of the products. Our customers are typically not contractually committed to buy any quantity of products beyond firm purchase orders. Many of our customers may increase, decrease, cancel or delay purchase orders already in place, which may impact our level of business.

We may be exposed to costs or losses from product lines that we intend to exit or may undertake divestiture of portions of our business that require us to continue providing substantial post-divestiture transition services and support, which may cause us to incur unanticipated costs and liabilities and adversely affect our financial condition and results of operations.

We have a strategy to exit products that have been declining in revenue and have lower gross margins than our other higher speed products. For instance, in January 2017, we completed the sale of assets and transfer of certain liabilities of our access network and low speed transceiver product lines (the “Low Speed Transceiver Products”) and in January 2019 we announced the end-of-life of certain client transceiver modules and discontinued the manufacture and sale of those products after completing final production in May 2019. We may incur additional costs in connection with the sale or end-of-life of these products, or other products and/or facilities in the future, and our revenues and net income could be negatively affected, particularly in the short term, in connection with the end-of-life or sales of such products and/or facilities. It is also possible that we could incur continued costs or liabilities after the end-of-life process is completed, which could have a material adverse effect on our financial condition or operating results.

Spending for communications networks is cyclical in nature, and any future downturn may reduce demand for our products and revenue.

Our future success as a provider of components, modules and subsystems to leading network equipment vendors depends on continued capital spending on global communications networks. Network traffic has experienced rapid growth driven primarily by bandwidth-intensive content, including cloud services, mobile video and data services, wireless 4G/LTE and now 5G services, social networking, video conferencing and other multimedia. This growth is intensified by the proliferation of fixed and wireless devices that are enabling consumers to access content at increasing data rates anytime and anywhere. Our future success depends on continued demand for high-bandwidth, high speed communications networks and the ability of network equipment vendors and carrier data center operators to fulfill this demand. While we believe the long term prospects for growth in data traffic remain strong, especially in Cloud and DCI market segments, our business and financial results will suffer if growth does not occur as expected.

The markets for communications networks may be cyclical and characterized by rapid technological change, price erosion, evolving standards and wide fluctuations in product supply and demand. In the past, including recently to varying degrees in China, the U.S. and Europe, these markets have experienced significant downturns, often connected with, or in anticipation of, the maturation of product cycles for both manufacturers’ and their customers’ products or in response to over or under purchasing of inventory by our customers relative to ultimate carrier demand, and with declining general economic conditions. These downturns have been characterized by diminished product demand, production overcapacity, high inventory levels and accelerated erosion of average selling prices. Our historical results of operations have been subject to substantial fluctuations as a result of market downturns and changes in capital spending, and we may experience substantial period-to-period fluctuations in future results of operations.

Risks associated with international sales and operations could adversely affect our business and financial results.

We derive a significant portion of our revenue from international sales in various markets, and we have substantial operations in China, Japan and Thailand in addition to the U.S. Our international revenue and operations are subject to a number of material risks, including, but not limited to:

- difficulties in staffing, managing and supporting operations across different jurisdictions;
- difficulties in enforcing agreements and collecting receivables through foreign legal systems;
- fewer legal protections for intellectual property in foreign jurisdictions;
- international trade restrictions;

- difficulties in obtaining any necessary governmental authorizations for the export of our products to certain foreign jurisdictions;
- imposition of export restrictions on sales to any of our major foreign customers;
- fluctuations in foreign economies and fluctuations in the value of foreign currencies and interest rates;
- major health events, such as outbreaks of contagious disease;
- domestic and international economic or political changes, hostilities and other disruptions; and
- difficulties and increased expenses in complying with a variety of U.S. and foreign laws, regulations and trade standards, including the Foreign Corrupt Practices Act and international labor standards.

Negative developments in any of these areas in China, Japan, Thailand or other countries could result in a reduction in demand for our products, the cancellation or delay of orders already placed, difficulties in producing and delivering our products, threats to our intellectual property, difficulty in collecting receivables, higher labor costs and a higher cost of doing business.

In addition, although we maintain an anti-corruption compliance program throughout our company, violations of our compliance program may result in criminal or civil sanctions, including material monetary fines, penalties and other costs against us or our employees, and may have a material adverse effect on our business.

Our revenues and costs will fluctuate over time, making it difficult to predict our gross margins and future results of operations.

Our revenue, gross margin and results of operations have varied significantly and are likely to continue to vary from quarter to quarter due to a number of factors, many of which are not within our control. We may not be able to maintain or improve our gross margins because of slow introductions of new products, pricing pressure from increased competition, failure to effectively reduce the cost of existing products, failure to improve our product mix, future macroeconomic or market volatility reducing sales volumes, changes in customer demand (including a change in product mix among different areas of our business) or other factors. Our gross margins can also be adversely affected for reasons including, but not limited to, fixed manufacturing costs that would not be expected to decrease in proportion to any decrease in revenues; unfavorable production yields or variances; increases in costs of input parts and materials; the timing of movements in our inventory balances; warranty costs and related returns; changes in foreign currency exchange rates; possible exposure to inventory valuation reserves; and other increases in our costs and expenses, including as a result of rising labor costs in China. Such significant increases in costs without corresponding increases in revenue would materially and adversely affect our business, our results of operations and our financial condition and our gross margins.

Our revenues are typically subject to seasonality.

Our first quarter revenue is typically seasonally lower than the rest of the year primarily due to annual price negotiations with customers that occur at the end of the prior year and lower capacity utilization during the annual new year holidays in China. This historical pattern typically adversely affects our revenues in the first quarter of each year and impacts the typical annual distribution of revenue from quarter to quarter through the year. That said, our first quarter revenue varies markedly year to year so should not be considered a reliable indicator of our future revenue or financial performance. In Q2 2020, this seasonality was higher due to the China central government extending the annual new year holidays in China in an effort to contain impact of the novel coronavirus.

Covenants in our borrowing arrangements may limit our flexibility in responding to business opportunities and competitive developments and increase our vulnerability to adverse economic or industry conditions.

We have lending arrangements with several financial institutions, which generally require us to maintain certain financial covenants and limit our ability to take certain actions such as incurring some kinds of additional debt, paying dividends, or engaging in certain transactions like mergers and acquisitions, investments and asset sales without the lenders' consent. These restrictions may limit our flexibility in responding to business opportunities, competitive developments and adverse economic or industry conditions. In addition, a breach of any of these covenants, or a failure to pay interest or indebtedness when due under any of our credit facilities, could result in a variety of adverse consequences, including the acceleration of our indebtedness.

We may be involved in intellectual property disputes, which could divert management's attention, cause us to incur significant costs and prevent us from selling or using the challenged technology.

Participants in the markets in which we sell our products have experienced frequent litigation regarding patent and other intellectual property rights. Numerous patents in these industries are held by others, including our competitors. In addition, from time to time, we have been notified that we may be infringing certain patents or other intellectual property rights of others. Regardless of their merit, responding to such claims can be time consuming, divert management's attention and resources and may cause us to incur significant expenses. In addition, there can be no assurance that third parties will not assert infringement claims against us, whether or not such claims are valid. While we believe that our products do not infringe in any material respect upon intellectual property rights of other parties and/or meritorious defense would exist with respect to any assertions to the contrary, we cannot be certain that our products would not be found infringing the intellectual property rights of others.

In January 2010, Finisar Corporation, or Finisar (which was acquired by II-VI, Inc. in September 2019), filed a complaint in the U.S. District Court for the Northern District of California against us and three other co-defendants. In the complaint, Finisar alleged infringement of certain of its U.S. patents arising from the co-defendants' respective manufacture, importation, use, sale of or offer to sell certain optical transceiver products in the U.S. In May 2012, we and Finisar agreed to toll our respective claims until the refiling of certain of the previously asserted claims from this dispute. As a result, Finisar/II-VI is permitted to bring a new lawsuit against us if it chooses to do so, and we may bring new claims against Finisar upon seven days written notice prior to filing such claims.

Although we believe that we would have meritorious defenses to the infringement allegations and intend to defend any new similar lawsuit vigorously, there can be no assurance that we will be successful in our defense. Even if we are successful, we may incur substantial legal fees and other costs in defending the lawsuit. Further, a new lawsuit, if brought by either party, would be likely to divert the efforts and attention of our management and technical personnel, which could harm our business.

If we fail to protect our intellectual property and other proprietary rights, our business and results of operations could be materially harmed.

Our success depends to a significant degree on our ability to protect our intellectual property and other proprietary rights. We rely on a combination of patent, trademark, copyright, trade secret and unfair competition laws, as well as license agreements and other contractual provisions, to establish and protect our intellectual property and other proprietary rights. We have applied for patent registrations in the U.S. and in other foreign countries, some of which have been issued. We cannot guarantee that our pending applications will be approved by the applicable governmental authorities.

Similarly we must protect all company data as it pertains to customers, products and product designs, technology and technology related trade secrets, plus customer and supplier and personal data of suppliers, customers and personnel. We rely on a combination of these important data elements to establish and protect multiple aspects of our business, and loss of data, breaching of data or stealing of such data could hard the company.

Policing unauthorized use of our technology is difficult and we cannot be certain that the steps we have taken will prevent the misappropriation, unauthorized use or other infringement of our intellectual property rights. Further, we may not be able to effectively protect our intellectual property rights from misappropriation or other infringement in foreign countries where we have not applied for patent protections, and where effective patent, trademark, trade secret and other intellectual property laws may be unavailable, or may not protect our proprietary rights as fully as U.S. or Japan law. Particularly, our U.S. patents do not afford any intellectual property protection in China, Japan, Canada, Russia or other Asia locations.

In the future, we may need to take legal actions to prevent third parties from infringing upon or misappropriating our intellectual property or from otherwise gaining access to our technology. Protecting and enforcing our intellectual property rights and determining their validity and scope could result in significant litigation costs and require significant time and attention from our technical and management personnel. If we fail to protect our intellectual property and other proprietary rights, or if such intellectual property and proprietary rights are infringed or misappropriated, our business, results of operations or financial condition could be materially harmed.

We may be subject to disruptions or failures in information technology systems and network infrastructures that could have a material adverse effect on our business and financial condition.

We rely on the efficient and uninterrupted operation of complex information technology systems and network infrastructures to operate our business. A disruption, infiltration or failure of our information technology systems as a result of software or hardware malfunctions, system implementations or upgrades, computer viruses, cyber-attacks, third-party security breaches, employee error, theft or misuse, malfeasance, power disruptions, natural disasters or accidents could cause breaches of data security, loss of intellectual property and critical data and the release and misappropriation of sensitive competitive information and partner, customer and employee personal data. Any of these events could harm our competitive position, result in a loss of customer confidence, cause us to incur significant costs to remedy any damages and ultimately materially adversely affect our business and financial condition.

It could be discovered that our products contain defects that may cause us to incur significant costs, divert our attention, result in a loss of customers and result in product liability claims.

Our products are complex and undergo quality testing as well as formal qualification, both by our customers and by us. For various reasons, such as the occurrence of performance problems that are unforeseeable in testing or that are detected only when products age or are operated under peak stress conditions, our products may fail to perform as expected long after customer acceptance. Failures could result from faulty components or design, problems in manufacturing or other unforeseen reasons. As a result, we could incur significant costs to repair or replace defective products under warranty, particularly when such failures occur in installed systems. Any significant product failure could result in lost future sales of the affected product and other products, as well as customer relations problems and litigation, which could harm our business.

Further, our products contain purchased components including electronic components. It is possible that such purchased items could contain quality defects, manufacturing defects, performance problems or even counterfeit substitutes. Any significant product failure that is the result of such defects could result in lost future sales as well as customer relations problems and litigation, which could harm our business.

The communications networks industry has long product development cycles requiring us to incur product development costs without assurances of an acceptable investment return.

Large volumes of communications equipment and support structures are installed with considerable expenditures of funds and other resources, and long investment return period expectations. At the component supplier level, these cycles create considerable, typically multi-year, gaps between the commencement of new product development and volume purchases. Due to changing industry and customer requirements, we are constantly developing new products, including seeking to further integrate functions on PICs and developing and using new technologies in our products. These development activities necessitate significant investment of capital. Our new products often require a long time to develop because of their complexity and rigorous testing and qualification requirements. Accordingly, we and our competitors often incur significant research and development and sales and marketing costs for products that, initially, will be purchased by our customers long after much of the cost is incurred and, in some cases, may never be purchased due to changes in industry or customer requirements in the interim.

If we fail to obtain the right to use the intellectual property rights of others which are necessary to operate our business, and to protect their intellectual property, our business and results of operations will be adversely affected.

From time to time we may choose to, or be required to, license technology or intellectual property from third parties in connection with the development of our products. Failure to obtain a necessary third-party license required for our product offerings or to develop new products and product enhancements could adversely affect our business.

Similarly from time to time others may endeavor to infringe on our intellectual property or encroach on our trademarks or other intellectual property. Our failure to identify, recognize and/or action to product such intellectual property could adversely affect our business.

Participation in standards setting organizations may subject us to intellectual property licensing requirements or limitations that could adversely affect our business and prospects.

In the course of our participation in the development of emerging standards for some of our present and future products, we may agree to grant to all other participants a license to our patents that are essential to the practice of those standards on reasonable and non-discriminatory, or RAND, terms. If we fail to limit to whom we license our patents, or fail to limit the terms of any such licenses, we may be required to license our patents or other intellectual property to others in the future, which could limit the effectiveness of our patents against competitors.

Any potential dispute involving our products, services or technology could also include our customers using our products, which could trigger our indemnification obligations to them and result in substantial expenses to us.

In any potential dispute involving allegations that our products, services or technology infringe the intellectual property rights of third parties, our customers could also become the target of litigation. Because we often indemnify our customers for intellectual property claims made against them for products incorporating our technology, any claims against our customers could trigger indemnification obligations in some of our supply agreements, which could result in substantial expenses such as increased legal expenses, product recalls, damages for past infringement or royalties for future use.

Rapidly changing standards and regulations could make our products obsolete, which would cause our revenue and results of operations to suffer.

We design our products to conform to regulations established by governments and to standards set by industry standards bodies worldwide, such as The American National Standards Institute, the European Telecommunications Standards Institute, the International Telecommunications Union and the Institute of Electrical and Electronics Engineers. Various industry organizations are currently considering whether and to what extent to create standards for elements used in 100Gbps and beyond systems. Because certain of our products are designed to conform to current specific industry standards, if competing or new standards emerge that are preferred by our customers, we would have to make significant expenditures to develop new products and our revenue and results of operations would suffer.

If we fail to maintain effective internal control over financial reporting in the future, the accuracy and timing of our financial reporting may be adversely affected.

Our management is responsible for establishing and maintaining adequate internal control over our financial reporting, as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Preparing our consolidated financial statements involves a number of complex manual and automated processes, which are dependent upon individual data input or review and require significant management judgment. One or more of these elements may result in errors that may not be detected and could result in a material misstatement of our consolidated financial statements. If we fail to maintain the adequacy of our internal controls over financial reporting, our business and operating results may be harmed and we may fail to meet our financial reporting obligations. If material weaknesses in our internal control are discovered or occur, our consolidated financial statements may contain material misstatements and we could be required to restate our financial results.

Our internal control over financial reporting may not prevent or detect misstatements because of its inherent limitations, including the possibility of human error, the circumvention or overriding of controls, or fraud. Even effective internal controls can provide only reasonable assurance with respect to the preparation and fair presentation of financial statements. Any failure of our internal controls could adversely affect the results of the periodic management evaluations and annual independent registered public accounting firm attestation reports regarding the effectiveness of our internal control over financial reporting. If we cannot provide reliable financial reports or prevent fraud, our business and results of operations could be harmed, investors could lose confidence in our reported financial information, and the trading price of our stock may decline.

We may be unable to utilize our net operating loss carryforwards to reduce our income taxes, which could adversely affect our future financial results.

As of December 31, 2019, we had net operating loss ("NOL"), carryforwards for U.S. federal and state tax purposes of $290.4 million and $52.1 million, respectively. As these net operating losses have not been utilized and may not be utilized prior to their expiration in the future. The utilization of the NOL and tax credit carryforwards are subject to a substantial limitation imposed by Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, and similar state provisions. We recorded deferred tax assets, net of valuation allowance, for the NOL carryforwards currently available after considering the existing Section 382 limitation. If we incur an additional limitation under Section 382, then the NOL carryforwards, as disclosed, could be reduced by the impact of any future limitation that would result in existing NOL carryforwards and tax credit carryforwards expiring unutilized and increases in future tax liabilities.

Natural disasters, terrorist attacks or other catastrophic events could harm our operations and our financial results.

Our worldwide operations could be subject to natural disasters and other business disruptions, which could harm our future revenue and financial condition and increase our costs and expenses. For example, our corporate headquarters and wafer fabrication facility in Silicon Valley, California and our Tokyo, Japan facility are located near major earthquake fault lines, and our manufacturing facilities are located in Shenzhen and Dongguan, China, areas that are susceptible to typhoons. We are not insured against many natural disasters, including earthquakes.

Similarly, our worldwide operations could be subject to secondary effects of natural disasters, terrorist attacks or other catastrophic events. Even if our facilities are not directly affected, any of these types of events could substantially disrupt the business of our suppliers or customers, which could have a material adverse effect on us.

We are subject to environmental, health and safety laws and regulations, which could subject us to liabilities, increase our costs, or restrict our business or operations in the future.

Our manufacturing operations and our products are subject to a variety of federal, state, local and international environmental, health and safety laws and regulations in each of the jurisdictions in which we operate or sell our products. Our failure to comply with present and future environmental, health or safety requirements, or the identification of contamination, could cause us to incur substantial costs, including cleanup costs, monetary fines, civil or criminal penalties, or curtailment of operations, which could have a material adverse effect on our business, financial condition and results of operations.

Additionally, increasing efforts to control emissions of greenhouse gases ("GHG"), may also impact us. Additional climate change or GHG control requirements are under consideration at the federal level in the U.S. and in China. Additional restrictions, limits, taxes, or other controls on GHG emissions could increase our operating costs and, while it is not possible to estimate the specific impact any final GHG regulations will have on our operations, there can be no assurance that these measures will not have significant additional impact on us.

Risks Related to Our Operations in China

Our business operations conducted in China are critical to our success. A significant portion of our revenue was recognized from customers for whom we shipped products to a location in China. Additionally, a substantial portion of our net property, plant and equipment, approximately 26% as of September 30, 2020, was located in China. We expect to make further investments in China in the foreseeable future. Therefore, our business, financial condition, results of operations and prospects are to a significant degree subject to economic, political, legal, and social events and developments in China.

Adverse changes in economic and political policies in China, or Chinese laws or regulations could have a material adverse effect on business conditions and the overall economic growth of China, which could adversely affect our business.

The Chinese government exercises significant control over China's economy by way of the allocation of resources, control over foreign currency-denominated obligations and monetary policy and provision of preferential treatment to particular industries or companies. Moreover, the laws, regulations and legal requirements in China, including the laws that apply to foreign-invested enterprises are relatively new and are subject to frequent changes. The interpretation and enforcement of such laws is uncertain. Any adverse changes to these laws, regulations and legal requirements, including tax laws, or their interpretation or enforcement, or the creation of new laws or regulations relating to our business, could have a material adverse effect on our business.

Furthermore, any slowdown or economic downturn, whether actual or perceived, in China could have a material adverse effect on our business, financial condition and results of operation.

Changes in China's international trade policies may adversely impact our business and operating results.

The China government has recently made statements and taken certain actions that change trade policies, including recently-imposed tariffs affecting products manufactured in the U.S. Certain of our products manufactured in our U.S. operations have been included in the tariffs imposed on imports into China from the United States. We expect these tariffs, as currently applied, will increase our cost of goods sold by approximately one percentage point. It is unknown if any additional such tariffs or retaliatory actions will be imposed or what impact they would have on us or our industry and customers. As new tariffs, legislation and/or regulations are implemented, or if existing trade agreements are renegotiated between China and the U.S. or other affected countries, such changes could have a material adverse effect on our business, financial condition, results of operations or cash flows. Furthermore, in response to such trade tensions, the Chinese government and/or individual Chinese customers may take steps to reduce their supply chain dependence on products from U.S. suppliers through their own internal developments or the selection of non-U.S. suppliers, placing us at a commercial disadvantage and potentially affecting our business.

A considerable portion of our business involves selling high speed optical components in China and any move to local Chinese vendors for these products might adversely affect our results.

In December 2017, the Chinese Government Ministry of Industry and Information Technology has announced a five-year optical component technology roadmap with the aim to reduce China's dependency on non-domestic companies for high-end optical chips and sub-components, including some products manufactured and sold by us. This announcement continues an

ongoing trend in China to build domestic industry in this area. While we believe local Chinese component suppliers do not currently have the capability to supply the highest performance optical chips and sub-components, those companies may over time develop such capability and negatively impact our revenue and financial performance if we do not continue to innovate and maintain our lead in the highest speed and performance optical components.

Uncertainties with respect to China's legal system could adversely affect the legal protection available to us.

Our operations in China are governed by Chinese laws and regulations. Our subsidiaries in China are generally subject to laws and regulations applicable to foreign investments in China and, in particular, laws applicable to wholly foreign-owned enterprises. China has not developed a fully-integrated legal system to fully address its transition to a more market-oriented economy, and recently-enacted laws and regulations may not sufficiently cover all aspects of economic activities in China. Uncertainties in the Chinese legal system may impede our ability to enforce the contracts we have entered into with our distributors, business partners, customers and suppliers. In addition, protections of intellectual property rights and confidentiality in China may not be as effective as in the U.S. or other countries or regions with more developed legal systems. All of these uncertainties could limit the legal protections available to us and could materially and adversely affect our business and operations.

Our subsidiaries in China may be subject to restrictions on dividend payments, on making other payments to us or any other affiliated company, and on borrowing or allocating tax losses among our subsidiaries.

Current Chinese regulations permit our subsidiaries in China to pay dividends only out of their accumulated profits, if any, determined in accordance with Chinese accounting standards and regulations, which are different than U.S. accounting standards and regulations. In addition, our subsidiaries in China are required to set aside at least 10% of their respective
accumulated profits each year, if any, to fund their statutory common reserves until such reserves have reached at least 50% of their respective registered capital. As of September 30, 2020 and December 31, 2019, our Chinese subsidiaries' common reserves had not reached this threshold and, accordingly, these entities are required to continue funding such reserves with accumulated net profits. Accordingly, we may not be able to move our capital easily, which could harm our business.

Restrictions on currency exchange may limit our ability to use our cash effectively.

In China, the State Administration of Foreign Exchange ("SAFE") administers restrictions on currency exchange. These restrictions may limit our ability to use cash held in RMB to fund any business activities we may have outside China or to make dividend payments in U.S. dollars. SAFE or other Chinese regulatory authorities may impose more stringent restrictions on the convertibility of the RMB, especially with respect to foreign exchange transactions. If such restrictions are imposed, our ability to adjust our capital structure or engage in foreign exchange transactions may be limited.

If the Chinese government determines that we failed to obtain approvals of, or registrations with, the requisite Chinese regulatory authority with respect to our current and past import and export of technologies, or failed to obtain the necessary licenses to file patent applications outside China for inventions made in China, we could be subject to sanctions, which could adversely affect our business.

China imposes controls on technology import and export. The term "technology import and export" is broadly defined to include, without limitation, the transfer or license of patents, software and know-how, and the provision of services in relation to technology. Depending on the nature of the relevant technology, the import and export of technology to or from China requires either approval by or registration with, the relevant Chinese governmental authorities. Additionally, the Chinese government requires the patent application for any invention made at least in part in China to be filed first in China, then undergo a government secrecy review and obtain a license before such application is filed in other countries.

If the Chinese government determines that we failed to follow required procedures and obtain the appropriate license before filing a patent application outside China for an invention made at least in part in China, our China patents on such products may be invalidated, which could have a material and adverse effect on our business and operations.

China regulation of loans and direct investment by offshore holding companies to China entities may delay or prevent us from using our cash proceeds to make loans or additional capital contributions to our China subsidiaries.

From time to time, we may make loans or additional capital contributions to our China subsidiaries. We cannot assure that we will be able to obtain these government registrations or approvals on a timely basis, if at all, with respect to our future loans or capital contributions to our China subsidiaries. If we fail to receive such registrations or approvals, our ability to capitalize our China subsidiaries may be negatively affected, which could materially and adversely affect our liquidity and ability to fund and expand our business.

Dividends paid to us by our Chinese subsidiaries may be subject to Chinese withholding tax.

The Enterprise Income Tax Law and the implementation regulations provide that a 10% withholding tax may apply to dividends payable to investors that are "non-resident enterprises," to the extent such dividends are derived from sources within China and in the absence of any tax treaty that may reduce such withholding tax rate.

Our contractual arrangements with our subsidiaries in China may be subject to audit or challenge by the Chinese tax authorities, and a finding that our subsidiaries in China owe additional taxes could substantially reduce our net income and the value of our stockholders' investment.

Under the applicable laws and regulations in China, arrangements and transactions among related parties may be subject to audit or challenge by the Chinese tax authorities. We would be subject to adverse tax consequences if the Chinese tax authorities were to determine that the contracts with or between our subsidiaries were not executed on an arm's length basis, and as a result the Chinese tax authorities could require that our Chinese subsidiaries adjust their taxable income upward for Chinese tax purposes. Such an adjustment could adversely affect us by increasing our tax expenses.

We may have difficulty maintaining adequate management, legal and financial controls in China, which we are required to do in order to comply with Section 404 of the Sarbanes-Oxley Act and securities laws, and which could cause a material adverse impact on our consolidated financial statements, the trading price of our common stock and our business.

Our subsidiaries in China are generally subject to our overall obligations to maintain strong corporate governance, internal controls and computer, financial and other control systems. We may have difficulty hiring and retaining employees in China with experience and expertise relating to accounting principles generally accepted in the U.S. and U.S. public-company reporting requirements. These issues could make it more difficult for us to establish and maintain adequate internal control over our financial reporting, which could then result in errors that could cause a material misstatement of our consolidated financial statements.

We may be exposed to liabilities under the FCPA and Chinese anti-corruption laws, and any determination that we violated these laws could have a material adverse effect on our business.

We are subject to the Foreign Corrupt Practices Act of 1977 ("FCPA") and other laws that prohibit improper payments or offers of payments to foreign governments and their officials and political parties by U.S. persons and issuers as defined by the statute, for the purpose of obtaining or retaining business. We have operations, agreements with third parties and we make significant sales in China. China also strictly prohibits bribery of government officials. Our activities in China create the risk of unauthorized payments or offers of payments by our employees, consultants, sales agents or distributors, even though they may not always be subject to our control. Although we have implemented policies and procedures to discourage these practices by our employees, our existing safeguards and any future improvements may prove to be less than effective, and our employees, consultants, sales agents or distributors may engage in conduct for which we might be held responsible. Violations of the FCPA or anti-corruption laws in other countries may result in severe criminal or civil sanctions, and we may be subject to other liabilities, which could negatively affect our business, operating results and financial condition.

Risks Related to Ownership of Our Common Stock

Our stock price may be volatile due to fluctuation of our financial results from quarter-to-quarter and other factors.

Our quarterly revenue and results of operations have varied in the past and may continue to vary significantly from quarter to quarter. This variability may lead to volatility in our stock price as research analysts and investors respond to these quarterly fluctuations. These fluctuations are due to numerous factors, including:

- fluctuations in demand for our products;
- the timing, volume and product mix of sales of our products;
- changes in our pricing and sales policies, particularly in the first quarter of the year, or changes in the pricing and sales policies of our competitors;
- changes in government export and import controls that restrict our sales to key customers;
- our ability to design, manufacture and deliver products to our customers in a timely and cost-effective manner and that meet customer requirements;
- quality control, yield or other output-related problems in our manufacturing operations;
- our ability to timely obtain adequate quantities of the components used in our products;
- length and variability of the sales cycles of our products;
- unanticipated increases in costs or expenses; and
- fluctuations in foreign currency exchange rates.

The foregoing factors are difficult to forecast, and these, as well as other factors, could materially adversely affect our quarterly and annual results of operations in the future. In addition, a significant amount of our operating expenses is relatively fixed in nature due to our internal manufacturing, research and development, sales and general administrative efforts. Any failure to adjust spending quickly enough to compensate for a revenue shortfall could magnify the adverse impact of such revenue shortfall on our results of operations. Moreover, our results of operations may not meet our announced financial outlook or the expectations of research analysts or investors, in which case the price of our common stock could decrease significantly. There can be no assurance that we will be able to successfully address these risks.

The market price of our common stock could be subject to wide fluctuations in response to, among other things, the risk factors described in this section of this Quarterly Report on Form 10-Q, and other factors beyond our control, such as fluctuations in the valuation of companies perceived by investors to be comparable to us.

The stock markets have experienced price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions, such as recessions, sovereign debt or liquidity issues, interest rate changes or international currency fluctuations, may negatively affect the market price of our common stock.

In the past, many companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may become the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

Our charter documents and Delaware law could prevent a takeover that stockholders consider favorable and could also reduce the market price of our stock.

Our amended and restated certificate of incorporation and our amended and restated bylaws contain provisions that could delay or prevent a change in control of our company. These provisions could also make it more difficult for stockholders to elect directors and take other corporate actions. These provisions include:

- providing for a classified board of directors with staggered, three-year terms;
- not providing for cumulative voting in the election of directors;
- authorizing our board of directors to issue, without stockholder approval, preferred stock rights senior to those of common stock;
- prohibiting stockholder action by written consent;
- limiting the persons who may call special meetings of stockholders; and
- requiring advance notification of stockholder nominations and proposals.

In addition, we are governed by the provisions of Section 203 of the Delaware General Corporate Law. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding common stock, from engaging in certain business combinations without approval of substantially all of our stockholders for a certain period of time.

These and other provisions in our amended and restated certificate of incorporation, our amended and restated bylaws and under Delaware law could discourage potential takeover attempts, reduce the price that investors might be willing to pay for shares of our common stock in the future and result in the market price being lower than it would be without these provisions.

****Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware will be the exclusive forum for certain disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, or employees.***

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the sole and exclusive forum for the following types of actions or proceedings:

- any derivative action or proceeding brought on our behalf;
- any action asserting a breach of fiduciary duty;
- any action asserting a claim against us arising under the Delaware General Corporation Law; and
- any action asserting a claim against us that is governed by the internal-affairs doctrine.

This provision would not apply to suits brought to enforce a duty or liability created by the Exchange Act. Furthermore, Section 22 of the Securities Act of 1933, as amended, creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims.

This exclusive forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees, which may discourage lawsuits against us and our directors, officers and other employees. If a court were to find the exclusive-forum provision in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could seriously harm our business.

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

None.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

Exhibit no.	Exhibit Description	Form	SEC File No.	Exhibit	Filing Date	Filed herewith
3.1	Amended and Restated Certificate of Incorporation of NeoPhotonics Corporation.	Form 8-K	001-35061	3.1	February 10, 2011	
3.2	Amended and Restated Bylaws of NeoPhotonics Corporation.	Form S-1/A	333-166096	3.5	November 22, 2010	
10.1	2020 Bonus Program					X
31.1	Certification pursuant to Rule 13a-14(a)/15d-14(a).					X
31.2	Certification pursuant to Rule 13a-14(a)/15d-14(a)					X
32.1	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
101.INS	Inline XBRL Instance Document.					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document.					X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.					X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.					X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.					X
104	Cover Page Interactive Data File (formatted in Inline XBRL and contained in Exhibit 101)					

SIGNATURE

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.

NeoPhotonics Corporation

Date:	November 2, 2020	By:	/S/ ELIZABETH EBY
			Elizabeth Eby
			Senior Vice President, Finance and Chief Financial Officer
			(Principal Financial and Accounting Officer)

Exhibit 10.1

2020 Target Bonus Program

On July 20, 2020, the Compensation Committee (the "Compensation Committee") of the Board of Directors approved a 2020 incentive bonus program (the "2020 Bonus Program") for the Company's executive officers and other employees. The Compensation Committee structured target bonuses for the fiscal year 2020 so that payouts would be determined based in part on achievement against corporate objectives, including:

- Non-GAAP net income from operations for the fiscal year 2020;
- Free cash flow for the fiscal year 2020; and
- Completion of research and development product milestones in fiscal year 2020.

For target bonuses for the fiscal year 2020, the Compensation Committee established performance goals for each of the above metrics that are aligned with corporate objectives. While these various performance goals were selected, they are merely non-binding guidelines to be used as one factor in determining the actual bonuses earned. For executives other than the Company's chief executive officer, individual performance goals will also be included in the 2020 Bonus Program.

It is expected that, in the first quarter of 2021, the Compensation Committee will review the Company's fiscal year 2020 corporate performance against each of the corporate goals and other aspects of corporate and individual performance to determine any actual bonus awards for performance related to the fiscal year 2020.

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Timothy S. Jenks, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of NeoPhotonics Corporation;

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.

Date: November 2, 2020

/S/ TIMOTHY S. JENKS

Timothy S. Jenks
President, Chief Executive Officer and
Chairman of the Board of Directors
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Elizabeth Eby, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of NeoPhotonics Corporation;

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.

Date: November 2, 2020

/S/ ELIZABETH EBY

Elizabeth Eby
Senior Vice President, Finance and Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
AND CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C SECTION 3150, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the U.S. Code (18 U.S.C. § 1350), Timothy S. Jenks, President, Chief Executive Officer and Chairman of the Board of Directors of NeoPhotonics Corporation (the "Company"), and Elizabeth Eby, Senior Vice President, Finance and Chief Financial Officer of the Company, each hereby certifies that, to the best of his/her knowledge:

1. The Company's Quarterly Report on Form 10-Q for the period ended September 30, 2020, to which this Certification is attached as Exhibit 32.1 (the "Quarterly Report") fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act, as amended; and

2. The information contained in the Quarterly Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned have set their hands hereto as of the 2nd day of November, 2020.

/S/ TIMOTHY S. JENKS	/S/ ELIZABETH EBY
Timothy S. Jenks	Elizabeth Eby
President, Chief Executive Officer and Chairman of the Board of Directors	Senior Vice President, Finance and Chief Financial Officer
(Principal Executive Officer)	(Principal Financial and Accounting Officer)

This certification accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of NeoPhotonics Corporation under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing.