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 March 31, 2021

OR

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

For the transition period from to

Commission File Number: 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 April 23, 2021, there were approximately 51,329,729 shares of the registrant's Common Stock outstanding.

NEOPHOTONICS CORPORATION
For the Quarter Ended March 31, 2021
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PART I. FINANCIAL INFORMATION

ITEM 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited)

	As of	
(In thousands, except par value data)	**March 31, 2021**	**December 31, 2020**
ASSETS		
Current assets:		
Cash and cash equivalents	$ 83,068	$ 95,117
Short-term investments	27,671	27,669
Restricted cash	488	489
Accounts receivable, net	39,975	45,232
Inventories	46,373	46,901
Prepaid expenses and other current assets	15,425	20,173
Total current assets	213,000	235,581
Property, plant and equipment, net	60,977	66,765
Operating lease right-of-use assets	13,315	13,823
Purchased intangible assets, net	1,280	1,468
Goodwill	1,115	1,115
Other long-term assets	4,808	4,912
Total assets	$ 294,495	$ 323,664
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 37,538	$ 43,539
Current portion of long-term debt	3,026	3,232
Accrued and other current liabilities	32,672	42,053
Total current liabilities	73,236	88,824
Long-term debt, net of current portion	29,047	30,327
Operating lease liabilities, noncurrent	13,974	14,522
Other noncurrent liabilities	8,580	9,584
Total liabilities	124,837	143,257
Commitments and contingencies (Note 11)		
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 March 31, 2021, 51,009 shares issued and outstanding; at December 31, 2020, 50,457 shares issued and outstanding	128	126
Additional paid-in capital	599,744	597,460
Accumulated other comprehensive income (loss)	(608)	1,735
Accumulated deficit	(429,606)	(418,914)
Total stockholders' equity	169,658	180,407
Total liabilities and stockholders' equity	$ 294,495	$ 323,664

See accompanying Notes to Condensed Consolidated Financial Statements.

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)

	Three Months Ended March 31,	
(In thousands, except per share data)	**2021**	**2020**
Revenue	$ 60,926	$ 97,401
Cost of goods sold	47,587	67,675
Gross profit	13,339	29,726
Operating expenses:		
Research and development	13,098	11,884
Sales and marketing	3,865	3,659
General and administrative	7,294	6,789
Acquisition and asset sale related costs	163	12
Total operating expenses	24,420	22,344
Income (loss) from operations	(11,081)	7,382
Interest income	105	98
Interest expense	(227)	(378)
Other income, net	1,143	1,198
Total interest and other income, net	1,021	918
Income (loss) before income taxes	(10,060)	8,300
Income tax provision	(632)	(1,993)
Net income (loss)	$ (10,692)	$ 6,307
Basic net income (loss) per share	$ (0.21)	$ 0.13
Diluted net income (loss) per share	$ (0.21)	$ 0.12
Weighted average shares used to compute basic net income (loss) per share	50,717	48,615
Weighted average shares used to compute diluted net income (loss) per share	50,717	50,617

See accompanying Notes to Condensed Consolidated Financial Statements.

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

(in thousands)	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020
Net income (loss)	$ (10,692)	$ 6,307
Other comprehensive loss:		
Foreign currency translation adjustments, net of zero tax	(2,343)	(1,970)
Total other comprehensive loss	(2,343)	(1,970)
Comprehensive income (loss)	$ (13,035)	$ 4,337

See accompanying Notes to Condensed Consolidated Financial Statements.

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

Three Months Ended March 31, 2021	**Common stock**		**Additional paid-in capital**	**Accumulated other comprehensive income (loss)**	**Accumulated deficit**	**Total stockholders' equity**
(In thousands)	**Shares**	**Amount**				
Balances at December 31, 2020	50,457	$ 126	$ 597,460	$ 1,735	$ (418,914)	$ 180,407
Comprehensive loss	—	—	—	(2,343)	(10,692)	(13,035)
Issuance of common stock upon exercise of stock options	199	—	1,109	—	—	1,109
Issuance of common stock for vested restricted stock units	503	2	(2)	—	—	—
Tax withholding related to vesting of restricted stock units	(150)	—	(1,835)	—	—	(1,835)
Stock-based compensation costs	—	—	3,012	—	—	3,012
Balances at March 31, 2021	51,009	$ 128	$ 599,744	$ (608)	$ (429,606)	$ 169,658

Three Months Ended March 31, 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)	—	—	—	(1,970)	6,307	4,337
Issuance of common stock upon exercise of stock options	52	—	231	—	—	231
Issuance of common stock for vested restricted stock units	114	1	—	—	—	1
Tax withholding related to vesting of restricted stock units	(30)	—	(219)	—	—	(219)
Stock-based compensation costs	—	—	2,682	—	—	2,682
Balances at March 31, 2020	48,662	$ 122	$ 585,198	$ (9,841)	$ (408,241)	$ 167,238

See accompanying Notes to Condensed Consolidated Financial Statements.

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

(In thousands)	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020
Cash flows from operating activities		
Net income (loss)	$ (10,692)	$ 6,307
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:		
Depreciation and amortization	6,381	6,674
Stock-based compensation expense	3,277	2,518
Deferred taxes	344	1,214
Others	108	86
Gain on sale of assets and other write-offs	(17)	(25)
Write-down of inventories	2,267	3,011
Amortization of operating lease right-of-use assets	508	462
Foreign currency remeasurement	(968)	(1,118)
Change in operating assets and liabilities:		
Accounts receivable	5,255	7,209
Inventories	(2,260)	(2,699)
Prepaid expenses and other assets	3,441	(469)
Accounts payable	(5,526)	523
Accrued and other liabilities	(11,062)	1,233
Net cash provided by (used in) operating activities	(8,944)	24,926
Cash flows from investing activities		
Purchase of property, plant and equipment	(1,908)	(2,578)
Proceeds from sale of property, plant and equipment and other assets	358	109
Purchase of marketable securities	(13,503)	(24)
Proceeds from sale of marketable securities	13,501	—
Net cash used in investing activities	(1,552)	(2,493)
Cash flows from financing activities		
Proceeds from exercise of stock options and issuance of stock under ESPP	1,548	231
Tax withholding on restricted stock units	(1,835)	(219)
Repayment of bank loans	(794)	(1,772)
Repayment of finance lease liabilities	(24)	(21)
Net cash used in financing activities	(1,105)	(1,781)
Effect of exchange rates on cash, cash equivalents and restricted cash	(449)	(254)
Net increase (decrease) in cash, cash equivalents and restricted cash	(12,050)	20,398
Cash, cash equivalents and restricted cash at the beginning of the period	95,606	81,439
Cash, cash equivalents and restricted cash at the end of the period	$ 83,556	$ 101,837
Supplemental disclosure of non-cash investing and financing activities:		
Unpaid property, plant and equipment in accounts payable	$ 862	$ 1,130

See accompanying Notes to Condensed Consolidated Financial Statements.

NeoPhotonics Corporation Notes to Condensed Consolidated Financial Statements
(Unaudited)

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 March 31, 2021 and for the three months ended March 31, 2021 and 2020, 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 for the fiscal year ended December 31, 2020. The results of operations for the three months ended March 31, 2021 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 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 7.

Concentration

In the three months ended March 31, 2021, four customers were each greater than 10% and the Company's total revenue and the Company's top five customers represented approximately 80% of the Company's total revenue. In the three months ended March 31, 2020, two customers were greater than 10% of the Company's total revenue. Huawei accounted for approximately 52% 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.

As of March 31, 2021, four customers accounted for a total of 72% of the Company's total accounts receivable. As of December 31, 2020, three customers accounted for a total of 65% of the Company's total 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. 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.

Due to the additional restrictions imposed by the U.S. Bureau of Industry and Security ("BIS"), an agency of the U.S. Department of Commerce, which became effective in September 2020, and the expected loss of business from Huawei, the

Company performed a recoverability test in the third and fourth quarters of 2020 and determined there was no impairment of long-lived assets.

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 December 2019, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update No. 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes (ASU 2019-12), which simplifies the accounting for income taxes. This guidance became effective for fiscal years beginning after December 15, 2020. The Company adopted this ASU in the first quarter of 2021 and the adoption of this standard did not have a material impact on the Company's consolidated financial statements.

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 the 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):

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

	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020
High Speed Products	$ 57,273	$ 89,850
Network Products and Solutions	3,653	7,551
Total revenue	$ 60,926	$ 97,401

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 March 31, 2021	Three Months Ended March 31, 2020
China	$ 15,244	$ 58,909
Americas	5,191	18,340
Rest of world	40,491	20,152
Total revenue	$ 60,926	$ 97,401

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 March 31, 2021 and December 31, 2020.

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 March 31, 2021 and December 31, 2020.

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 March 31, 2021 and December 31, 2020 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 March 31, 2021	Three Months Ended March 31, 2020
Numerator:		
Net income (loss)	$ (10,692)	$ 6,307
Denominator:		
Weighted average shares used to compute per share amount:		
Basic	50,717	48,615
Diluted	50,717	50,617
Basic net income (loss) per share	$ (0.21)	$ 0.13
Diluted net income (loss) per share	$ (0.21)	$ 0.12

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 March 31,	
	2021	2020
Employee stock options	1,897	975
Restricted stock units	3,365	42
Market-based restricted stock units	305	612
Performance-based restricted stock units	90	—
Employee stock purchase plan	344	344
	6,001	1,973

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):

	March 31, 2021	December 31, 2020
Cash and cash equivalents	$ 83,068	$ 95,117
Restricted cash	488	489
Total cash, cash equivalents and restricted cash shown in the statement of cash flows	$ 83,556	$ 95,606

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 March 31, 2021				As of December 31, 2020			
	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	$ 27,671	$ —	$ —	$ 27,671	$ 27,669	$ —	$ —	$ 27,669
Reported as:								
Short-term investments				$ 27,671				$ 27,669

As of March 31, 2021 and December 31, 2020, 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 months ended March 31, 2021 and 2020. The Company did not recognize any impairment losses on its marketable securities during the three months ended March 31, 2021 or 2020. As of March 31, 2021, 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 March 31, 2021				As of December 31, 2020			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets								
Short-term investments:								
Money market funds	$ 27,671	$ —	$ —	$ 27,671	$ 27,669	$ —	$ —	$ 27,669
Other long-term assets:								
Mutual funds held in Rabbi Trust	$ 826	$ —	$ —	$ 826	$ 810	$ —	$ —	$ 810

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 March 31, 2021. 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 March 31, 2021 and December 31, 2020.

There were no liabilities that are measured at fair value on a recurring basis as of March 31, 2021.

Assets and Liabilities Measured at Fair Value on a Nonrecurring Basis

As of March 31, 2021 and December 31, 2020 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. Balance sheet components

Accounts receivable, net

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

	March 31, 2021	December 31, 2020
Accounts receivable	$ 40,020	$ 45,277
Allowance for doubtful accounts	(45)	(45)
	$ 39,975	$ 45,232

Inventories

Inventories consist of the following (in thousands):

	March 31, 2021	December 31, 2020
Raw materials	$ 24,741	$ 25,620
Work in process	10,348	9,196
Finished goods(1)	11,284	12,085
	$ 46,373	$ 46,901

(1) Finished goods inventory at customer vendor managed inventory locations was $1.4 million and $1.7 million as of March 31, 2021 and December 31, 2020, respectively.

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

Prepaid expenses and other current assets

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

	March 31, 2021	December 31, 2020
Transition services agreement receivable (refer to Note 11)	$ —	$ 5,933
Prepaid taxes and taxes receivable	6,008	6,137
Receivables due from suppliers	6,056	4,891
Deposits and other prepaid expenses	2,983	2,417
Other receivable	378	795
	$ 15,425	$ 20,173

Purchased intangible assets, net

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

	March 31, 2021			December 31, 2020		
	Gross Assets	Accumulated Amortization	Net Assets	Gross Assets	Accumulated Amortization	Net Assets
Technology and patents	$ 37,593	$ (37,154)	$ 439	$ 37,637	$ (37,021)	$ 616
Customer relationships	15,399	(15,399)	—	15,487	(15,487)	—
Leasehold interest	1,299	(458)	841	1,304	(452)	852
	$ 54,291	$ (53,011)	$ 1,280	$ 54,428	$ (52,960)	$ 1,468

For the three months ended March 31, 2021 and 2020, amortization expense relating to technology and patents is included within cost of goods sold and totaled $0.2 million in each period.

The estimated future amortization expense of purchased intangible assets as of March 31, 2021, was as follows (in thousands):

2021 (remaining nine months)	$ 446
2022	10
2023	10
2024	10
2025	10
Thereafter	794
	$ 1,280

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

Accrued and other current liabilities

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

	March 31, 2021	December 31, 2020
Employee-related	$ 22,663	$ 19,656
Transition services agreement payables (refer to Note 11)	823	9,708
Operating lease liabilities, current	2,143	2,128
Income and other taxes payable	1,289	1,590
Accrued warranty	1,096	1,111
Other accrued expenses	4,658	7,860
	$ 32,672	$ 42,053

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 March 31,	
	2021	2020
Beginning balance	$ 1,111	$ 712
Warranty accruals	61	225
Settlements	(76)	(188)
Ending balance	$ 1,096	$ 749

Other noncurrent liabilities

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

	March 31, 2021	December 31, 2020
Pension and other employee-related	$ 3,671	$ 3,844
Asset retirement obligations	3,825	3,810
Transition services agreement payables (See Note 11)	—	823
Deferred income tax liabilities	500	501
Government grant	584	606
	$ 8,580	$ 9,584

Note 7. Restructuring Charges

Restructuring charges

On August 17, 2020, BIS 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 its export control authority. 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.

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

	Employee Severance	Other	Total
Restructuring obligations December 31, 2020	$ 97	$ 42	$ 139
Charges	—	—	—
Cash payments	(64)	(42)	(106)
Restructuring obligations March 31, 2021	$ 33	$ —	$ 33

Note 8. Debt

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

	March 31, 2021		December 31, 2020	
	Carrying Amount	Interest Rate	Carrying Amount	Interest Rate
Long-term debt, current and noncurrent:				
Borrowing under Wells Fargo Credit Facility	$ 21,136	1.96 %	$ 21,030	2.01 %
Mitsubishi Bank loans	6,655	1.07% -1.47%	7,662	1.05%-1.45%
Mitsubishi Bank and Yamanashi Chuo Bank loan	4,388	1.08 %	5,002	1.07 %
Total long-term debt	32,179		33,694	
Finance lease liability	165		189	
Unaccreted discount and issuance costs	(271)		(324)	
Total long-term debt, net of unaccreted discount and issuance costs	$ 32,073		$ 33,559	
Reported as:				
Current portion of long-term debt	$ 3,026		$ 3,232	
Long-term debt, net of current portion	29,047		30,327	
Total long-term debt, net of unaccreted discount and issuance costs	$ 32,073		$ 33,559	

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 March 31, 2021, 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 ($18.3 million) for short-term loans at varying interest rates, or up to approximately RMB 240.0 million ($36.6 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 ($4.6 million) for short-term loans at varying interest rates,

or up to approximately RMB 60.0 million ($9.2 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 March 31, 2021 and December 31, 2020.

As of March 31, 2021 and December 31, 2020, there were no non-interest bearing bank acceptance drafts issued in connection with our notes payable to our suppliers in China under these line of credit facilities. There were no compensating balances relating to these credit facilities as of March 31, 2021 and December 31, 2020, 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, to 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 "Entity List" published by BIS. 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 March 31, 2021 and December 31, 2020. As of March 31, 2021, the outstanding balance under the Credit Facility was $21.1 million and the weighted average rate under the LIBOR option was 1.96%. The remaining borrowing capacity as of March 31, 2021 was $9.0 million, of which $5.0 million is required to be maintained as unused borrowing capacity.

During the three months ended March 31, 2021, $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 $9.0 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 March 31, 2021 and December 31, 2020. Outstanding principal balance for the Mitsubishi Term Loans was 391.7 million JPY (approximately $3.5 million) as of March 31, 2021.

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 $6.2 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 March 31, 2021 and December 31, 2020. The loan was available from March 31, 2017 to March 30, 2018 and 690.0 million JPY (approximately $6.2 million) under this loan was fully drawn in March 2017. Outstanding principal balance for the 2017 Mitsubishi Bank Loan was approximately 345.0 million JPY (approximately $3.1 million) as of March 31, 2021.

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 $7.7 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 March 31, 2021 and December 31, 2020. Outstanding principal balance for the Mitsubishi Bank and Yamanashi Chuo Bank Loan was approximately 485.7 million JPY (approximately $4.4 million) as of March 31, 2021.

As of March 31, 2021, maturities of total long-term debt were as follows (in thousands):

2021 (remaining nine months)	$ 2,376
2022	24,244
2023	3,039
2024	2,260
2025	425
	$ 32,344

Note 9. 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 March 31, 2021 and December 31, 2020, 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 March 31,	
	2021	2020
Operating lease cost	$ 774	$ 759
Variable and short-term lease cost	629	403
Total lease cost	$ 1,403	$ 1,162

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

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

	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020
Supplemental cash flow information		
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 878	$ 718
Weighted average remaining lease term		
Operating leases	6.2 years	7.2 years
Weighted average discount rate		
Operating leases	6.5 %	6.4 %

Future minimum lease payments under non-cancelable leases as of March 31, 2021 were as follows (in thousands):

	Operating Leases
2021 (remaining nine months)	$ 2,347
2022	3,134
2023	3,074
2024	2,944
2025	3,021
Thereafter	5,241
Total future minimum lease payments	19,761
Less imputed interest	(3,644)
Total	$ 16,117

As of March 31, 2021 and December 31, 2020, the future minimum lease payments are captured in the Company's Consolidated Balance Sheets as follows:

Operating Leases:	March 31, 2021	December 31, 2020
Accrued and other current liabilities	$ 2,143	$ 2,128
Operating lease liabilities, noncurrent	13,974	14,522
Total	$ 16,117	$ 16,650

Note 10. Japan pension plan

The pension liability related to the Company’s Retirement Allowance Plan (“RAP”) in Japan as of March 31, 2021 was $2.8 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, 2020 was $3.0 million, of which $0.7 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 months ended March 31, 2021 and 2020.

Note 11. 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), except for the matter discussed in the following paragraph, that 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.

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, 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 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 was involved in a series of litigations and arbitrations which arose out of the 2017 sale by NeoChina of certain low speed transceiver assets to APAT.

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-owned subsidiary of APAT OE, $10,031,515 plus $500,000 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.

In accordance with the settlement agreement, the first payment from APAT OE to the Company occurred in November 2020. All other payments between the parties, except the final payment, were completed in the first quarter of 2021 with the final payment by the Company to APAT expected to occur in first quarter of 2022.

The settlement award of RMB 58,136,669 (approximately $8.5 million) payable by APAT OE to the Company represents repayment of the net receivables owed to the Company at the settlement date and partial recovery of previously recognized losses incurred by the Company of approximately $3.0 million primarily related to a litigation settlement loss with a vendor for committed purchases of certain production materials for which the liabilities were assumed by APAT OE in the Asset Purchase Agreement entered into with the Company in December 2016 and the legal fees incurred for the lawsuits with APAT OE during 2018, 2019 and 2020.

At March 31, 2021, the amount payable by the Company to APAT OE under the settlement agreement is approximately $0.8 million, and is included in Accrued and Other Liabilities in the caption "Transition Services Agreement Payable" (See Note 6). APAT OE has repaid the full amount of the Transition Services Agreement Receivable owed to the Company and there is currently no balance remaining as of March 31, 2021 (See Note 6).

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 12. Stockholders' equity

Common Stock

As of March 31, 2021, the Company had reserved 7,504,431 common stock for issuance under its equity incentive plans and 1,391,002 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 Income (Loss)
Balance as of December 31, 2020	$ 1,951	$ (216)	$ 1,735
Other comprehensive loss, net of taxes of zero	(2,343)	—	(2,343)
Balances at March 31, 2021	$ (392)	$ (216)	$ (608)

No material amounts were reclassified out of accumulated other comprehensive loss during the three months ended March 31, 2021 and 2020 for realized gains or losses on available-for-sale securities.

Accumulated Deficit

Approximately $10.0 million of the Company’s retained earnings within its total accumulated deficit as of December 31, 2020 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 13. 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 March 31, 2021 and December 31, 2020, the Company's consolidated subsidiaries had $11.3 million and $11.4 million, respectively, of restricted net assets. This compares to the Company's consolidated net assets of $169.7 million and $180.4 million as of March 31, 2021 and December 31, 2020, respectively, which consisted of (in thousands):

	March 31, 2021	December 31, 2020
Cash restricted in China as a result of unfulfilled government grants	$ 451	$ 452
China earnings restricted to fund statutory common reserves in China	9,973	10,010
Loan agreements in Japan requiring local subsidiaries to maintain minimum net asset levels	903	969
Total restricted net assets in the Company's consolidated subsidiaries	$ 11,327	$ 11,431

Note 14. Stock-based compensation

The following table summarizes the stock-based compensation expense recognized in the three months ended March 31, 2021 and 2020 (in thousands):

	Three Months Ended March 31,	
	2021	2020
Cost of goods sold	$ 548	$ 537
Research and development	862	758
Sales and marketing	554	530
General and administrative	1,313	693
	$ 3,277	$ 2,518

As of March 31, 2021 and December 31, 2020, stock-based compensation capitalized in inventories totaled $0.4 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 three months ended March 31, 2021:

	Stock Options	Restricted Stock Units
	Number of Shares	Number of Units
Balance as of December 31, 2020	2,096,917	3,621,681
Granted	—	6,950
Exercised/Converted	(199,607)	(199,394)
Cancelled/Forfeited	(59)	(63,888)
Balances at March 31, 2021	1,897,251	3,365,349

At March 31, 2021, the Company had $0.2 million of unrecognized stock-based compensation expense for stock options, net of estimated forfeitures. At March 31, 2021, the Company had $13.3 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 March 31, 2021, the Company has granted 705,000 shares of market-based RSUs and 305,250 shares 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. A total of 303,250 market-based RSUs have vested and 96,500 market-based RSUs have been cancelled through March 31, 2021. As of March 31, 2021, the Company had $0.7 million of unrecognized stock-based compensation expense for these RSUs, net of estimated forfeitures. 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 through March 31, 2021.

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 months ended March 31, 2021 or 2020. As of March 31, 2021 and December 31, 2020, there were 150,000 SAUs outstanding, respectively, and related SAU liabilities were $1.1 million and $0.7 million, respectively.

Employee Stock Purchase Plan (ESPP)

The Company did not issue any shares under the ESPP during the three months ended March 31, 2021. As of March 31, 2021, there was $0.4 million of unrecognized stock-based compensation expense for employee stock purchase rights that will be recognized over the remaining offering period through November 2021. 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 15. Income taxes

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

	Three Months Ended March 31,	
	2021	2020
Income tax provision	$ (632)	$ (1,993)

The Company’s income tax provision in the three months ended March 31, 2021 was primarily related to income taxes on earnings from its foreign tax jurisdictions. The Company’s income tax provision in the three months ended March 31, 2020 was due to income taxes on earnings from operations in the U.S. and foreign tax jurisdictions. The decrease in income tax expense for the three months ended March 31, 2021, as compared to the same period in 2020 was primarily due to decreased earnings from its U.S. operations for the three months ended March 31, 2021.

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 March 31, 2021, 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, 2020.

On March 27, 2020, the U.S. enacted the Coronavirus Aid, Relief, and Economic Security (“CARES”) Act which provided certain tax relief measures. On December 27, 2020, the U.S. enacted the Consolidated Appropriations Act of 2021 (CAA) which extended and expanded certain tax relief measures created by the CARES Act. On March 11, 2021, the U.S. enacted the American Rescue Plan Act of 2021 (ARPA). Theses legislations have not had a material impact on the Company's operations to date and the Company will continue to evaluate the impact they may have on its future business.

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 March 31, 2021 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, 2020 included in our Annual Report on Form 10-K.. 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 March 31, 2021 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 March 31, 2021 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 for the year ended December 31, 2020, as filed with the SEC on February 25, 2021. 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 optoelectronic products that transmit and receive high-speed digital optical signals that connect the Cloud and hyperscale data center and telecom networks. We are the world's primary supplier of ultra-pure light tunable lasers that are required for the highest speed-over-distance fiber optic communications links. "Cloud " refers to the vast constellation of servers that are located in data centers around the world and which are accessed through the internet, along with the associated software and data bases that run on them and the communications links that interconnect them.

Our products deliver, for each wavelength, 400 Gigabits per Second ("G"), 600G and 800G and beyond data rates. We sell high performance integrated pluggable coherent optical transceiver modules which directly transmit high-speed data using industry standard Internet Protocol ("IP") coding over Dense Wavelength Division Multiplexing ("DWDM"), greatly simplifying data networks, thereby reducing costs and power consumption.

With adoption of coherent transmission using pluggable high-speed optical modules in Cloud and hyperscale data centers, we believe our total addressable market is rapidly expanding.

Our recently introduced 400ZR and 400ZR+ pluggable transceiver modules enable new, lower cost network architectures using IP over DWDM protocols that addresses new, rapidly expanding major market segments. Such modules can replace a chassis-based line card with the same much smaller form factor as a pluggable client side transceiver, so that interconnects between data centers can be as simple as interconnects within a data center.

Over the past decade we have been first to deliver commercial mass production volumes of coherent optical components for each of the speed advances as maximum speeds per wavelength, or color, have advanced from 100G to 200G, 400G, 600G and now 800G.

We believe that we are well positioned to continue world market leadership in these laser, component and module solutions based on our leadership in the ultra-pure light lasers which power them and our comprehensive technologies for Silicon Photonics, Indium Phosphide, Photonic Integrated Circuits ("PICs") and optical ICs.

Our high-speed optical communications products use coherent technology to encode optical signals from electronic signals for transmission and to decode it for receiving. Ultra high speeds require 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 that we are a global leader in coherent transmission technology, based on our achieved data rates or speeds, over distance, leadership in ultra-pure color lasers and optical integration for miniaturization and low power consumption.

Coherent has become the technology of choice for high speed over distance data transmission in Cloud infrastructure and data center interconnection, in addition to telecom networks. The move to 400G and above transmission speeds is a fulcrum for the industry as it marks the next major step-up in speed. 400G is becoming the basic building block for network deployments for all distances greater than 40km, all of which require coherent transmission technology.

We sell to virtually all of the leading telecom network equipment companies such as Acacia Communications, ADVA, Ciena, Cisco Systems, Fiberhome, Fujitsu, Huawei, Infinera, NEC, Nokia and ZTE. Note that due to restrictions imposed by BIS on Huawei, shipments to Huawei and its affiliates were minimal in the first quarter of 2021.

We believe that use cases for 400ZR and 400ZR+ system-level modules will extend across data center interconnect to backhaul for 5G wireless networks and to metro networks. The lower power, higher port density and interoperability of pluggable solutions drive this forecast. These architectures are driven by hyperscale operators and we believe they will be adopted in metro telecom networks using 400ZR+ pluggable modules in areas where reach and density make it the clear economic winner with much lower total costs. Furthermore, we believe that our high performance optics combined with next generation digital signal processors ("DSPs") will enable 800ZR and 800ZR+ pluggable modules within the next few years.

We believe that substantially lower costs associated with 400ZR+ pluggable modules will drive the extension of coherent modules into metro networks through elimination of network equipment proprietary chassis, and reduction in the number of Reconfigurable Optical Add Drop Multiplexers ("ROADMs") that are required in current network architectures.

Our High Speed Products for data rates of 100G, 400G, 600G, 800G and above were 94% of our revenues for the three months ended March 31, 2021 compared to 92% for the quarter ending March 31, 2020. Our sales concentration in High Speed Products has increased each year for more than 10 years. “High Speed Products” refers to transmitter and receiver products as well as switching and other component products for 100G and beyond optical transmission applications. Our high speed 100G and beyond products are based on our Advanced Hybrid Photonic Integration technologies, which support 100 gigabits or more per second of information transmitted over a single channel. Our 400G and above products are a subset of our High Speed Products.

Products capable of data rates of 400G and above have accounted for more than 10% of our revenue since 2018 and have nearly doubled from $44 million in 2019 to $86 million in 2020. Revenue from products for 400G and above applications further increased to $31.4M in the quarter ending March 31, 2021 representing 52% of total revenues and growth of 134% over the first quarter of 2020. We believe that the market for 400G and above products will grow at a 5-year compound annual growth rate of approximately 70 percent through 2024. We therefore expect our 400G and above revenues will continue to grow at an accelerated rate over the immediate and longer term.

The Covid-19 pandemic is impacting our business, the business of our customers and suppliers, as well as how we execute our business. We have implemented strict measures to ensure and maintain safety, including working remotely where possible with enhanced protocols in each of our global facilities.

Our operations and products support essential communications networks globally. We continue to adjust comprehensive business continuity plans 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 access to critical components, as we see strong demand for our products supporting increased network bandwidth.

We believe that our balance sheet and liquidity position provide the flexibility needed to support our operations and planned production ramping.

Our Solutions

Three critical optical components are required to make a 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 DSP IC.

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. We use our coherent components to design, manufacture and sell complete coherent pluggable transceivers including our 400G QSFP-DD, OSFP and CFP2-DCO modules.

Our core capabilities in coherent optics open further opportunities for us in adjacent markets outside of communications. Coherent technology improves sensitivity and performance for such applications as inter-satellite communication links including for low earth orbit ("LEO") satellites, sensing for industrial applications, LIDAR for autonomous vehicle navigation, and medical imaging.

Critical accounting policies and estimates

We prepare our condensed consolidated financial statements in accordance with generally accepted accounting principles in the United States. The preparation of condensed consolidated financial statements also requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, costs and expenses and related disclosures. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. Actual results could differ significantly from the estimates made by our management.

There have been no material changes to our critical accounting policies and estimates from those disclosed in our Annual Report on Form 10-K for the year ended December 31, 2020.

Results of Operations

Revenue

Our business is focused on the highest speed digital optics and signal processing communications applications. In the three months ended March 31, 2021, our High Speed Products for data rates of 100G and beyond comprised 94% 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. Our sales transactions to customers are denominated primarily in U.S. dollars.

	Three Months Ended March 31,			
(in thousands, except percentages)	**2021**	**2020**	**$ Change**	**% Change**
Total revenue	$ 60,926	$ 97,401	$ (36,475)	(37)%

We generate most of our revenue from a limited number of customers. We have several large customers which may or may not exceed 10% of revenue in any given quarter. Four customers were greater than 10% of our revenue for the three months ended March 31, 2021 and two customers were greater than 10% for the three months ended March 31, 2020. Excluding Huawei, our next four largest customers accounted for 74% and 33% of our revenue in the three months ended March 31, 2021 and 2020, respectively.

Three Months Ended March 31, 2021 Compared With Three Months Ended March 31, 2020

Total revenue decreased by $36.5 million, or 37%, in the three months ended March 31, 2021 compared to the same period in 2020. The majority of the decrease is the result of the additional BIS restrictions on Huawei effective in the third quarter of 2020, partially offset by an increase in our high performance products. Huawei revenue was 1% in the three months ended March 31, 2021 and 52% for the same period in 2020. Excluding Huawei, revenue in the first quarter of 2021 grew 28% year over year, reflecting our expansion with other customers and markets. Of this, our 400G and above product revenue in the first quarter of 2021 was slightly above last quarter’s and comprised 52% of revenue, up from 46% of revenue in the fourth quarter of 2020 and grew 134% year-over-year.

In the three months ended March 31, 2021 and 2020, 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 March 31,	
	2021	**2020**
China	25 %	60 %
Americas	9 %	19 %
Rest of world	66 %	21 %
Total revenue	100 %	100 %

Geographic revenue represents the shipment location and frequently changes based on the location of contract manufacturing, rather than end customer location. Shipments to the Americas and to the rest of the world are mainly to contract manufacturers for non-China based network equipment manufacturers ("NEMs").

We believe we will 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 94% or more of our business. Since launching 400ZR and 400ZR+ pluggable coherent modules in the fourth quarter of 2019, we have been shipping units for qualification and our first production lines have been installed and being readied for ramping. In addition, we are sampling our newest 96Gbaud component suite for superb 800G DCI and 400G long-haul transmissions. We believe these high-performance products will bring revenue growth and potential expansion into other markets. While we expect a significant portion of our revenue will continue to be derived from a limited number of customers, we continue to see some customer diversification with four customers greater than 10% of our revenue in the first quarter of 2021 and expect a further increase in diversification with expansion of our high-performance products.

Cost of Goods Sold and Gross Margin

Our cost of goods sold consists primarily of the cost to produce wafers, modules and to manufacture and test our products. Additionally, our cost of goods sold includes stock-based compensation, write-downs of excess and obsolete inventory, royalty payments, amortization of certain purchased intangible assets, depreciation, acquisition-related fair value adjustments, restructuring charges, warranty costs, 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. We have made significant operational improvements with solid progress on cost reductions, yield improvement and effective cost absorption through higher volume in addition to reducing depreciation costs. Because of the additional BIS restrictions on Huawei, the business volume in the first quarter of 2021 was significantly lower as compared to the same period in 2020; with 37% lower revenue and Chinese New Year holiday impacting our factory utilization and cost absorption, gross profit as a percentage of revenue decreased by 9% to 22% as compared to 31% in the same period in 2020.

	Three Months Ended March 31,			
(in thousands, except percentages)	**2021**	**2020**	**$ Change**	**% Change**
Cost of goods sold	$ 47,587	$ 67,675	$ (20,088)	(30)%
Gross profit	$ 13,339	$ 29,726	$ (16,387)	(55)%

	Three Months Ended March 31,	
	2021	**2020**
Gross profit as a % of revenue	22 %	31 %

Three Months Ended March 31, 2021 Compared With Three Months Ended March 31, 2020

Gross profit decreased by $16.4 million, or 55%, to $13.3 million in the three months ended March 31, 2021, compared to $29.7 million in the same period in 2020. Gross margin decreased to 22% in the three months ended March 31, 2021, compared to 31% in the three months ended March 31, 2020. The decrease in gross profit was primarily driven by $18.6 million of utilization and related charges, annual price adjustments offset by continuous cost reductions, approximately $1.4 million decrease in inventory write-downs mostly due to less end-of-life products reserve and $0.8 million reduction in China tariffs and other expenses. Tariffs on most of the products we imported into China have been eliminated since late March 2020.

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 other variable compensation.

	Three Months Ended March 31,			
(in thousands, except percentages)	**2021**	**2020**	**$ Change**	**% Change**
Research and development	$ 13,098	$ 11,884	$ 1,214	10 %
Sales and marketing	3,865	3,659	206	6 %
General and administrative	7,294	6,789	505	7 %
Asset sale related costs	163	12	151	1,258 %
Total operating expenses	$ 24,420	$ 22,344	$ 2,076	9 %

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 March 31, 2021 Compared With Three Months Ended March 31, 2020

We focus our research and development efforts to continue pushing the performance leadership boundaries. Research and development expense of $13.1 million, or 21% of revenue, increased $1.2 million, or 10%, in the three months ended March 31, 2021, compared to the same period in 2020. The increase was primarily due to $0.6 million higher payroll and related expenses, $0.3 million net increase in development expenses, and $0.3 million increase in depreciation.

We believe that investments in research and development are important to help meet our strategic objectives. We plan to continue to invest in research and development activities, including new products that we believe will further enhance our competitive position and expand our revenue stream. As a percentage of total revenue, our research and development expense may vary as our investment and revenue levels change over time.

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 March 31, 2021 Compared With Three Months Ended March 31, 2020

Sales and marketing expense remained flat in the three months ended March 31, 2021, compared to the same period in 2020.

We expect to continue to expand our high speed market focus and increase sales and marketing coverage of the DCI, Cloud and hyperscale data center markets, particularly the 400ZR and 400ZR+ products as well as the 64 Gbaud and 96 Gbaud component suites. As a percentage of total revenue, our sales and marketing expense may vary as our revenue changes over time.

General and administrative

General and administrative expense consists 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 March 31, 2021 Compared With Three Months Ended March 31, 2020

General and administrative expense increased by $0.5 million or 7%, in the three months ended March 31, 2021, compared to the same period in 2020. The increase was mainly from $0.6 million increase in variable compensation, $0.5 million increase in payroll and related expenses, net of $0.6 million decrease in professional services costs.

Asset sale related costs

We incurred $0.2 million and less than $0.1 million in asset sale and related costs during the three months ended March 31, 2021 and 2020, respectively, 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 March 31,			
(in thousands, except percentages)	**2021**	**2020**	**$ Change**	**% Change**
Interest income	$ 105	$ 98	$ 7	7 %
Interest expense	(227)	(378)	151	(40)%
Other income, net	1,143	1,198	(55)	(5)%
Total	$ 1,021	$ 918	$ 103	11 %

Interest expense included in interest and other income, net decreased by $0.2 million in the first quarter of 2021, as compared to the same period in 2020. The decrease in interest expense was due to $9.2 million decrease in outstanding borrowings and lower interest rate on our Wells Fargo Bank loan.

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 March 31,			
(in thousands, except percentages)	**2021**	**2020**	**$ Change**	**% Change**
Income tax provision	$ (632)	$ (1,993)	$ 1,361	(68)%

Our income tax provision in the three months ended March 31, 2021 and 2020 was primarily related to the operating profit realized in our foreign subsidiaries in Japan and China. Historically, we have experienced net losses in the U.S. and in the short term, we expect this trend to continue.

Liquidity and capital resources

As of March 31, 2021, we had working capital of $139.8 million, including total cash, short-term investments and restricted cash of $111.2 million. Approximately 40% of our total cash, short-term investments and restricted cash were held by our foreign entities, including approximately $35.4 million in accounts held by our subsidiaries in China, of which $0.5 million was in restricted cash, and approximately $8.3 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 $10.0 million of our retained earnings within our total accumulated deficit as of December 31, 2020 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 March 31, 2021. As of March 31, 2021, the outstanding balance under the Credit Facility was $21.1 million and the weighted average rate under the LIBOR option was 1.96%. The remaining borrowing capacity as of March 31, 2021 was $9.0 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 March 31, 2021, our subsidiaries 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 March 31, 2021 and December 31, 2020. There were no compensating balances relating to these credit facilities as of March 31, 2021 and December 31, 2020, respectively. Compensating balances are classified as restricted cash on our condensed consolidated balance sheets.

As of March 31, 2021, 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 $6.2 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 $6.2 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 $7.7 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 March 31, 2021, our aggregate outstanding principal balance under Mitsubishi Bank Term Loans and Mitsubishi-Yamanashi Term Loan was 1.2 billion JPY (approximately $11.0 million). Refer to Note 8 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 three months of 2021, we generated an operating loss of $11.1 million and used cash from operations of $8.9 million. We had an accumulated deficit of $429.6 million as of March 31, 2021. As of March 31, 2021, the remaining borrowing capacity under our revolving line of credit agreement with Wells Fargo Bank, was $9.0 million, of which $5.0 million is required to be maintained as unused borrowing capacity. Additionally, we had $3.0 million of current portion of long-term debt as of March 31, 2021, which we plan to pay out from our existing available cash.

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.

Cash flow discussion

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

	Three Months Ended March 31,	
(in thousands)	**2021**	**2020**
Net cash provided by (used in) operating activities	$ (8,944)	$ 24,926
Net cash used in investing activities	(1,552)	(2,493)
Net cash used in financing activities	(1,105)	(1,781)
Effect of exchange rates on cash, cash equivalents and restricted cash	(449)	(254)
Net increase (decrease) in cash, cash equivalents and restricted cash	$ (12,050)	$ 20,398

Operating activities

Net cash used in operating activities was $8.9 million in the three months ended March 31, 2021, compared to $24.9 million net cash provided by operating activities in the same period in 2020. The net cash used in operating activities increased by $33.9 million primarily due to the increase in net loss of $17.0 million, a net decrease in working capital of $15.9 million primarily related to a net payment to APAT of approximately $3.8 million as a result of the litigation settlement from the fourth quarter of 2020, timing of payments, collection efforts and inventory management when compared to the same period in 2020.

Investing activities

Net cash used in investing activities was $1.6 million in the three months ended March 31, 2021, compared to $2.5 million used in investing activities in the same period in 2020. The decrease in cash flows used in investing activities was primarily due to a decrease in purchases of property, plant and equipment of $0.7 million and an increase in proceeds from the sale of property, plant and equipment and other assets of $0.2 million, when compared to the same period in 2020.

Financing activities

Net cash used in financing activities was $1.1 million in the three months ended March 31, 2021, compared to $1.8 million used in financing activities in the same period in 2020. 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 $1.0 million, offset by an increase in payments related to tax withholding on restricted stock units of $1.6 million when compared to the same period in 2020.

Off-balance Sheet Arrangements

As of March 31, 2021, 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, 2020. 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 for the year ended December 31, 2020.

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 March 31, 2021. 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 March 31, 2021 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 11, *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 facts 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 for the year ended December 31, 2020, as filed with the SEC on February 25, 2021, 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. We have generated most of our revenue from a limited number of customers. Four customers were greater than 10% of our revenue for the three months ended March 31, 2021 and two customers were greater than 10% for the three months ended March 31, 2020. Revenue from Huawei was 1% in the three months ended March 31, 2021 and 52% for the same period in 2020. This decrease was due to BIS restrictions on business with Huawei. Excluding Huawei, our next four largest customers accounted for 74% and 33% of our revenue in the three months ended March 31, 2021 and 2020, respectively. The removal of Huawei from our Q1 2021 forecast had a material adverse effect on our revenue and the expected reduction in sales to Huawei for the remainder of 2021 versus our sales in 2020 is expected to have a material adverse impact. The lack of significant growth from, the loss of, or a significant reduction in orders from any of our other major customers would materially and adversely affect our revenue and results of operations.

Our solutions for the Cloud and data center 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 data center market segments. If we fail to achieve broader acceptance of our products in the Cloud and data center markets, 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 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 introduce and complete new designs and timely qualify and certify our products;
- Whether major Cloud and hyperscale data center operators will 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, many of whom are large companies with substantial negotiating power.

If the Cloud and data center market segments fail to grow as expected, or if demand for our solutions in these segments fails to materialize, our business, financial condition, results of operations, and prospects will suffer.

If our customers do not qualify our products for use or do not award us design wins, 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, a process called qualification in our industry, for our new and existing products. 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.

Once we have achieved qualification, there is no guarantee that our customers will purchase our products in volume. Our customers typically select two to three vendors per design or version of their products and award a design win. If we are not awarded a design win, our customer will not place volume purchase orders for that version of the customer product.

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 may 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 outside the U.S. such as, but not limited to, Japan or China for some of our products in accordance with various statutes or regulations. 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 March 2021, the U.S. Department of Commerce enacted new regulations on Information and Communications Technology and Services (“ICTS”) which could result in new licensing requirements or delays or restrictions on the U.S. import of some of our foreign-made products.

In May 2019, BIS added Huawei and certain affiliates its Entity List. Absent a license, this action prevents Huawei from purchasing products, software and technology that are subject to U.S. Export Administration Regulations ("EAR"). We are committed to EAR compliance in each of the locations in which we do business. 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 second quarter and the remainder of 2019 and into 2020.

Due to the additional actions of BIS in August 2020, we halted shipments to Huawei after September 14, 2020 and simultaneously removed Huawei revenue from our operating plan while we conducted a systemic assessment of the impact of the new regulations on our products and production methods. The loss of revenue from Huawei in the three month periods ended December 31, 2020 and March 31, 2021 had a material adverse impact on our revenues and financial results, and we have taken actions to adjust our business. Further BIS or other government actions may adversely affect our ability to sell any products to Huawei.

Additionally, in May 2020, BIS added Fiberhome to the Entity List, which became effective in June 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 in mid-2019, U.S. government 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. 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 we are legally able 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.

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 or reduce 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 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 and semiconductors. Due to the global shortages in the supply of semiconductors, we may be unable to meet our growth and revenue targets due to an inability to purchase sufficient components for our products to satisfy customer demand.

Additionally, it is possible that purchased components 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.

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.

On December 1, 2020, the Chinese government implemented a new Export Control Law (“ECL”) which regulates the export of certain technologies outside of China. As currently implemented, the ECL does not apply to our products and is not expected to impact our business; however the ECL could be amended in the future in a way that could adversely affect 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 and returned to losses in the fourth quarter of 2020 and we expect to recur in the future.

We have had a history of losses and we may incur additional losses in future periods. As of March 31, 2021, our accumulated deficit was $429.6 million. Due to the actions of BIS in August 2020, we decided to remove Huawei revenue from our operating plan while we conducted a systemic assessment of the impact of the new regulations on our products and production methods. As a result of this decision, we incurred losses in the first quarter of 2021 and we expect that we will incur further losses in 2021.

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.

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.

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 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 data center interconnect 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 in 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.

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

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 are difficult 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).

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. 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.

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 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 or other factors, 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. 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 impacted, 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 data center interconnect market segments, our business and financial results will suffer if growth does not occur as expected.

The markets for communications networks and network equipment is 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 end user 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, Canada, 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.

There may be unknown impacts on our business resulting from the SolarWinds Orion cybersecurity hack despite our efforts to secure our network.

In December 2020, after press coverage on the SolarWinds Corporation cybersecurity breach, we undertook a comprehensive review of our networks to determine if we had been impacted. After a comprehensive review by our internal information security group and a third party cybersecurity investigator, we discovered that, while the affected software had been in use in our networks, there was no evidence of any suspicious activity on our networks or of any compromise to our data. Despite our remediation efforts, there may be compromises to our data that our investigation did not uncover or additional undiscovered malware on our networks which could result in breaches of data security. The impact on our business of any such breach of data security is discussed in the Risk Factor captioned “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 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 (for example, see our discussion on the Finisar dispute). 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.

Although we believe that we would have meritorious defenses to infringement allegations and intend to defend any new 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 our business.

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.

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.

****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.

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 protect 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.

****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, 2020, we had net operating loss ("NOL"), carryforwards for U.S. federal and state tax purposes of $289.4 million and $52.0 million, respectively. 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.

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 29% as of March 31, 2021, 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 may change trade policies that impact our operations. Prior to early 2020, the China government imposed tariffs on certain of our products manufactured in our U.S. operations and imported into China from the United States. There has been exemption of these tariffs since then. We expect these tariffs, if applied without exemption, will increase our cost of goods sold. It is unknown if exemption, or 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 outside of the Cloud and data center market segments 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 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.

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.

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.

General Risks

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.

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 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.

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.

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	Updated Retention Agreement, dated March 25, 2021, between Yang Chiah Yee and NeoPhotonics Corporation.	Form 8-K	001-35061	10.1	March 30, 2021	
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:	April 29, 2021	By:	/S/ ELIZABETH EBY
			Elizabeth Eby
			Senior Vice President, Finance and Chief Financial Officer
			(Principal Financial and Accounting Officer)

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: April 29, 2021

/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: April 29, 2021

/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 March 31, 2021, 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 29th day of April, 2021.

/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.