

# Photon Control Inc.

## Management's Discussion and Analysis

For the three and six months ended June 30, 2019

*(in Canadian dollars, amounts in thousands except number of shares and per share amounts)*

DATED August 8, 2019



**MANAGEMENT'S DISCUSSION AND ANALYSIS**  
*For the three and six months ended June 30, 2019*

**Table of Contents**

MANAGEMENT'S DISCUSSION AND ANALYSIS .....	1
OVERVIEW .....	2
COMPANY HIGHLIGHTS .....	2
PRODUCTS AND INDUSTRIES .....	2
SALES, MARKETING AND DISTRIBUTION .....	3
MARKET LANDSCAPE .....	3
SELECTED FINANCIAL INFORMATION .....	4
OVERALL PERFORMANCE AND DISCUSSION OF OPERATIONS .....	6
SUMMARY OF QUARTERLY RESULTS .....	8
LIQUIDITY AND CAPITAL RESOURCES .....	9
OFF BALANCE SHEET ARRANGEMENTS .....	10
LEASE LIABILITIES .....	11
RELATED PARTY TRANSACTIONS .....	11
FINANCIAL INSTRUMENTS AND FAIR VALUES .....	11
CRITICAL ACCOUNTING POLICIES AND ESTIMATES .....	13
CHANGES IN SIGNIFICANT ACCOUNTING POLICIES .....	14
RESTATEMENT OF PRIOR COMPARATIVE INFORMATION .....	16
DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROLS OVER FINANCIAL REPORTING .....	16
SUBSEQUENT EVENT .....	17
OUTSTANDING SHARE DATA .....	17
RISKS AND UNCERTAINTIES .....	17
SEDAR .....	17
CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS .....	18



## MANAGEMENT'S DISCUSSION AND ANALYSIS

This Management's Discussion and Analysis ("MD&A") provides information for the three and six months ended June 30, 2019, and up to and including August 8, 2019. This MD&A is prepared in accordance with National Instrument 51-102F1, and should be read in conjunction with Photon Control Inc.'s (the "Company" or "Photon Control") unaudited condensed interim consolidated financial statements and accompanying notes for the three and six months ended June 30, 2019, and the consolidated financial statements and accompanying notes for the years ended December 31, 2018 and 2017. These documents, along with additional information about the Company, including the Annual Information Form ("AIF"), are available at [www.photoncontrol.com](http://www.photoncontrol.com) and [www.sedar.com](http://www.sedar.com).

This MD&A contains certain forward-looking statements and assumptions. See "Cautionary Note Regarding Forward Looking Statements" section of this MD&A for more information.

The financial data contained in this report and in the unaudited condensed interim consolidated financial statements and accompanying notes of the Company for the three and six months ended June 30, 2019 have been prepared in accordance with International Financial Reporting Standards ("IFRS") and are stated in Canadian dollars, unless otherwise noted.

In addition to the results reported in accordance with IFRS, the Company uses various non-GAAP financial measures, which are not recognized under IFRS, as supplemental indicators of the Company's operating performance and financial position. These non-GAAP financial measures are provided to enhance the user's understanding of the Company's historical and current financial performance and its prospects for the future. Management believes that these measures provide useful information in that they exclude amounts that are not indicative of the Company's core operating results and ongoing operations and provide a more consistent basis for comparison between quarters and years. Details of such non-GAAP financial measures and how they are derived are provided in conjunction with the discussion of the financial information reported.

Since non-GAAP financial measures do not have any standardized meanings prescribed by IFRS, other companies may calculate these non-IFRS measures differently and our non-GAAP financial measures may not be comparable to similar titled measures of other companies. Accordingly, investors are cautioned not to place undue reliance on them and are also urged to read all IFRS accounting disclosures presented in the unaudited condensed interim consolidated financial statements and accompanying notes for the three and six months ended June 30, 2019, and the consolidated financial statements and the accompanying notes for years ended December 31, 2018 and 2017.

## OVERVIEW

Photon Control designs, manufactures, and distributes a wide range of optical sensors and systems to measure temperature and position. These products are used by the world's largest Wafer Fabrication Equipment ("WFE") manufacturers and end users in the semiconductor and related industries. Photon Control's high-quality products provide industry leading accuracy, speed and quality in the most extreme conditions and are backed by a team of experts providing a variety of on-site and remote services including custom design, installation, training and support. The Company is headquartered in an ISO 9001:2015 manufacturing facility in Vancouver, British Columbia, Canada, has a sales and engineering office in San Jose, California, and a sales distribution network across Asia. Photon Control is listed on the Toronto Stock Exchange (the "TSX"), trading under the symbol "PHO".

## COMPANY HIGHLIGHTS

The following significant corporate and financial events have taken place during the three months ended June 30, 2019, and up to and including August 7, 2019:

- On April 12, 2019, the Company announced the appointment of Nigel Hunton as its President, Chief Executive Officer ("CEO") and member of the Board of Directors effective May 2, 2019.
- On June 19, 2019, the Company announced the results from its annual general meeting of shareholders held on June 18, 2019.

## PRODUCTS AND INDUSTRIES

### Semiconductor Industry: Temperature and Position Sensors

The semiconductor capital equipment industry offers several significant and growing applications for our technology and is the primary source of revenue and growth for our business. The Company designs and produces precision temperature and position sensors used by semiconductor WFE manufacturers in our ISO-certified manufacturing facility. The manufacturing of silicon wafers for semiconductors involves a multitude of complex processes; monitoring and maintaining the correct wafer position and wafer temperature during these processes is critical to achieving the product yield and productivity required for high-volume manufacturing. The measurement accuracies required of such sensors are becoming more challenging as semiconductor devices scale to atomic level dimensions and become more three-dimensional ("3D") in nature. Furthermore, these sensors must maintain their accuracy in harsh environments encountered in critical semiconductor equipment, such as the strong radio frequency electromagnetic fields encountered in plasma etch and plasma-assisted deposition systems. Photon Control's fiber optic sensors are immune to radio frequency interference and are thus able to deliver the high accuracies required for state-of-the-art process control.

The need for scaling semiconductor devices to atomic level dimensions has also created a need for more measurement points inside the chamber. Temperature and position anomalies have a greater impact on yield at these atomic level dimensions and must be measured and controlled more precisely, which increases the value and use of fiber optic sensors. In addition, as semiconductor equipment has gone from 28 nm node to sub-10 nm nodes, the number of measurement points and etch steps has



increased more than four-fold. Similarly, the proliferation of 3D and advanced logic chip designs have become more common and comprise an increasingly significant percentage of total chips manufactured. These factors have driven and are expected to continue to drive demand for the Company's products.

## **SALES, MARKETING AND DISTRIBUTION**

Photon Control sells its products globally with sales to original equipment manufacturers ("OEMs") primarily in the United States who in turn sell their products to semiconductor manufacturers in the United States, Asia and Europe. We also sell through a network of distributors in Asia who sells our products to OEMs in their home markets.

## **MARKET LANDSCAPE**

In addition to the increasing number of measurement points, there are several other market and technology trends that we expect will contribute to the fiber optic sensor market in semiconductor manufacturing:

- Semiconductors have revolutionized all aspects of our economy and lives – among the technologies fueled by semiconductors today and in the future are smartphones, 5G mobile, the cloud, autonomous driving, and artificial intelligence. As a critical building block of these technologies, semiconductors will continue to enable innovation and transform industries, and hence, chip makers are expected to increase production to meet this growing market.
- The need for more storage capacity and computing power also continues to drive the scaling of semiconductor devices to smaller dimensions and to be more "3D". These advanced technologies are more complex which require more process steps, equipment and sensors.
- The scaling of semiconductor devices requires patterning of semiconductor materials at atomic level dimensions. This is achieved by a process called "multi-patterning" which requires extra plasma etch and deposition steps compared to standard patterning, and these equipment segments have been outpacing the overall WFE market. The Company's fiber optic sensors are used mostly in plasma etch and deposition equipment.
- The semiconductor capital equipment market has historically experienced certain cycles of growth and contraction due to variations in product supply and demand, changing customer requirements and rapid technological change.

## SELECTED FINANCIAL INFORMATION

The following table highlights key financial information for the three and six months ended June 30, 2019 as compared to the prior comparable period:

	Three months ended				Six months ended			
	June 30,		Variance		June 30,		Variance	
	2019	2018	(\$)	(%)	2019	2018	(\$)	(%)
Revenue	\$ 7,106	\$ 14,565	\$ (7,459)	-51%	\$ 15,138	\$ 28,419	\$ (13,281)	-47%
Cost of sales	3,215	6,277	(3,062)	-49%	7,017	12,252	(5,235)	-43%
Gross profit	3,891	8,288	(4,397)	-53%	8,121	16,167	(8,046)	-50%
Gross profit %	54.8%	56.9%			53.6%	56.9%		
Operating expenses								
General and administrative	2,171	2,199	(28)	-1%	3,696	3,955	(259)	-7%
Engineering	1,039	886	153	17%	2,316	1,742	574	33%
Sales and marketing	457	681	(224)	-33%	1,131	1,251	(120)	-10%
Total operating expenses	3,667	3,766	(99)	-3%	7,143	6,948	195	3%
Operating income	224	4,522	(4,298)	-95%	978	9,219	(8,241)	-89%
Finance income	226	60	166	277%	369	144	225	156%
Accretion expense on contingent consideration	(134)	(197)	63	-32%	(277)	(383)	106	-28%
Change in fair value of contingent consideration	334	(91)	425	-467%	432	(902)	1,334	-148%
Gain on sale of assets	-	-	-	0%	-	166	(166)	-100%
Foreign exchange (loss) gain	(472)	659	(1,131)	-172%	(1,058)	1,718	(2,776)	-162%
	(46)	431	(477)	-111%	(534)	743	(1,277)	-172%
Net income before taxes	178	4,953	(4,775)	-96%	444	9,962	(9,518)	-96%
Income taxes	69	1,100	(1,031)	-94%	265	3,227	(2,962)	-92%
Net income	109	3,853	(3,744)	-97%	179	6,735	(6,556)	-97%
Other comprehensive (loss) gain on foreign exchange translation of subsidiary	(28)	(23)	(5)	22%	22	(33)	55	-167%
Total comprehensive income	\$ 81	\$ 3,830	\$ (3,749)	-98%	\$ 201	\$ 6,702	\$ (6,501)	-97%
Basic earnings per share	\$ 0.00	\$ 0.03	\$ (0.03)	-100%	\$ 0.00	\$ 0.06	\$ (0.06)	-100%
Diluted earnings per share	\$ 0.00	\$ 0.03	\$ (0.03)	-100%	\$ 0.00	\$ 0.06	\$ (0.06)	-100%

Operating income is a non-GAAP measure and is therefore not universally defined. The Company defines operating income as earnings before finance income; accretion expense on contingent consideration; change in fair value of contingent consideration; gain on sale of assets; foreign exchange (loss) gain; and income taxes.



The following table highlights key financial information as at June 30, 2019 and December 31, 2018:

Financial Position	June 30,		December 31,		Variance	
	2019	2018	2018	2019	(\$)	(%)
Cash and cash equivalents	\$ 31,422	\$ 42,407	\$ 42,407	\$ 31,422	\$(10,985)	-26%
Total assets	55,284	64,872	64,872	55,284	(9,588)	-15%
Total liabilities	7,364	11,207	11,207	7,364	(3,843)	-34%
Total shareholders' equity	47,920	53,665	53,665	47,920	(5,745)	-11%

The following table provides the details of our EBITDA for the three and six months ended June 30, 2019 and 2018:

	Three months ended		Six months ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Net income for the period	\$ 109	\$ 3,853	\$ 179	\$ 6,735
Add (deduct)				
Finance income	(226)	(60)	(369)	(144)
Accretion expense on contingent consideration	134	197	277	383
Income taxes	69	1,100	265	3,227
Depreciation of property and equipment	402	365	795	706
Amortization of intangible assets	243	328	486	651
Foreign exchange loss (gain)	472	(659)	1,058	(1,718)
<b>EBITDA<sup>(1)</sup> for the period</b>	<b>\$ 1,203</b>	<b>\$ 5,124</b>	<b>\$ 2,691</b>	<b>\$ 9,840</b>

- (1) EBITDA is a non-GAAP measure and is therefore not universally defined. The Company defines EBITDA as earnings before finance income, accretion expense, income taxes, depreciation, amortization, foreign exchange loss (gain).

## OVERALL PERFORMANCE AND DISCUSSION OF OPERATIONS

### Revenue

Total revenues for the three and six months ended June 30, 2019 decreased 51% and 47% over the prior comparable periods, respectively. All of the Company's sales are made in the semiconductor industry, and the decrease in revenues reflects the overall market decline since the second half of 2018, as wafer fabrication equipment spending has been delayed by original equipment manufacturers primarily due to the semiconductor cycle.

The following table provides a summary of our revenues by territory:

	Three months ended				Six months ended			
	June 30,		Variance		June 30,		Variance	
	2019	2018	(\$)	(%)	2019	2018	(\$)	(%)
United States	\$ 5,728	\$ 8,370	\$ (2,642)	-32%	\$ 10,260	\$ 17,344	\$ (7,084)	-41%
Asia	1,378	6,195	(4,817)	-78%	4,878	11,075	(6,197)	-56%
<b>Total</b>	<b>\$ 7,106</b>	<b>\$ 14,565</b>	<b>\$ (7,459)</b>	<b>-51%</b>	<b>\$ 15,138</b>	<b>\$ 28,419</b>	<b>\$ (13,281)</b>	<b>-47%</b>

For the three and six months ended June 30, 2019, revenues generated from customers located in the United States and Asia decreased over the prior comparable periods due to continued inventory reduction strategies employed by our customers following reduced levels of semiconductor equipment capital spending.

### Gross Profit

Gross profit decreased for the three and six months ended June 30, 2019 over the prior comparable periods as a result of lower overall revenues. Gross margin decreased to 54.8% and 53.6% for the quarter and first half of 2019, respectively, compared to 56.9% in the prior comparable periods due to lower overall revenues.

### Operating Expenses

Total operating expenses for the three and six months ended June 30, 2019 were \$3,667 and \$7,143 compared to \$3,766 and \$6,948 in the prior comparable periods, respectively.

### General and Administrative

General and administrative totaled \$2,171 and \$3,696 for the quarter and year-to-date compared to \$2,199 and \$3,955 in the prior comparable period, respectively. The decrease for the quarter and year-to-date were the result of cost reduction measures implemented since the second half of 2018, in response to the cyclical nature of the semiconductor industry, as the industry is currently experiencing a slow-down in capital spending by original equipment manufacturers after a very strong first half in 2018. The cost reduction measures were partially offset by the onboarding and recruiting costs related to the hiring of the Company's Chief Executive Officer in the quarter.





### Engineering

Engineering totaled \$1,039 and \$2,316 for the quarter and year-to-date compared to \$886 and \$1,742 in the prior comparable periods, respectively. The increases in engineering expenses reflects increased staffing and material costs to support new product development, which was partially offset by Government tax credits recognized in the quarter for research and development activities.

### Sales and Marketing

Sales and marketing totaled \$457 and \$1,131 for the quarter and year-to-date compared to \$681 and \$1,251 in the prior comparable periods, respectively. The decreases for the quarter and year-to-date periods were due to streamlining and focusing our sales and marketing efforts on future growth priorities, which resulted in lower staffing costs and marketing spend for the period.

### Accretion Expense on Contingent Consideration

Contingent consideration relates to the acquisition of certain assets of Photon R&D in 2017. It is determined using a discount model applied to royalties on revenues earned from defined products from January 1, 2017 to December 31, 2021. Accretion expense represents the calculated increase of contingent consideration resulting from the passage of time.

### Change in Fair Value of Contingent Consideration

Change in fair value of contingent consideration resulted in a gain of \$334 and \$432 for the quarter and year-to-date periods, compared to a loss of \$91 and \$902 in the comparable periods in 2018, respectively. Change in fair value of contingent consideration is based on revisions to management's estimate of the potential total amount of contingent consideration compared to the estimate made at the end of the preceding period. The gain for the current periods in 2019 resulted from a decrease in management's estimate of future royalties payable to Photon Control R&D Ltd. as the industry is witnessing significantly curtailed investments in the memory sector, which are expected to persist for the foreseeable future.

### Foreign Exchange Gain/Loss

The Company is subject to foreign exchange risk as its products are priced in United States dollars ("USD"), while the majority of its expenses and assets are denominated in Canadian dollars. The Company does have a partial "natural hedge" against foreign exchange risk, as some of its component parts and accounts payable are priced and or valued in USD. The foreign exchange loss for the three and six months ended June 30, 2019 was due to the strengthening of the Canadian dollar relative to the US dollar throughout the period.

### Income Taxes

Income taxes for the three and six months ended June 30, 2019 were \$69 and \$265 compared to \$1,100 and \$3,227 in the prior comparable periods, respectively.



## EBITDA

EBITDA is defined as earnings before finance income, accretion expense, income taxes, depreciation, amortization and foreign exchange (loss) gain. EBITDA for the three and six months ended June 30, 2019 were \$1,203 and \$2,691 compared to \$5,124 and \$9,840 in the comparable periods in 2018, respectively. The decreases were due to lower overall profitability resulting from decreased revenues due to the current semiconductor cycle and increased engineering costs to support new product development.

## Order Backlog

Order backlog was \$10,714 on June 30, 2019, a decrease from \$10,757 at March 31, 2019 and \$13,097 at December 31, 2018. Order backlog represents the unfulfilled value of sales orders received and scheduled for fulfillment in the remaining rolling 6-month period. While the order backlog was relatively flat versus March 31, 2019, the decrease in order backlog since December 31, 2018 is attributable to a slow-down in capital spending by semiconductor manufacturers since the second half of 2018.

## SUMMARY OF QUARTERLY RESULTS

The global semiconductor industry is fast paced, competitive and constantly innovating to increase processing speed and power. The ability to anticipate these technological changes and innovate to meet them without compromising quality, is a key competitive advantage in this market. As a supplier of componentry to semiconductor WFE manufacturers, Photon Control's key strengths include our rapid prototyping capabilities, our ISO-certified production facility and CE methods, and our ability to manufacture to our customer's exacting standards with our highly trained workforce. In addition to our high-quality manufacturing strengths, our products include unique proprietary characteristics which both differentiate our products and allow us to outperform competitive offerings.

The following table provides a summary of the Company's financial results for the eight most recently completed quarters.

	Q3 2017 (Restated)	Q4 2017 (Restated)	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019
Revenue	\$ 12,024	\$ 11,033	\$ 13,854	\$ 14,565	\$ 10,052	\$ 8,233	\$ 8,032	\$ 7,106
Gross profit	\$ 6,551	\$ 4,955	\$ 7,879	\$ 8,288	\$ 5,193	\$ 4,287	\$ 4,230	\$ 3,891
Gross margin %	54%	45%	57%	57%	52%	52%	53%	55%
Net income	\$ 1,628	\$ 2,574	\$ 2,882	\$ 3,853	\$ 1,249	\$ 2,699	\$ 70	\$ 109
Basic EPS	\$ 0.01	\$ 0.02	\$ 0.03	\$ 0.03	\$ 0.01	\$ 0.03	\$ 0.00	\$ 0.00
Diluted EPS	\$ 0.01	\$ 0.02	\$ 0.03	\$ 0.03	\$ 0.01	\$ 0.03	\$ 0.00	\$ 0.00
Cash and cash equivalents	\$ 26,966	\$ 34,345	\$ 33,367	\$ 40,794	\$ 42,651	\$ 42,407	\$ 37,264	\$ 31,422

The Company achieved general revenue growth until the second quarter of 2018 as the semiconductor industry has grown, and the Company has solidified its position as a supplier of choice for its customers. Revenue for the four most recently completed quarters declined as a result of the cyclical nature of the semiconductor industry, as the industry is experiencing a period of weakness until the memory market re-stabilizes. The Company's net income for the quarters in 2017 were negatively



affected by non-recurring items and were restated for a previously unreported liability of income taxes owing to a foreign jurisdiction. The restatement is fully described in the Company's annual consolidated financial statements for the years ended December 31, 2018 and 2017.

## LIQUIDITY AND CAPITAL RESOURCES

The following table provides a summary of the Company's working capital as at June 30, 2019 and December 31, 2018:

	June 30, 2019	December 31, 2018	Variance
Cash and cash equivalents	\$ 31,422	\$ 42,407	\$ (10,985)
Trade and other receivables	3,367	4,065	(698)
Income taxes receivable	1,495	-	1,495
Inventories	5,217	5,515	(298)
Prepaid expenses and deposits	590	468	122
<b>Total current assets</b>	<b>42,091</b>	<b>52,455</b>	<b>(10,364)</b>
Accounts payable and accrued liabilities	3,097	3,524	(427)
Income taxes payable	-	4,354	(4,354)
Current portion of contingent consideration	1,055	1,118	(63)
Current portion of lease liabilities	263	-	263
<b>Total current liabilities</b>	<b>4,415</b>	<b>8,996</b>	<b>(4,581)</b>
<b>Working capital</b>	<b>\$ 37,676</b>	<b>\$ 43,459</b>	<b>\$ (5,783)</b>

Management believes the Company will be able to continue to meet its liabilities and commitments as they become due and will generate sufficient amounts of cash and cash equivalents from the continued manufacturing and distribution of existing products and the commercialization of new products. This cash will be used to maintain capacity, meet planned growth and development activities and other corporate initiatives including the Normal Course Issuer Bid ("NCIB") program. The Company continues to monitor all expenditures and implement cash management strategies to ensure that it has adequate cash reserves to fund identified expenditure requirements.

Notwithstanding the Company's positive working capital position, the Company may require financing in order to satisfy future growth activities. The Company may also need additional capital to fund specific growth projects or acquisitions in the future, and while no such projects are planned at this time outside of the NCIB, a change in circumstances could result in the need for additional capital.

### Capital Management

The Company considers shareholders' equity as capital, the book value of which totaled \$47,920 at June 30, 2019 (December 31, 2018 - \$53,665).

The Company manages its capital structure to safeguard its ability to operate as a going concern, to provide sufficient resources to meet day-to-day operating requirements, to allow it to enhance existing product offerings as well as develop new ones, and to have the financial ability to expand the size of

its operations by taking on new customers. In managing its capital structure, the Company takes into consideration various factors, including the growth of its business and related infrastructure and the upfront cost of taking on new clients.

The Company's officers and senior management are responsible for managing the Company's capital and do so through regular meetings and regular review of financial information. The Company's Board of Directors is responsible for overseeing this process.

#### Working Capital

The decrease of working capital over December 31, 2018 was due to cash of \$6,236 used towards the NCIB to re-purchase and cancel 4,728,820 common shares as at June 30, 2019.

#### Cash and Cash Equivalents

At June 30, 2019, the Company held cash and cash equivalents of \$31,422 compared to \$42,407 as at December 31, 2018. The decrease was attributable to cash used to buy back shares of the Company and timing of tax payments made in the period, including the full payment of taxes made to a foreign jurisdiction as part of a voluntary disclosure agreement.

#### Trade and Other Receivables

Trade and other receivables of \$3,367 decreased from \$4,065 as at December 31, 2018 due to lower overall revenues and strong collections of trade receivables for the period.

#### Inventories

Inventories as at June 30, 2019 totaled \$5,217 compared to \$5,515 as at December 31, 2018, with the decrease attributable to lower future demand by customers, as represented by the order backlog.

The Company follows a "Copy Exact" standard in providing its products to its customers and is required to maintain adequate inventory on hand to fill purchase orders from its customers. As a result, and due to the fact that the timing and quantum of such purchase orders cannot be forecasted with complete accuracy, the Company's inventory supply must be planned to protect against variation between the forecast and actual customer demand. These variances in demand and revenue can have a short-term effect on the Company's liquidity from time to time.

#### Accounts Payable and Accrued Liabilities

As at June 30, 2019, the Company's accounts payable and accrued liabilities, which are due for payment within 12 months of the balance sheet date, were \$3,097 compared to \$3,524 as at December 31, 2018; the decrease is consistent with the reduction in sales activities.

### OFF BALANCE SHEET ARRANGEMENTS

The Company had no off-balance sheet arrangements other than short-term lease agreements and a credit card facility.

## LEASE LIABILITIES

The Company's lease liabilities are for office premises. The carrying amount of the lease liabilities as at June 30, 2019 was \$1,627 and the breakdown of contractual undiscounted cash flows for lease liabilities and short-term leases by maturities as at June 30, 2019 is presented below:

	<b>June 30, 2019</b>
Less than one year	\$ 398
One to five years	1,349
More than five years	191
<b>Total</b>	<b>\$ 1,938</b>

For the three and six months ended June 30, 2019, interest expense on lease liabilities was \$20 and \$40, and lease expenses related to short-term leases were \$28 and \$46, respectively.

## RELATED PARTY TRANSACTIONS

The remuneration of key management for the three and six months ended June 30, 2019 and 2018 is as follows:

	<b>Three months ended</b>		<b>Six months ended</b>	
	<b>June 30, 2019</b>	<b>June 30, 2018</b>	<b>June 30, 2019</b>	<b>June 30, 2018</b>
Cash-based payments	\$ 526	\$ 452	\$ 716	\$ 865
Share-based payments	147	201	184	396
	<b>\$ 673</b>	<b>\$ 653</b>	<b>\$ 900</b>	<b>\$ 1,261</b>

Cash-based payments include salaries, bonuses, consulting fees and other benefits.

## FINANCIAL INSTRUMENTS AND FAIR VALUES

### Measurement categories, fair values and valuation methods

The Company's financial assets and liabilities, with the exception of contingent considerations, are measured using amortized costs which approximates fair value due to the nature of these instruments:

	<b>June 30, 2019</b>		<b>December 31, 2018</b>	
	<b>Carrying Value</b>	<b>Fair Value</b>	<b>Carrying Value</b>	<b>Fair Value</b>
Financial assets	\$ 34,789	\$ 34,789	\$ 46,472	\$ 46,472
Financial liabilities	3,097	3,097	3,524	3,524

### Fair value hierarchy

The following financial assets and liabilities are measured at fair value on a recurring basis using quoted prices in active markets for identifiable assets (Level 1); significant other observable inputs (Level 2); and significant unobservable inputs (Level 3):

June 30, 2019	Carrying Value	Level 1	Fair Value	
			Level 2	Level 3
<b>Financial liabilities</b>				
Contingent consideration	\$ 2,640	\$ -	\$ -	\$ 2,640

December 31, 2018	Carrying Value	Level 1	Fair Value	
			Level 2	Level 3
<b>Financial liabilities</b>				
Contingent consideration	\$ 3,329	\$ -	\$ -	\$ 3,329

The Company used a discounted cash flow valuation technique in calculating the fair value of the contingent consideration. This valuation technique included inputs relating to estimated cash outflows under the arrangement and the use of a discount rate appropriate to the Company (20%). The fair value measurements are sensitive to the discount rate used in calculating the fair values. A 1% increase in the discount rate would reduce the fair value of the contingent consideration by \$26. During the three and six months ended June 30, 2019, the Company recorded accretion expense of \$134 and \$277 (2018 - \$197 and \$383) in relation to contingent consideration, respectively, reflecting the change in fair value of liability that is attributable to market risk.

### Financial risk factors

The Company is exposed to a number of risks. These risks include credit risk, liquidity risk and market risk. The Company has established policies and procedures to manage these risks, with the objective of minimizing the adverse effects that changes in the variable underlying these risks could have on the Company's consolidated financial statements.

### Credit risk

The following table provides information regarding the aging of trade and other receivables as at June 30, 2019 and December 31, 2018:

	Neither past	Aged	Aged	Aged	Aged
	due nor impaired	1 - 30 days	31 - 60 days	61 - 90 days	90 + days
As at June 30, 2019	97%	2%	1%	0%	0%
As at December 31, 2018	98%	2%	0%	0%	0%

As at June 30, 2019, 3% (December 31, 2018 – 2%) of the Company's trade and other receivables were past due. The definition of items that are past due was determined by reference to the Company's standard credit terms, net of any provisions for losses. At each period end, the Company reviews the

collectability of outstanding receivables. Specific accounts are only written off once all collection efforts have been explored or when legal bankruptcy has occurred. During the three and six months ended June 30, 2019, the Company did not incur any bad debt expense (2018 - \$84 and \$98).

#### Liquidity risk

At June 30, 2019 and December 31, 2018, the Company had an \$80 credit card facility with a Canadian Chartered bank.

#### Market risk

##### *Foreign exchange risk*

At June 30, 2019, the Company held net current monetary assets in United States dollars (“USD”) equal to \$23,034 (December 31, 2018 - \$27,095). The Company estimates the impact of a 10% change in the Canadian dollar exchange rate on its net current monetary assets to be \$2,303 (December 31, 2018 - \$2,710).

##### *Interest rate risk*

The Company is exposed to interest rate risk by virtue of holding cash and cash equivalents.

## **CRITICAL ACCOUNTING POLICIES AND ESTIMATES**

The preparation of condensed interim consolidated financial statements in conformity with IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

The judgments, estimates, assumptions applied in the condensed interim consolidated financial statements, including key sources of estimation uncertainty, were the same as those applied in the most recent annual consolidated financial statements for the years ended December 31, 2018 and 2017, except for the change in significant accounting policy related to lessee accounting under IFRS 16, Leases (“IFRS 16”), which are described below.

## CHANGES IN SIGNIFICANT ACCOUNTING POLICIES

Except as described below, the accounting policies applied in these condensed interim consolidated financial statements were the same as those applied in the most recent annual consolidated financial statements for the years ended December 31, 2018 and 2017.

The changes in significant accounting policies are also expected to be reflected in the consolidated financial statements of the Company for the year ending December 31, 2019.

### IFRS 16, Leases

#### At adoption

The Company adopted IFRS 16 with a date of initial application of January 1, 2019. IFRS 16 introduces a single, on-balance sheet accounting model for lessees. As a result, the Company, as a lessee, has recognized right-of-use-assets representing its rights to use the underlying assets and lease liabilities representing its obligations to make future lease payments. The Company has applied IFRS 16 with the modified retrospective approach, which did not require restatement of prior period financial information as it recognized the cumulative effect of initial application in retained earnings at January 1, 2019 and applied the standard prospectively. Accordingly, comparative information in the Company's condensed interim consolidated statements were not restated.

When transitioning to IFRS 16, the Company elected to apply the practical expedient to grandfather the assessment of which transactions are leases and applied IFRS 16 only to existing contracts that were previously identified as leases applying IAS 17, Leases and IFRIC 4, Determining Whether an Arrangement Contains a Lease. The Company has elected to not recognize right-of-use assets and lease liabilities for leases that have a term of twelve months or less and leases of low-value assets. The leases impacted by IFRS 16 were related to office premises previously accounted for as operating leases and disclosed as commitments.

Upon adoption of IFRS 16, the Company measured the right-of-use assets and lease liabilities at the present value of the lease payments as if it had applied IFRS 16 since the commencement date, using the incremental borrowing rate of 4.45% at the date of initial application. The adoption of IFRS 16 on January 1, 2019 resulted in the recognition of right-of-use assets of \$1,683 and lease liabilities of \$1,755, and a decrease in retained earnings of \$72.

The following table provides a reconciliation of the Company's operating lease obligations at December 31, 2018, as previously disclosed in the Company's consolidated financial statements, to the lease obligations recognized on initial application of IFRS 16 at January 1, 2019:

<b>Operating lease commitments at December 31, 2018</b>	<b>\$</b>	<b>1,880</b>
Discounted using the incremental borrowing rate at January 1, 2019		(255)
Recognition exemption for short-term leases		(100)
Extension options reasonably certain to be exercised		230
<b>Lease liabilities recognized at January 1, 2019</b>	<b>\$</b>	<b>1,755</b>



There was a change in the significant accounting policy upon adoption of IFRS 16, as described below.

#### Leases – accounting policy

At inception of a contract, the Company assesses whether a contract is, or contains, a lease by determining whether the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. A right-of-use asset and lease liability are recognized at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and estimated restoration costs, less any lease incentives received.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the end of the lease term, including periods covered by an option to extend the lease if the Company is reasonably certain to exercise that option.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date. The lease payments are discounted using the implicit interest rate in the lease. If the rate cannot be readily determined, the Company's incremental rate of borrowing is used. The lease liability is measured at amortized cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the Company's estimate of the amount expected to be payable under a residual value guarantee, or if the Company changes its assessment of whether it will exercise a purchase, extension or termination option.

The Company has elected not to recognize right-of-use assets and lease liabilities for leases for short-term leases that have a lease term of twelve months or less and leases of low-value assets. The Company recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

#### IFRIC 23, Uncertainty over Income Tax Treatments ("IFRIC 23")

The Company adopted IFRIC 23 with a date of initial application of January 1, 2019. The Company applied IFRIC 23 retrospectively and did not have any quantitative impacts upon adoption. There were no differences in the accounting of the Company's income tax treatments under its previous accounting policy and IFRIC 23.

#### Government assistance

Investment tax credits, whether or not recognized in the financial statements, may be carried forward to reduce future Canadian federal and provincial income taxes payable. The Company applies judgment when determining whether the reasonable assurance threshold has been met to recognize investment tax credits in the financial statements. The Company must interpret eligibility requirements in accordance with Canadian income tax laws and must assess whether future taxable income will be available against which the investment tax credits can be utilized. Any changes in these interpretations and assessments could have an impact on the amount and timing of investment tax credits recognized in the financial statements.

## **RESTATEMENT OF PRIOR COMPARATIVE INFORMATION**

As described in the most recent annual consolidated financial statements for the years ended December 31, 2018 and 2017, the Company restated its comparative financial information related to a previously unreported liability of income taxes owing to a foreign jurisdiction. As a result, the Company restated its condensed interim consolidated statement of changes in shareholders' equity for the six months ended June 30, 2018. This resulted in a decrease of \$1,581 in retained earnings as at January 1, 2018. For further details, please refer to the consolidated financial statements for the years ended December 31, 2018 and 2017.

## **DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROLS OVER FINANCIAL REPORTING**

### **Disclosure controls and procedures**

The Company has disclosure controls and procedures in place that are designed to provide reasonable assurance that information relating to the Company that is required to be disclosed under applicable securities laws is recorded, processed, summarized, and reported in the manner specified by such laws. Management has reviewed and evaluated, or caused to be evaluated under their supervision, the design and effectiveness of the Company's disclosure controls and procedures as of June 30, 2019, and has concluded that the Company's disclosure controls and procedures were effective during the three months ended June 30, 2019.

The Company's CEO and the Chief Financial Officer ("CFO") have reviewed and evaluated the effectiveness of the Company's disclosure controls and procedures related to the preparation of Management's Discussion and Analysis and the Company's consolidated financial statements as at June 30, 2019. The Company's CEO and CFO have concluded that the Company's disclosure controls and procedures were effective, at a reasonable assurance level, to ensure that material information relating to the Company and its consolidated subsidiaries would be made known to them by others within those entities, particularly during the period in which the Management's Discussion and Analysis and the consolidated financial statements contained in this report were being prepared.

### **Internal control over financial reporting**

The Company's management, with the participation of its CEO and CFO, are also responsible for establishing and maintaining adequate internal control over financial reporting, as defined in National Instrument 52-109 – *Certification of Disclosure in Issuers' Annual and Interim Filings*, in order to provide reasonable assurance regarding the reliability and accuracy of the Company's financial reporting and the preparation of its financial statements for external purposes in accordance with IFRS. The Company's CEO and CFO have evaluated, or caused to be evaluated under their supervision, the design and effectiveness of the Company's internal control over financial reporting as of June 30, 2019 and have concluded that the Company's internal control over financial reporting is effective

There have been no changes in the Company's disclosure controls or internal control over financial reporting during the three months ended June 30, 2019 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting. The

Company's CEO and CFO will certify Photon Control's quarterly filings with the Canadian securities regulatory authorities.

### **SUBSEQUENT EVENT**

During the period from July 1, 2019 to August 6, 2019, the Company re-purchased 761,180 common shares pursuant to the NCIB at a cost of \$859.

### **OUTSTANDING SHARE DATA**

As at June 30, 2019, the Company had 105,217,233 common shares issued and outstanding. As at August 7, 2019, the Company had 104,475,654 common shares were issued and outstanding.

As at June 30, 2019 the Company had 3,536,750 stock options outstanding entitling the holders to purchase one common share for each option held. As at August 7, 2019, the Company had 3,364,500 stock options outstanding.

As at June 30, 2019, the Company had restricted share units outstanding for 86,000 common shares. As at August 7, 2019, the Company had restricted share units outstanding for 86,000 common shares.

### **RISKS AND UNCERTAINTIES**

Our business is subject to significant risks and uncertainties and past performance is no guarantee of future performance. The risks and uncertainties in the Company's most recently filed AIF, which is available on the Canadian System for Electronic Document Analysis and Retrieval website ("SEDAR" ([www.sedar.com](http://www.sedar.com))) are those that we currently believe to be material, and do not represent all of the risks that we face. Additional risks and uncertainties, not presently known to us, may become material in the future or those risks that we currently believe to be immaterial may become material in the future. If any of the following risks actually occur, alone or in combination, our business, financial condition and results of operations, as well as the market price of our common shares, could be materially adversely affected.

### **SEDAR**

Additional information relating to the Company, including the Company's AIF, is available on SEDAR at [www.sedar.com](http://www.sedar.com).

## CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

This MD&A contains certain statements and information that are not based on historical facts and constitute forward-looking statements or forward-looking information within the meaning of Canadian securities laws (collectively, “forward-looking statements”), including our business outlook for the short and longer term and statements regarding our strategy, plans and future operating performance. Forward-looking statements are provided to help you understand our views of our short and longer-term plans, expectations and prospects. We caution you that forward-looking statements may not be appropriate for other purposes.

Any statements that express or involve discussions with respect to predictions, expectations, beliefs, plans, projections, objectives, assumptions or future events or performance (often, but not always, identified by words or phrases such as “expects”, “is expected”, “anticipates”, “believes”, “plans”, “projects”, “estimates”, “assumes”, “intends”, “strategy”, “goals”, “objectives”, “potential”, “possible” or variations thereof or stating that certain actions, events, conditions or results “may”, “could”, “would”, “should”, “might” or “will” be taken, occur or be achieved, or the negative of any of these terms and similar expressions) are not statements of historical fact and may be forward-looking statements. Forward-looking statements are not promises or guarantees of future performance; they represent our current views and may change significantly. Forward-looking statements are based on a number of material assumptions, including, but not limited to, those listed below, which could prove to be significantly incorrect:

- our ability to develop, manufacture and sell new products that meet the needs of our customers and gain commercial acceptance;
- our ability to continue to sell our products in line with expected quantity, price and delivery times;
- our ability to attract new business;
- continued and future demand for the Company’s products;
- continued sales to the Company’s major customers;
- our operations not being adversely affected by supply, operating, cyber security, litigation or regulatory risks;
- our ability to react to the cyclical nature of the semiconductor industry; and,
- our expectations regarding market risk, including interest rate changes, tax changes and foreign currency fluctuations.

The forward-looking statements included in this report include, without limitation, statements relating to:

- factors that expect to drive continued demand for the Company’s products;
- expected growth within the semiconductor industry and the Company’s reliance on the financial health of the semiconductor industry from which it derives its sales;
- the market for the Company’s products;
- sources of our revenues from operations in the future;
- continued international expansion and the effect of such expansion on our operations;
- potential acquisitions in the future and the effect of such acquisitions on our operations;
- fluctuation of the price of the common shares of the Company in the future;
- potential inability of investors to sell their common shares of the Company; and
- our future performance being dependent on our ability to hire and retain qualified personnel.



Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any results, performance or achievements expressed or implied by the forward-looking statements. Such uncertainties and factors include, among others:

- risks associated with the Company's ability to retain major customers;
- risks associated with a lengthy sales cycle;
- risks related to our dependency on the semiconductor industry and our ability to respond to industry cyclicality;
- risks associated with the Company's ability to expand its manufacturing capacity or reduce costs in response to rapid shifts in demand for the Company's products;
- risks associated with continuous technological change, evolving industry standards, shifting customer needs and new product introductions and enhancements;
- risks associated with failure to operate our business in accordance with our business plan;
- uncertainty relating to the timing of product development and commercial launch;
- risks associated with competition;
- operational risks associated with manufacturing and our dependence on sole or limited source suppliers;
- risks associated with compliance with customers' requirements;
- uncertainty relating to operating results;
- risks related to legal, regulatory and tax environments in which we conduct our business;
- risks associated with product liability claims;
- risks related to product pricing;
- risks related to inability to use or access information systems, or related to breaches of our network security;
- risks associated with manufacturing interruptions or delays;
- risks relating to legal proceedings and with the Company's intellectual property;
- risks associated with infringing on the intellectual property rights of others;
- uncertainty relating to general economic conditions;
- risks related to tariffs or other trade restrictions;
- risks related to future mergers or acquisitions;
- uncertainty related to international operations, including currency fluctuations, additional development projects and other business opportunities;
- risks related to the volatility of the trading price and volume of the common shares;
- risks associated with maintaining an active market for the common shares;
- risks associated with our directors and officers;
- risks associated with attracting and retaining qualified personnel; and
- risks associated with compliance with various federal, provincial, local and international laws governing the environment.

This list is not exhaustive of the factors that may affect any of our forward-looking statements. Forward looking statements are statements about the future and are inherently uncertain, and our actual achievements or other future events or conditions may differ materially from those reflected in the forward-looking statements due to a variety of risks, uncertainties and other factors, including, without limitation, those referred to in this report under the heading “Risks and Uncertainties”.

The Company’s forward-looking statements are based on beliefs, expectations and opinions of management on the date the statements are made. For the reasons set forth above, readers should not place undue reliance on forward-looking statements. The Company undertakes no obligation to update or revise any forward-looking statements included herein if these beliefs, estimates and opinions or other circumstances should change, except as otherwise required by applicable law.