Photon Control Inc.

Management's Discussion and Analysis
For the three months and year ended December 31, 2018
(in Canadian dollars, amounts in thousands except number of shares and per share amounts)

DATED March 21, 2019

MANAGEMENT'S DISCUSSION AND ANALYSIS

For the three months and year ended December 31, 2018

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MANAGEMENT'S DISCUSSION AND ANALYSIS

This Management's Discussion and Analysis ("MD&A") provides information for the three months and year ended December 31, 2018, and up to and including March 21, 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") consolidated financial statements for the fiscal year ended December 31, 2018 and accompanying notes. These documents, along with additional information about the Company, including the Annual Information Form ("AIF"), are available at www.photoncontrol.com and 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 consolidated financial statements of the Company for the year ended December 31, 2018 and accompanying notes 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 audited 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. Headquartered in an ISO 9001:2015 manufacturing facility in Vancouver, British Columbia, Canada, 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 year ended December 31, 2018, and up to and including March 20, 2019:

- On January 2, 2018, the Company announced the extension of its normal course issuer bid ("NCIB") to acquire up to 5,500,000 common shares in the capital of the Company, which expired on January 3, 2019.
- On January 18, 2018, the Company announced it received ISO 9001:2015 certification for its quality management system.
- On February 20, 2018, the Company announced the sale of its Optical Flow Meter ("OFM") product line to King's Energy Services. The sale included all of the Company's OFM technology, inventories and equipment, and the licensing of patent rights in exchange for minimum gross proceeds of $350.
- On May 24, 2018, the Company's NCIB previously announced by the Company on January 2, 2018 was accepted by the TSX and would continue through the facilities of the TSX and other Canadian marketplaces.
- On May 25, 2018, the Company's common shares were listed and posted for trading on the TSX. The common shares were concurrently delisted from the TSX Venture Exchange.
- On July 30, 2018, the Company announced it entered into an exclusive distribution agreement with Crowntech Photonics for Photon Control's fiber optic-based temperature and position sensors in China.
- On December 3, 2018, the Company announced Scott Edmonds departed from the Company as Director, President and Chief Executive Officer ("CEO"). D. Neil McDonnell, Chair of the Board of Directors, will assume the role of Interim CEO, and Ronan McGrath, Chair of the Audit Committee, will serve as Lead Independent Director.
- On January 2, 2019, the Company announced a further extension of its NCIB to acquire up to 5,490,000 common shares in the capital of the Company, which will expire on January 3, 2020.
- On January 10, 2019, the Company announced it has entered into a distribution agreement with Japan Laser Corporation ("JLC"), a leading distributor of lasers and other optical equipment in Japan.
- On January 31, 2019, the Company announced the opening of a new office in San Jose, California on February 1, 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 the 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 growth of 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 continue 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, and this will continue to fuel the Company's revenue growth.

PRODUCTION AND SERVICES

Photon Control uses a variety of assembly and test techniques in the production of its temperature and position sensors, both in-house and outsourced to contract manufacturers. Methods include, but are not limited to, manual, fixtured and semi-automated component assembly using both mechanical and adhesive technologies, fabrication of machined and molded parts, printed circuit board assembly, and component assembly and test within an IPC Class 6 cleanroom environment. Additional testing methods range from in-circuit and functional to extreme environment temperature and position accuracy verification. Quality and specification inspection, using various gauge and material analysis equipment, is used in support of production. Services include design, analysis, reliability testing, repair, rework and upgrade support.

SPECIALIZED SKILL AND KNOWLEDGE

Due to the technical nature of its business and the dynamic market in which the Company competes, continued success depends on attracting and retaining highly skilled engineering, production, managerial, consulting, marketing and sales personnel. In particular, the Company's future success depends in part on the continued services of key employees.

The engineering function requires specialized skill and knowledge, from academic and industry-related experience, for research, development and design of electronic, photonic and mechanical componentry and associated production assembly and test techniques. Production relies on technician skills and experience in several manual and semi-automated assembly and test techniques. Training programs develop and maintain those skills, whereby process documentation provides instructions on how to complete assembly and test operations. In some cases, techniques require formal training and certification such as hand soldering and fork-lift operation.

COMPETITIVE CONDITIONS

The competitive conditions vary depending on the markets where the Company's products are used. The Company competitively positions itself by highlighting its long history in the fiber optic industry, the accuracy of its products and well documented proof of this accuracy being sustainable, its products purchased and tested by some of the largest WFE manufacturers, the quality of its products, and the "Rapid Prototyping" capabilities of its new product introduction team when differentiating itself from its competitors.

The Company has perfected the use of phosphor-based fiber optic and other optical sensing technologies in harsh environments with high accuracy, rapid prototyping capabilities and "copy exact" manufacturing. Because of this, the Company is deeply embedded with the world's largest WFE manufacturers with long product life cycles (5-7 years). The long-standing partnerships with such WFE manufacturers are a key differentiating factor from other competing companies.

NEW PRODUCTS

The semiconductor capital equipment industry is characterized by technological change and product development. Research and development activities require experience, innovation, long development cycles and strong financial resources. With the close relationships we have with our customers and our understanding of their current and future needs, we have invested in research and development activities for new and existing products to maintain our competitive position and to expand and diversify our target markets for fiber optic sensors. Even during down cycles in the semiconductor industry, we have remained committed to our research and development activities in order to increase our market position and grow faster than our peers.

CYCLES

The semiconductor industry has historically suffered certain cycles of growth and contraction, and as the Company is a critical subsystems supplier to the capital equipment manufacturers in the semiconductor space, it is also subject to such cycles. The Company has identified a number of non-semiconductor market segments as potential targets for its fiber optic sensing products to diversify its revenue stream in the future.

RESTATEMENT OF PRIOR COMPARATIVE INFORMATION

During the year ended December 31, 2018, the Company's management performed a review of its existing tax structure with its third-party advisors to identify opportunities to achieve the most efficient and effective tax outcomes. In addition to identifying these opportunities, this process involved a review of historical filings and jurisdictional compliance. The review identified a previously unreported liability of income taxes owing to a foreign jurisdiction. The Company entered into a voluntary disclosure agreement with the taxing authority to limit its liability for these taxes from 2013 to 2017 and the related penalties were waived. The Company determined the liability and accrued interest based on its best estimates using the applicable taxable income, tax rate and interest rate. As at December 31, 2017, the estimate of probable taxes and accrued interest owing to the foreign jurisdiction was $2,058.

As a result of estimated taxes owing to the foreign jurisdiction, the Company intends to amend its previously filed income tax returns from 2013 to 2017 with the Canadian taxing authority, lowering its reported taxable income and recovering a portion of income taxes previously paid. As at December 31, 2017, the estimated income tax recovery was $477.

As at December 31, 2017, the total unreported liability consisting of income taxes and accrued interest owing to the foreign jurisdiction, offset by a recovery of previously paid income taxes to the Canadian taxing authority, was $1,581.

The Company restated its consolidated statements of financial position as at December 31, 2017 and January 1, 2017; its consolidated statements of net income and comprehensive income for the year ended December 31, 2017; its consolidated statement of changes in shareholders' equity for the year ended December 31, 2017; and its consolidated statement of cash flows for the year ended December 31, 2017.

Please refer to Note 5 of the consolidated financial statements for the year ended December 31, 2018 for the details of the impact of these adjustments.

SELECTED FINANCIAL INFORMATION

The following table highlights key financial information for the three months and year ended December 31, 2018 as compared to the prior comparable periods:

	Three months ended December 31, 2018	Three months ended December 31, 2017 (Restated)	Variance ($)	Variance (%)	Year ended December 31, 2018	Year ended December 31, 2017 (Restated)	Variance ($)	Variance (%)
Revenue	$ 8,233	$ 11,033	$ (2,800)	-25%	$ 46,704	$ 43,813	$ 2,891	7%
Cost of sales	3,946	6,078	(2,132)	-35%	21,057	20,522	535	3%
Gross profit	4,287	4,955	(668)	-14%	25,647	23,291	2,356	10%
Gross profit %	*52.1%*	*44.9%*			*54.9%*	*53.2%*		
Operating expenses								
General and administrative	1,719	2,459	(740)	-30%	7,035	11,133	(4,098)	-37%
Engineering	817	704	113	16%	3,525	3,159	366	12%
Sales and marketing	585	455	130	29%	2,529	1,186	1,343	113%
Total operating expenses	3,121	3,618	(497)	-14%	13,089	15,478	(2,389)	-16%
Operating income	1,166	1,337	(171)	-13%	12,558	7,813	4,745	61%
Finance income	70	16	54	338%	356	100	256	256%
Accretion expense on contingent consideration	(178)	(545)	367	-67%	(748)	(639)	(109)	17%
Change in fair value of contingent consideration	649	(264)	913	-346%	(141)	(264)	123	-47%
Gain on settlement of pre-existing relationships, net	-	3,200	(3,200)	-100%	-	3,200	(3,200)	-100%
Gain on sale of assets	-	-	-	0%	166	-	166	100%
Foreign exchange gain (loss)	1,332	179	1,153	644%	2,499	(1,903)	4,402	-231%
	1,873	2,586	(713)	-28%	2,132	494	1,638	332%
Income before taxes	3,039	3,923	(884)	-23%	14,690	8,307	6,383	77%
Income tax	340	1,349	(1,009)	-75%	4,007	2,758	1,249	45%
Net income	2,699	2,574	125	5%	10,683	5,549	5,134	93%
Other comprehensive loss on foreign exchange translation of subsidiary	(116)	-	(116)	100%	(125)	-	(125)	-100%
Total comprehensive income	$ 2,583	$ 2,574	$ 9	0%	$ 10,558	$ 5,549	$ 5,009	90%
Basic earnings per share	$ 0.03	$ 0.02	$ 0.01	50%	$ 0.10	$ 0.05	$ 0.05	100%
Diluted earnings per share	$ 0.03	$ 0.02	$ 0.01	50%	$ 0.10	$ 0.05	$ 0.05	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 settlement of pre-existing relationships, net; gain on sale of assets; foreign exchange gain (loss); and income tax.

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The following table highlights key financial information as at December 31, 2018 and 2017:

Financial Position	December 31, 2018	December 31, 2017 (Restated)	Variance ($)	Variance (%)
Cash	$ 42,407	$ 34,345	$ 8,062	23%
Total assets	64,872	55,549	9,323	17%
Total liabilities	11,207	10,470	737	7%
Total shareholders' equity	53,665	45,079	8,586	19%

The following table provides the details of our EBITDA for the three months and year ended December 31, 2018 and 2017:

	Three months ended December 31, 2018	Three months ended December 31, 2017 (Restated)	Year ended December 31, 2018	Year ended December 31, 2017 (Restated)
Net income for the period	$ 2,699	$ 2,574	$ 10,683	$ 5,549
Add (deduct)				
Finance income	(70)	(16)	(356)	(100)
Accretion expense on contingent consideration	178	545	748	639
Income tax	340	1,349	4,007	2,758
Depreciation of property and equipment	380	268	1,460	758
Amortization of intangible assets	332	1,154	1,316	1,182
Foreign exchange (gain) loss	(1,332)	(179)	(2,499)	1,903
Corporate Changes	-	-	-	2,953
Photon R&D Settlement	-	(3,200)	-	(2,249)
Relocation Costs	-	313	-	884
EBITDA[(1)] for the period	**$ 2,527**	**$ 2,808**	**$ 15,359**	**$ 14,277**

(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 tax, depreciation, amortization, foreign exchange (gain) loss. For the comparative period, EBITDA was further refined to remove the effect of non-recurring items.

The Company considers the following items as non-recurring:

- Corporate Changes – the Company made significant changes to its Board of Directors, management team and business structure in 2017. Additionally, the Company restructured its Oil and Gas business model from direct sales to a distributor model in 2017 before its eventual sale in 2018. One-time expenditures resulting from these changes include legal, consulting and recruiting fees, as well as severance and related payments.
- Photon R&D Settlement – the Company took actions following the unauthorized transfer of $4,500 to Photon Control R&D Ltd. ("Photon R&D") on June 3, 2016 (the "Unauthorized Transfer"), resulting in a settlement agreement on April 14, 2017 ("Settlement Agreement"). One-

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time expenditures related to this matter include gain on settlement of pre-existing lawsuits, loss on settlement of pre-existing agreements, settlement costs, legal, consulting and advisory fees.

- Relocation Costs – the Company completed the fit-out of and relocation to a new manufacturing facility in 2017. One-time expenditures include third-party services, labour costs and the cost of dismantling and restoring the vacated premises.

The following table provides key financial information for the three most recently completed fiscal years of the Company:

Statements of comprehensive income	**December 31, 2018**	**Year ended December 31, 2017 (Restated)**	**December 31, 2016 (Restated)**
Revenue	$ 46,704	$ 43,813	$ 32,172
Net earnings and total comprehensive income	10,558	5,549	6,223
Basic earnings per share	0.10	0.05	0.06
Diluted earnings per share	0.09	0.05	0.05
Statements of financial position			
Total assets	$ 64,872	$ 55,549	$ 43,191
Total non-current financial liabilities	2,211	2,986	-

OVERALL PERFORMANCE AND DISCUSSION OF OPERATIONS

Revenue

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

	Three months ended December 31,		**Variance**		**Year ended December 31,**		**Variance**	
	2018	**2017**	**($)**	**(%)**	**2018**	**2017**	**($)**	**(%)**
Semiconductor	$ 8,216	$ 10,980	$ (2,764)	-25%	$ 46,604	$ 43,521	$ 3,083	7%
Other	17	53	(36)	-68%	100	292	(192)	-66%
Total	**$ 8,233**	**$ 11,033**	**$ (2,800)**	**-25%**	**$ 46,704**	**$ 43,813**	**$ 2,891**	**7%**

Semiconductor revenues for the three months ended December 31, 2018 decreased 25% over the prior comparable period due to reduced levels of wafer fabrication equipment spending, along with continued inventory reduction strategies by our customers. Semiconductor revenues for the year ended December 31, 2018 increased 7% over the prior comparable period due to market conditions persisting in the semiconductor industry and the release of new products. Other revenues for the three months and year ended December 31, 2018 decreased over the prior comparable periods due to the sale of the Company's Oil and Gas product line earlier in 2018 and an increased focus on semiconductor revenues.

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

	Three months ended December 31, 2018	Three months ended December 31, 2017	Variance ($)	(%)	Year ended December 31, 2018	Year ended December 31, 2017	Variance ($)	(%)
United States	$ 3,466	$ 6,745	$ (3,279)	-49%	$ 26,285	$ 26,146	$ 139	1%
Asia	4,750	4,209	541	13%	20,340	17,440	2,900	17%
Rest of world	17	79	(62)	-79%	79	227	(148)	-65%
Total	**$ 8,233**	**$ 11,033**	**$ (2,800)**	**-25%**	**$ 46,704**	**$ 43,813**	**$ 2,891**	**7%**

For the three months ended December 31, 2018, revenues generated from customers located in the United States decreased 49% over the prior comparable period due to depressed wafer fabrication equipment spending as previously described. For the year ended December 31, 2018, revenues earned in the United States were flat compared to the prior year. For the three months and year ended December 31, 2018, revenues earned in Asia increased 13% and 17%, over the prior comparable periods, respectively, reflecting increased market share with existing OEM customers. There were nominal fluctuations in revenues earned from rest of world compared to the same year-ago periods.

Gross Profit

Gross profit decreased for the three months ended December 31, 2018 and increased for the year ended December 31, 2018 over the prior comparable periods, consistent to overall revenue levels of each respective period.

Gross margin increased to 52.1% for the quarter compared to 44.9% in the prior comparable period due to amortization charges recorded in 2017 on intangible assets arising from the acquisition of Photon R&D. This amortization charge, which was recorded from the acquisition date of April 14, 2017 to December 31, 2017, was fully absorbed in the fourth quarter of 2017 as the Company finalized the accounting for the transaction in the quarter.

Gross margin improved to 54.9% for the year ended December 31, 2018 compared to 53.2% in 2017, as a result of higher overall revenues driven by the overall growth in the semiconductor segment.

Operating Expenses

	Three months ended December 31, 2018	Three months ended December 31, 2017	Variance ($)	(%)	Year ended December 31, 2018	Year ended December 31, 2017	Variance ($)	(%)
Operating expenses, as reported	$ 3,121	$ 3,618	$ (497)	-14%	$ 13,089	$ 15,478	$ (2,389)	-15%
Deduct								
Depreciation of property and equipment	(184)	(150)	(34)	23%	(704)	(369)	(335)	91%
Amortization of intangible assets	(27)	(14)	(13)	93%	(97)	(42)	(55)	131%
Share-based payments	28	(286)	314	-110%	(666)	(1,172)	506	-43%
Corporate Changes	-	-	-	0%	-	(2,834)	2,834	-100%
Photon R&D Settlement	-	-	-	0%	-	(951)	951	-100%
Relocation Costs	-	(313)	313	-100%	-	(884)	884	-100%
Operating expenses, adjusted	**$ 2,938**	**$ 2,855**	**$ 83**	**3%**	**$ 11,622**	**$ 9,226**	**$ 2,396**	**26%**

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Total operating expenses for the quarter and year ended December 31, 2018 were $3,121 and $13,089 compared to $3,618 and $15,478 in the prior comparable periods, respectively. When adjusted for non-cash charges and non-recurring items such as Corporate Changes, Photon R&D Settlement and Relocation Costs, adjusted cash operating expenses were $2,938 and $11,622 compared to $2,855 and $9,226 in the prior comparable periods; the increases were attributable to a larger labour workforce to support the Company's future growth strategies, and higher development costs incurred for new products.

General and Administrative

	Three months ended December 31, 2018	Three months ended December 31, 2017	Variance ($)	Variance (%)	Year ended December 31, 2018	Year ended December 31, 2017	Variance ($)	Variance (%)
General and administrative expenses, as reported	$ 1,719	$ 2,459	$ (740)	-30%	$ 7,035	$ 11,133	$ (4,098)	-37%
Deduct								
Depreciation of property and equipment	(184)	(150)	(34)	23%	(704)	(369)	(335)	91%
Amortization of intangible assets	(23)	(12)	(11)	92%	(84)	(34)	(50)	147%
Share-based payments	101	(224)	325	-145%	(436)	(1,043)	607	-58%
Corporate Changes	-	-	-	0%	-	(2,738)	2,738	-100%
Photon R&D Settlement	-	-	-	0%	-	(951)	951	-100%
Relocation Costs	-	(313)	313	-100%	-	(884)	884	-100%
General and administrative, adjusted	**$ 1,613**	**$ 1,760**	**$ (147)**	**-8%**	**$ 5,811**	**$ 5,114**	**$ 697**	**14%**

General and administrative totalled $1,719 and $7,035 for the quarter and year compared to $2,459 and $11,133 in the prior comparable periods, respectively. When adjusted for non-cash charges and non-recurring items as described elsewhere, adjusted cash expenses totalled $1,613 and $5,811 for the three months and year ended December 31, 2018 compared to $1,760 and $5,114 in the prior comparable periods, respectively. The decrease in adjusted cash expenses for the quarter was a result of cost reduction measures taken on discretionary spending, and the increase for the year was due to increased workforce and one-time professional and listing fees incurred for the Company's graduation to the TSX in 2018.

Engineering

Engineering totalled $817 and $3,525 for the quarter and year compared to $704 and $3,159 in the prior comparable periods, respectively. The increase in engineering expenses for the quarter and year reflect increased staffing and material costs to support new product development and the Company's growth strategy.

Sales and Marketing

Sales and marketing for the quarter and year increased from $455 and $1,186 in 2017 to $585 and $2,529 in the current year due to increased staff levels to support current and future growth of the Company's revenues.

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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 $649 and a loss of $141 for the three months and year ended December 31, 2018 compared to a loss of $264 for the three months and year ended December 31, 2017. 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.

Gain on Sale of Assets

On February 15, 2018, the Company sold all of the assets and rights associated with its Optical Flow Meter product to King's Energy Inc. ("King's") for minimum gross proceeds of $350. The gross proceeds included immediate cash consideration of $200 and contingent consideration of at least $150, and is based on a percentage of revenues earned by King's for a five year period commencing from the transaction date. The carrying value of the disposed assets was $184, resulting in a gain on sale of assets totaling $166 for the year ended December 31, 2018.

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 gain for the quarter and year ended December 31, 2018 was due to the strengthening of the US dollar relative to the Canadian dollar throughout the period.

Income Tax

Income tax for the three months and year ended December 31, 2018 was $340 and $4,007 compared to $1,349 and $2,758 in the comparable periods in 2017.

EBITDA

EBITDA is defined as earnings before finance income, accretion expense, income tax, depreciation, amortization and foreign exchange gain (loss). For the comparative period, EBITDA was further refined to remove the effect of non-recurring items, including Corporate Changes, Photon R&D Settlement, and Relocation Costs as described elsewhere.

EBITDA for the quarter ended December 31, 2018 was $2,527 compared to $2,808 in the comparable period in 2017 due to soft demand for semiconductor capital equipment. EBITDA for the year ended December 31, 2018 were $15,359 compared to $14,277 in the comparable period in 2017, as a result of the strong market conditions persisting in the semiconductor industry in the first half of this year.

Order Backlog

Order backlog was $13,097 on December 31, 2018, a decrease from $14,355 at September 30, 2018 and $18,300 at December 31, 2017. Order backlog represents the unfulfilled value of sales orders received and scheduled for fulfillment in the remaining rolling 6-month period. The decrease in the order backlog is attributable to a slow-down in capital spending by semiconductor manufacturers after a very strong first half of this year.

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.

	Q1 2017 (Restated)	Q2 2017 (Restated)	Q3 2017 (Restated)	Q4 2017 (Restated)	Q1 2018	Q2 2018	Q3 2018	Q4 2018
Revenue	$ 11,879	$ 8,877	$ 12,024	$ 11,033	$ 13,854	$ 14,565	$ 10,052	$ 8,233
Gross profit	$ 7,116	$ 4,669	$ 6,551	$ 4,955	$ 7,879	$ 8,288	$ 5,193	$ 4,287
Gross margin %	60%	53%	54%	45%	57%	57%	52%	52%
Net income (loss)	$ 1,652	$ (305)	$ 1,628	$ 2,574	$ 2,882	$ 3,853	$ 1,249	$ 2,699
Basic EPS (loss)	$ 0.02	$ (0.00)	$ 0.01	$ 0.02	$ 0.03	$ 0.03	$ 0.01	$ 0.03
Diluted EPS (loss)	$ 0.01	$ (0.00)	$ 0.01	$ 0.02	$ 0.03	$ 0.03	$ 0.01	$ 0.03
Cash	$ 32,112	$ 25,053	$ 26,966	$ 34,345	$ 33,367	$ 40,794	$ 42,651	$ 42,407

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 two most recently completed quarters in 2018 declined as a result of softer demand for semiconductor capital equipment and inventory reduction strategies by our customers. The Company's net income for the quarters in 2017 were negatively affected by the non-recurring items as described elsewhere.

(In Canadian dollars, amounts in thousands except number of shares and per share amounts) 13

LIQUIDITY AND CAPITAL RESOURCES

The following table provides a summary of the Company's working capital as at December 31, 2018 and 2017:

	December 31, 2018	December 31, 2017 (Restated)	Variance
Cash	$ 42,407	$ 34,345	$ 8,062
Trade and other receivables	4,065	3,393	672
Inventories	5,515	4,052	1,463
Prepaid expenses and deposits	468	279	189
Assets held for sale	-	184	(184)
Total current assets	**52,455**	**42,253**	**10,202**
Accounts payable and accrued liabilities	3,524	4,170	(646)
Income taxes payable	4,354	1,993	2,361
Current portion of contingent consideration	1,118	1,321	(203)
Total current liabilities	**8,996**	**7,484**	**1,512**
Working capital	**$ 43,459**	**$ 34,769**	**$ 8,690**

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 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 currently active 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 its 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 $53,665 at December 31, 2018 (2017 - $45,079).

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.

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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 increase of working capital over December 31, 2017 was the result of its profitable operating performance, and significant capital expenditures in 2017 which did not reoccur in 2018.

Cash

At December 31, 2018, the Company held cash of $42,407 compared to $34,345 as at December 31, 2017, with the increase attributable to its strong operating performance and cash flow. The Company's cash position included the deployment of $3,015 towards its NCIB, resulting in the re-purchase and cancellation of 1,633,225 common shares as at December 31, 2018.

Trade and Other Receivables

Trade and other receivables of $4,065 increased from $3,393 as at December 31, 2017 due to the effect an early payment arrangement with a customer ending on December 31, 2017.

Inventories

Inventories as at December 31, 2018 totaled $5,515 compared to $4,052 as at December 31, 2017 with the increase occurring in anticipation of future demand from its major customers.

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 purchases 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 December 31, 2018, the Company's accounts payable and accrued liabilities, which are due for payment within 12 months of the balance sheet date, were $3,524, compared to $4,170 as at December 31, 2017; the decrease is the result of the reduction in the Company's purchases due to the slow-down in capital spending by semiconductor manufacturers after a very strong first half of this year.

ASSETS HELD FOR SALE

On January 31, 2018, the Company entered into a letter of intent with King's Energy Inc. (the "OFM Transaction") to sell all the assets and rights associated with the Company's Optical Flow Meter product. As a result of the OFM Transaction and in accordance with IFRS 5 – Non-Current Assets Held for Sale and Discounted Operations, the Company presented the Optical Flow Meter product as Assets Held for Sale at December 31, 2017.

On February 15, 2018 (the "Transaction Date"), the Company completed the OFM Transaction with King's Energy Inc. for minimum gross proceeds of $350. The gross proceeds were comprised of cash consideration of $200 and contingent consideration of at least $150.

The contingent consideration represents a minimum amount of royalties due under a royalty agreement and is calculated at a royalty rate on revenues earned by King's Energy Inc. from the Optical Flow Meter product for a five year period commencing from the Transaction Date.

The OFM Transaction included the sale of inventories, property and equipment and intangible assets, including the transfer of patents at the option of King's Energy Inc. at the conclusion of the royalty agreement. The carrying value of the asset disposed of on the Transaction Date was $184, consisting of inventories of $161 and intangible assets of $23. The OFM Transaction resulted in a gain of $166 recorded in the consolidated statements of net income and comprehensive income for the year ended December 31, 2018.

BUSINESS COMBINATION

The Company had historical relationships with Photon R&D and DCD Management Ltd., both considered related parties whereby the companies had directors and shareholders in common. These relationships involved the Company outsourcing its research and development function to Photon R&D and certain administrative functions to both Photon R&D and DCD Management Ltd. In connection with outsourcing its research and development function, the Company entered into an agreement dated October 1, 2008 ("R&D Agreement") including various Addenda between 2009 and 2013 ("Addenda") with Photon R&D. In August 2016, the Company commenced a lawsuit in the court against Photon R&D and other parties related to the Addenda and certain other matters.

On April 14, 2017 (the "Acquisition Date"), following a period of litigation, and as part of a settlement agreement with Photon R&D ("Settlement Agreement"), the Company completed the acquisition of certain tangible and intangible assets of Photon Control R&D Ltd. for cash consideration of $770 and contingent consideration of $4,088. In addition, the agreement included a gain on settlement of pre-existing relationships, net, which is comprised of:

Gain on settlement of pre-existing lawsuits	$	6,300
Loss on settlement of pre-existing agreements		(3,100)
Gain on settlement of pre-existing relationships, net	**$**	**3,200**

The acquisition included inventories, property and equipment, the transfer of all technical personnel and intellectual property to the Company as well as the clarification of the rights of ownership and exploitation of intellectual property. The Settlement Agreement also provided for the settlement of all amounts owing and payable, including the note receivable, between the Company and Photon R&D and certain other terms and conditions.

(In Canadian dollars, amounts in thousands except number of shares and per share amounts) 16

The contingent consideration relates to a royalty agreement included in the Settlement Agreement, which provides for quarterly royalties on revenues earned from defined products from January 1, 2017 to December 31, 2021.

The Settlement Agreement also includes terms of a settlement reached among the parties to resolve all legal actions commenced by the Company against Photon R&D and certain parties, as well as the counter-claims filed by Photon R&D against the Company. The gain on settlement of pre-existing lawsuits include avoided litigation costs, and the impact of future royalties as part of the Settlement Agreement.

The Settlement Agreement also terminated an unfavourable pre-existing R&D Agreement and Addenda, resulting in a loss on settlement of pre-existing agreements.

The following table summarizes the fair value of consideration paid on the Acquisition Date and the allocation of the purchase price to the fair value of assets acquired. This reflects the final purchase price allocation which was adjusted from provisional amounts recorded in the Company's unaudited interim consolidated financial statements during the 2017 fiscal year:

Cash on closing	$	770
Fair value of contingent consideration		4,088
Gain on settlement of pre-existing lawsuits		6,300
Loss on settlement of pre-existing agreements		(3,100)
Total consideration	**$**	**8,058**
Allocation to indentifiable net assets:		
Inventories	$	130
Property and equipment		640
Acquired technologies		4,439
Reacquired rights		2,000
Goodwill		849
Total allocated to net assets	**$**	**8,058**

The goodwill recognized on the acquisition represents the incremental cost not specifically attributable to the identifiable assets and liabilities acquired. The goodwill is underpinned by an assembled workforce that was transferred as well by the synergies the Company aims to achieve with the ability to completely serve the growing needs of its customers.

The contingent consideration is payable in cash and has been recorded as a liability on the consolidated statements of financial position at fair value based on management's best estimate of future revenues. The estimate uses a discount rate of 20% which is reflective of the inherent risk of the Company achieving these future revenues. As at the acquisition date, the fair value of the contingent consideration was estimated to be $4,088.

For the year ended December 31, 2018, the Company recognized a change in fair value of contingent consideration which resulted in a loss of $141 (2017 – $264) as a result of a revision in management's estimate of the amount based on current information regarding the underlying revenue performance.

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The following table shows a reconciliation of the contingent consideration liability:

Contingent consideration, January 1, 2017	**$ -**
Liability arising from business combination	4,088
Payment of contingent consideration	(986)
Accretion expense	639
Change in fair value of contingent consideration	264
Contingent consideration, December 31, 2017	**4,005**
Payment of contingent consideration	(1,565)
Accretion expense	748
Change in fair value of contingent consideration	141
Contingent consideration, December 31, 2018	**$ 3,329**

The table below presents the contingent consideration as at December 31, 2018 and 2017 recorded on the consolidated statements of financial position:

	December 31, 2018	**December 31, 2017**
Current portion	**$ 1,118**	$ 1,321
Long term portion	**2,211**	2,684
Total	**$ 3,329**	$ 4,005

The estimated amounts payable related to the contingent consideration could be higher or lower depending on the related future revenue outcome. Significant increases or decreases in related revenue would result in a higher or lower fair value of the contingent consideration liability, while significant increases or decreases in the discount rate and performance risk would result in a lower or higher fair value of the liability.

It is not practicable to estimate the revenue or profit of Photon R&D since the acquisition date as the business combination represents the integration of an external service provider, resulting in lower royalty costs and elimination of engineering support fees partially offset by increased staffing costs.

Costs directly attributable to the acquisition for the year ended December 31, 2017 of $951 were expensed in general and administrative and were included in the consolidated statements of net income and comprehensive income.

In addition to the arrangements described above, the Company severed its relationship with DCD Management Ltd. settling all amounts owing and bringing all previously outsourced administrative functions in-house.

OFF BALANCE SHEET ARRANGEMENTS

The Company had no off-balance sheet arrangements for the three months and year ended December 31, 2018 and 2017.

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COMMITMENTS

Under operating lease agreements for office premises, the Company is required to make future annual minimum lease payments as follows:

2019	$	426
2020		314
2021		285
2022		285
2023		285
2024 and onwards		285
Total	**$**	**1,880**

RELATED PARTY TRANSACTIONS

Transactions between the Company and its subsidiaries, which are related parties of the Company, have been eliminated on consolidation and not disclosed in this section.

The following table discloses the compensation amount of the Board of Directors and key management personnel in the ordinary course of their employment recognized as an expense during the reporting periods. Key management personnel have authority and responsibility for overseeing, planning, directing and controlling the activities of the Company and consist of the Company's executive officers. The remuneration of key management for the year ended December 31, 2018 and 2017 is as follows:

	Year ended			
		December 31, 2018		**December 31, 2017**
Cash-based payments	**$**	**1,702**	$	2,450
Share-based payments		**327**		938
Total	**$**	**2,029**	$	3,388

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

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CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of the 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. Information about critical judgments in applying accounting policies that have the most significant effect on the amounts recognized in the consolidated financial statements is as follows:

(a) Valuation of contingent consideration

The Company recognizes the fair value of contingent consideration relating to acquisitions on the date the transaction closes. Contingent consideration is classified as either a liability or equity. Contingent consideration classified as a liability is carried at fair value with changes in fair value recorded in the consolidated statements of net income and comprehensive income. Contingent consideration classified as equity is not remeasured subsequent to initial recognition.

Contingent consideration classified as a liability is measured at fair value based on management's best estimate of the probability of the attainment of specified revenue targets at the date of acquisition and is subsequently revalued at each financial reporting period. Management's estimate of the probability of the attainment of specified revenue targets takes into account management's evaluation of the revenue forecast for the respective acquired businesses and the risks thereon. Changes in management's estimate of the probability of achieving the specified target could have a material impact on the valuation of the contingent consideration classified as a liability. The current portion of contingent consideration is based on the Company's estimate of the value that will be payable within twelve months.

(b) Valuation of assets and liabilities in connection with a business combination

In accordance with IFRS 3, Business Combinations, accounting for an acquisition requires management to allocate the purchase price paid for an acquisition to the fair value of identified assets and liabilities acquired, with any residual recorded as goodwill. Assets and liabilities are recorded at fair value based on management's best estimate. Key estimates and assumptions include the forecasted financial performance of the acquired company; projected customer attrition of the acquired customer base; and the expected use of assets acquired and liabilities assumed among other considerations. Changes in certain estimates and assumptions could have a material impact on the valuation of assets and liabilities recognized on a business combination.

(c) Valuation of settlement of pre-existing relationships in connection with a business combination

In accordance with IFRS 3, Business Combinations, the acquirer and acquiree may have a relationship that existed before they contemplated the business combination, whether contractual or non-contractual. The fair value of any effective settlement of pre-existing relationships would be recognized separately as a gain or loss in the consolidated statements of net income and comprehensive income, and the consideration transferred in the acquisition would be increased or decreased by a corresponding amount. Settlement of pre-existing relationships is measured at fair value based on management's best estimate of the probability of the attainment of specified revenue targets at the date of settlement and costs avoided as a result of the settlement. Management's estimate of the probability of the attainment of specified revenue targets takes into account management's evaluation of the revenue forecast associated with the pre-existing relationship and the risks thereon.

NEW STANDARDS AND INTERPRETATIONS

IFRS 16, Leases ("IFRS 16")

IFRS 16 is effective for years commencing on or after January 1, 2019, and replaces IAS 17, Leases ("IAS 17"). The new standard eliminates the current operating/finance lease dual accounting model for lessees and replaces it with a single, on-balance sheet accounting model, similar to the current finance lease accounting.

IFRS 16 may be applied using a retrospective or modified retrospective approach on transition. The Company plans to transition to IFRS 16 in accordance with the modified retrospective approach and as such will not be required to restate comparative periods. Upon adoption, the incremental lease liability for leases currently classified as operating under IAS 17 will be measured at the present value of lease payments remaining in the lease term discounted using the Company's incremental borrowing rate on the date of transition. The leased asset will be measured as if IFRS 16 was always in effect, resulting in an adjustment to retained earnings on transition.

The Company is currently completing its transition project and quantifying the impact of the new standard under the modified retrospective approach. The recognition of all leases on balance sheet is expected to materially increase the assets and liabilities on the consolidated statements of financial position upon adoption. The increase relates to office premises currently accounted for as operating leases and disclosed as commitments.

In addition, the nature and timing of certain expenses related to leases previously classified as operating and presented in cost of sales and general and administrative will be changed and be presented in depreciation and finance costs.

Based on the preliminary evaluation performed by the Company, IFRS 16 will result in an increase in non-current assets of approximately $1,700, an increase of non-current liabilities of $1,800, and a decrease in retained earnings of $100 on transition as at January 1, 2019.

The actual impact of the initial application of IFRS may vary from the estimates provided for the following reasons:

- The Company has not finalized the assessment and testing of applicable internal controls over financial reporting; and
- The new accounting policies and accounting estimates and judgments are subject to change until the Company issues its first quarter for the period ending March 31, 2019.

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

IFRIC 23 is effective for years commencing on and after January 1, 2019. The standard provides guidance when there is uncertainty over income tax treatments including (but not limited to) whether uncertain tax treatments should be considered separately; assumptions made about the examination of tax treatments by tax authorities; the determination of taxable profit, tax bases, unused tax losses, unused tax credits, and tax rates; and, the impact of changes in facts and circumstances. Management is currently assessing the impact of the new interpretation.

FINANCIAL INSTRUMENTS

Measurement categories, fair values and valuation methods

Financial assets and liabilities have been classified into categories that determine their basis of measurement and, for items measured at fair value, whether changes in fair value are recognized in the statements of net income and comprehensive income. Those categories are: fair value through profit or loss; amortized cost; and, for assets, fair value through other comprehensive income.

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:

	December 31, 2018		December 31, 2017	
	Carrying Value	**Fair Value**	**Carrying Value (Restated)**	**Fair Value (Restated)**
Financial assets	**$ 46,472**	**$ 46,472**	$ 37,791	$ 37,791
Financial liabilities	**3,524**	**3,524**	4,170	4,170

Fair value hierarchy

Financial assets and liabilities that are recognized on the statements of financial position at fair value follow in a hierarchy that is based on the significance of the inputs used in making the measurements. The levels in the hierarchy are:

Level 1 - Quoted prices (unadjusted) in active markets for identical assets or liabilities

Level 2 - Inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly (that is, as prices) or indirectly (that is, derived from prices)

Level 3 - Inputs for the asset or liability that are not based on observable market data (that is, unobservable inputs)

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):

		Fair Value		
December 31, 2018	**Carrying Value**	**Level 1**	**Level 2**	**Level 3**
Financial liabilities				
Contingent consideration	$ 3,329	$ -	$ -	$ 3,329

		Fair Value		
December 31, 2017	**Carrying Value**	**Level 1**	**Level 2**	**Level 3**
Financial liabilities				
Contingent consideration	$ 4,005	$ -	$ -	$ 4,005

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The Company has 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 $39. During the year ended December 31, 2018, the Company recorded accretion expense of $748 in relation to contingent consideration, 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

Credit risk is the risk that a counter-party will not meet their obligations under a financial instrument or customer contract, leading to a financial loss being incurred by the Company. Financial instruments that potentially subject the Company to concentrations of credit risk consist of cash and cash equivalents, trade and other receivables, due from related party, note receivable and restricted cash.

The Company limits its exposure to credit loss by maintaining its cash and cash equivalents and restricted cash with high credit quality financial institutions in Canada and the United States.

The Company provides credit to its customers in the normal course of operations. The Company minimizes its credit risk associated with its trade and other receivables by performing credit evaluations on customers, maintaining regular and ongoing contact with customers, routinely reviewing the status of individual trade and other receivables balances and following up on overdue amounts.

From time to time, the Company does enter into agreements with very large customers that, due to the size of the transaction, will result in some concentration of credit risk. The Company estimates, on a continuing basis, the probable losses on its accounts and records a provision for losses based on the estimated realizable value of the accounts. Management does not believe that there is significant credit risk arising from any of the Company's current customers; however, should one of the Company's large customers be unable to settle amounts due, the impact on the Company could be significant. The maximum exposure to loss arising from trade and other receivables is equal to their total carrying amounts.

The following table provides information regarding the aging of trade and other receivables as at December 31, 2018 and 2017:

	Neither past due nor impaired	**Aged 1 - 30 days**	**Aged 31 - 60 days**	**Aged 61 - 90 days**	**Aged 90 + days**
As at December 31, 2018	**98%**	**2%**	**0%**	**0%**	**0%**
As at December 31, 2017	91%	9%	0%	0%	0%

As at December 31, 2018, 2% (2017 – 9%) of the Company's trade and other receivables was 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 year ended December 31, 2018, the Company incurred $93 of bad debts expense (2017 - $16).

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The Company reviews financial assets past due on an ongoing basis with the objective of identifying potential matters that could delay the collection of funds at an early stage.

Liquidity risk

Liquidity risk is the risk that the Company will not be able to meet its financial obligations as they come due. The Company manages liquidity risk through budgeting, ongoing management and forecasting of operating cash flows, review of trade and other receivables balances, management of cash, and use of credit facilities and equity financings when appropriate.

As at December 31, 2018, the Company had an $80 credit card facility with a Canadian Chartered bank.

Market risk

Foreign exchange risk

The Company operates internationally and generates revenues and incurs expenses in foreign currencies, holds cash, and has operations based in the United States carried through its wholly owned subsidiaries.

The Company's financial results are reported in Canadian dollars. The Company's exposure to foreign currency risk is primarily related to fluctuations in the value of the Canadian dollar relative to the United States dollar (USD"), as a majority of the Company's revenues are earned in USD. As such, the Company may be subject to material, realized and unrealized foreign exchange gains or losses resulting from above average changes in exchange rates between the Canadian and the United States dollar.

At December 31, 2018, the Company held net current monetary assets in USD equal to $27,095 (2017 - $34,966). The Company estimates the impact of a 10% change in the Canadian dollar exchange rate on its net current monetary assets to be $2,710 (2017 - $3,497).

Interest rate risk

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

The Company's objective in managing its cash is to provide sufficient funds to meet day-to-day requirements and placing excess cash in short-term deposits.

DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROLS OVER FINANCIAL REPORTING

During the fiscal year, the Company's Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO") conducted a review of the design of its disclosure controls and procedures ("DC&P") as well as its internal controls over financial reporting "(ICFR").

Disclosure Controls and Procedures

Management is responsible for establishing and maintaining a system of controls and procedures over the public disclosure of financial and non-financial information regarding the Company. Such controls and procedures are designed to provide reasonable assurance that relevant information is gathered and reported to senior management, including the Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), on a timely basis so that appropriate decisions can be made regarding public disclosure. Under the supervision of the CEO and CFO, the Company has evaluated its disclosure controls and procedures as at December 31, 2018 and has concluded that the DCP are adequately designed and operating effectively.

Internal Controls over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Management has designed internal control over financial reporting to provide reasonable assurance regarding the reliability of financial reporting and the preparation of its consolidated financial statements in accordance with IFRS.

During the year ended December 31, 2018, management reported a previously unreported liability of income taxes owing to a foreign jurisdiction and restated the Company's prior comparative financial information, as described above. The restatement was a result of a significant control deficiency that existed during years prior to 2018; this deficiency was rectified by management through changes in people, processes and controls, which allowed the Company to identify this issue, and to involve the appropriate experts to help resolve it. Therefore, there is no significant control deficiency to report during 2018.

Under the supervision of the CEO and CFO, the Company conducted a review and evaluation if its ICFR as at December 31, 2018, with the conclusion that the Company's system of ICFR as defined under NI 52-109 is adequately designed and operating effectively.

SUBSEQUENT EVENT

On January 2, 2019, the Company announced that TSX accepted the Company's notice of intention to make a Normal Course Issuer Bid (the "2019 NCIB") for its common shares through the facilities of TSX. This renewed the 2018 NCIB program that was set to expire on January 2, 2019. On January 4, 2019, the Company was able to commence making purchases of up to a maximum aggregate of 5,490,000 Common Shares, which represented approximately 5% of the Company's issued and outstanding common shares at the time.

During the period from January 1, 2019 to March 19, 2019, the Company re-purchased 1,628,100 common shares pursuant to the 2019 NCIB at a cost of $2,161.

OUTSTANDING SHARE DATA

As at December 31, 2018, the Company had 109,867,913 common shares issued and outstanding. As at March 20, 2019, the Company had 108,860,213 common shares were issued and outstanding.

As at December 31, 2018, the Company had 3,072,250 stock options outstanding entitling the holders to purchase one common share for each option held. As at March 20, 2019, the Company had 2,899,750 stock options outstanding.

As at December 31, 2018, the Company had restricted share units outstanding for 129,000 common shares. As at March 20, 2019, the Company had restricted share units outstanding for 129,000 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) 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.

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 quantity, price and delivery expectations;
- our ability to attract new business;
- our production being adversely affected by development, operating and regulatory risks;
- our ability to successfully complete new purchase orders along the timelines expected;
- continued and future demand for the Company’s products;
- continued sales to the Company’s major customers;
- continued financial health of the semiconductor industry;
- our ability to react to the cyclical nature of the semiconductor industry;
- our ability to continue and further enhance revenue diversification and open new market opportunities; 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 continue to drive 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 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.