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

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**FORM 10-Q**

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- QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.**  
For the quarterly period ended **September 30, 2019**
- or
- TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.**  
For the transition period from \_\_\_\_ to \_\_\_\_

Commission file number: 000-26966

**ADVANCED ENERGY INDUSTRIES, INC.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of incorporation or organization)  
**1625 Sharp Point Drive, Fort Collins, CO**  
(Address of principal executive offices)

**84-0846841**  
(I.R.S. Employer Identification No.)  
**80525**  
(Zip Code)

Registrant's telephone number, including area code: (970) 221-4670

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
<b>Common Stock, \$0.001 par value</b>	<b>AEIS</b>	<b>NASDAQ Global Select Market</b>

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark whether the registrant has submitted electronically if, every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes  No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer     Accelerated filer     Non-accelerated filer     Smaller reporting company     Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes  No

As of November 7, 2019, there were 38,331,630 shares of the registrant's Common Stock, par value \$0.001 per share, outstanding.

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FORM 10-Q  
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**PART I FINANCIAL STATEMENTS**

**ITEM 1. UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**

**ADVANCED ENERGY INDUSTRIES, INC.**  
**Unaudited Condensed Consolidated Balance Sheets**  
**(In thousands, except per share amounts)**

	September 30, 2019	December 31, 2018
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$ 340,402	\$ 349,301
Marketable securities	747	2,470
Accounts and other receivable, net of allowances of \$3,831 and \$1,856, respectively	250,151	100,442
Inventories	240,699	97,987
Income taxes receivable	2,124	2,220
Other current assets	45,757	10,173
Current assets from discontinued operations	84	5,855
Total current assets	879,964	568,448
Property and equipment, net	104,568	31,269
Operating lease right-of-use assets	111,193	—
Deposits and other assets	20,650	6,874
Goodwill	232,200	101,900
Intangible assets, net	189,601	54,910
Deferred income tax assets	56,488	47,099
Non-current assets from discontinued operations	755	5,984
<b>TOTAL ASSETS</b>	<b>\$ 1,595,419</b>	<b>\$ 816,484</b>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Accounts payable	\$ 210,647	\$ 39,646
Income taxes payable	7,070	13,258
Accrued payroll and employee benefits	48,685	21,775
Other accrued expenses	42,633	22,999
Customer deposits and other	10,804	7,345
Current portion of long-term debt	17,500	—
Current portion of operating lease liabilities	17,648	—
Current liabilities from discontinued operations	910	5,286
Total current liabilities	355,897	110,309
Long-term debt	325,769	—
Operating lease liabilities	95,101	—
Deferred income tax liabilities	46,992	6,988
Uncertain tax positions	15,708	14,318
Long-term deferred revenue	8,153	29,108
Other long-term liabilities	86,586	37,744
Non-current liabilities from discontinued operations	1,045	10,715
Total liabilities	935,251	209,182
Commitments and contingencies (Note 19)		
Stockholders' equity:		
Preferred stock, \$0.001 par value, 1,000 shares authorized, none issued and outstanding	—	—
Common stock, \$0.001 par value, 70,000 shares authorized; 38,332 and 38,164 issued and outstanding, respectively	38	38
Additional paid-in capital	101,757	97,418
Accumulated other comprehensive loss	(9,628)	(3,449)
Retained earnings	567,460	512,783
Advanced Energy stockholders' equity	659,627	606,790
Noncontrolling interest	541	512
Total stockholders' equity	660,168	607,302
<b>TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY</b>	<b>\$ 1,595,419</b>	<b>\$ 816,484</b>

The accompanying notes are an integral part of these Unaudited Condensed Consolidated Financial Statements.



**ADVANCED ENERGY INDUSTRIES, INC.**  
**Unaudited Condensed Consolidated Statements of Operations**  
(In thousands, except per share amounts)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Sales, net:				
Product	\$ 148,138	\$ 144,843	\$ 366,443	\$ 485,287
Services	26,989	28,239	84,237	79,444
Total sales, net	<u>175,127</u>	<u>173,082</u>	<u>450,680</u>	<u>564,731</u>
Cost of sales:				
Product	87,536	73,019	204,450	233,778
Services	14,100	14,524	42,873	40,534
Total cost of sales	<u>101,636</u>	<u>87,543</u>	<u>247,323</u>	<u>274,312</u>
Gross profit	73,491	85,539	203,357	290,419
Operating expenses:				
Research and development	24,546	18,451	67,675	55,283
Selling, general and administrative	36,401	25,386	93,027	78,792
Amortization of intangible assets	3,002	1,437	6,849	3,958
Restructuring expense	152	403	3,620	403
Total operating expenses	<u>64,101</u>	<u>45,677</u>	<u>171,171</u>	<u>138,436</u>
Operating income	9,390	39,862	32,186	151,983
Other income (expense), net	1,361	401	17,649	(58)
Income from continuing operations, before income taxes	10,751	40,263	49,835	151,925
Provision for income taxes	3,495	5,106	3,819	23,998
Income from continuing operations	7,256	35,157	46,016	127,927
Income (loss) from discontinued operations, net of income taxes	375	(371)	8,690	(226)
<b>Net income</b>	<u>\$ 7,631</u>	<u>\$ 34,786</u>	<u>\$ 54,706</u>	<u>\$ 127,701</u>
Income from continuing operations attributable to noncontrolling interest	10	7	29	82
<b>Net income attributable to Advanced Energy Industries, Inc.</b>	<u>\$ 7,621</u>	<u>\$ 34,779</u>	<u>\$ 54,677</u>	<u>\$ 127,619</u>
Basic weighted-average common shares outstanding	38,313	38,970	38,258	39,309
Diluted weighted-average common shares outstanding	38,489	39,195	38,457	39,594
<b>Earnings per share:</b>				
Continuing operations:				
Basic earnings per share	\$ 0.19	\$ 0.90	\$ 1.20	\$ 3.25
Diluted earnings per share	\$ 0.19	\$ 0.90	\$ 1.20	\$ 3.23
Discontinued operations:				
Basic earnings per share	\$ 0.01	\$ (0.01)	\$ 0.23	\$ (0.01)
Diluted earnings per share	\$ 0.01	\$ (0.01)	\$ 0.23	\$ (0.01)
<b>Net income:</b>				
Basic earnings per share	\$ 0.20	\$ 0.89	\$ 1.43	\$ 3.25
Diluted earnings per share	\$ 0.20	\$ 0.89	\$ 1.42	\$ 3.23

The accompanying notes are an integral part of these Unaudited Condensed Consolidated Financial Statements.

**ADVANCED ENERGY INDUSTRIES, INC.**  
**Unaudited Condensed Consolidated Statements of Comprehensive Income**  
**(In thousands)**

	<b>Three Months Ended</b>		<b>Nine Months Ended</b>	
	<b>September 30,</b>		<b>September 30,</b>	
	<b>2019</b>	<b>2018</b>	<b>2019</b>	<b>2018</b>
Net income	\$ 7,631	\$ 34,786	\$ 54,706	\$ 127,701
Other comprehensive income:				
Foreign currency translation	(4,849)	(735)	(6,281)	(4,679)
Minimum benefit retirement liability, net of income taxes	92	27	102	(9)
Comprehensive income	\$ 2,874	\$ 34,078	\$ 48,527	\$ 123,013
Comprehensive income attributable to noncontrolling interest	10	7	29	82
Comprehensive income attributable to Advanced Energy Industries, Inc.	\$ 2,864	\$ 34,071	\$ 48,498	\$ 122,931

The accompanying notes are an integral part of these Unaudited Condensed Consolidated Financial Statements.

**ADVANCED ENERGY INDUSTRIES, INC.**  
**Unaudited Condensed Consolidated Statements of Stockholders' Equity**  
(In thousands, except share amounts)

	Common Stock		Accumulated Other Comprehensive Income (Loss)				Non-controlling Interest	Total Stockholders' Equity
	Shares	Amount	Additional Paid-in Capital	Foreign Currency Translation	Minimum Benefit Retirement Liability	Retained Earnings		
Balances, December 31, 2017	39,604	\$ 40	\$ 184,843	\$ 4,695	\$ (2,162)	\$ 333,225	\$ —	\$ 520,641
Adoption of new accounting standards	—	—	—	—	—	19,706	—	19,706
Non-controlling interest from acquisition	—	—	—	—	—	—	431	431
Stock issued from equity plans	113	—	(4,127)	—	—	—	—	(4,127)
Stock-based compensation	—	—	4,494	—	—	—	—	4,494
Stock buyback	(181)	—	(12,750)	—	—	—	—	(12,750)
Foreign currency translation	—	—	—	2,472	—	—	—	2,472
Minimum benefit retirement liability	—	—	—	—	(168)	—	—	(168)
Net income	—	—	—	—	—	46,479	31	46,510
Balances, March 31, 2018	39,536	\$ 40	\$ 172,460	\$ 7,167	\$ (2,330)	\$ 399,410	\$ 462	\$ 577,209
Stock issued from equity plans	111	—	1,552	—	—	—	—	1,552
Stock-based compensation	—	—	1,943	—	—	—	—	1,943
Stock buyback	(407)	(1)	(25,308)	—	—	—	—	(25,309)
Foreign currency translation	—	—	—	(6,416)	—	—	—	(6,416)
Minimum benefit retirement liability	—	—	—	—	132	—	—	132
Net income	—	—	—	—	—	46,361	44	46,405
Balances, June 30, 2018	39,240	\$ 39	\$ 150,647	\$ 751	\$ (2,198)	\$ 445,771	\$ 506	\$ 595,516
Stock issued from equity plans	9	—	(81)	—	—	—	—	(81)
Stock-based compensation	—	—	1,024	—	—	—	—	1,024
Stock buyback	(533)	—	(30,962)	—	—	—	—	(30,962)
Foreign currency translation	—	—	—	(735)	—	—	—	(735)
Minimum benefit retirement liability	—	—	—	—	27	—	—	27
Net income	—	—	—	—	—	34,779	7	34,786
Balances, September 30, 2018	38,716	\$ 39	\$ 120,628	\$ 16	\$ (2,171)	\$ 480,550	\$ 513	\$ 599,575
Balances, December 31, 2018	38,164	\$ 38	\$ 97,418	\$ (590)	\$ (2,859)	\$ 512,783	\$ 512	\$ 607,302
Stock issued from equity plans	72	—	(1,707)	—	—	—	—	(1,707)
Stock-based compensation	—	—	3,199	—	—	—	—	3,199
Foreign currency translation	—	—	—	(1,975)	—	—	—	(1,975)
Minimum benefit retirement liability	—	—	—	—	(53)	—	—	(53)
Net income	—	—	—	—	—	15,370	8	15,378
Balances at March 31, 2019	38,236	\$ 38	\$ 98,910	\$ (2,565)	\$ (2,912)	\$ 528,153	\$ 520	\$ 622,144
Stock issued from equity plans	69	—	665	—	—	—	—	665
Stock-based compensation	—	—	937	—	—	—	—	937
Foreign currency translation	—	—	—	543	—	—	—	543
Minimum benefit retirement liability	—	—	—	—	63	—	—	63
Net income	—	—	—	—	—	31,686	11	31,697
Balances at June 30, 2019	38,305	\$ 38	\$ 100,512	\$ (2,022)	\$ (2,849)	\$ 559,839	\$ 531	\$ 656,049
Stock issued from equity plans	27	—	328	—	—	—	—	328
Stock-based compensation	—	—	917	—	—	—	—	917
Foreign currency translation	—	—	—	(4,849)	—	—	—	(4,849)
Minimum benefit retirement liability	—	—	—	—	92	—	—	92
Net income	—	—	—	—	—	7,621	10	7,631
Balances, September 30, 2019	38,332	\$ 38	\$ 101,757	\$ (6,871)	\$ (2,757)	\$ 567,460	\$ 541	\$ 660,168

The accompanying notes are an integral part of these Unaudited Condensed Consolidated Financial Statements.

**ADVANCED ENERGY INDUSTRIES, INC.**  
**Unaudited Condensed Consolidated Statements of Cash Flows**  
**(In thousands)**

	<b>Nine Months Ended September 30,</b>	
	<b>2019</b>	<b>2018</b>
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Net income	\$ 54,706	\$ 127,701
Income from discontinued operations, net of income taxes	8,690	(226)
Income from continuing operations, net of income taxes	46,016	127,927
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	15,301	9,488
Stock-based compensation expense	5,053	7,461
Provision for deferred income taxes	2,825	—
Gain on sale of central inverter service business	(14,804)	—
Net loss on disposal of assets	104	167
Changes in operating assets and liabilities, net of assets acquired:		
Accounts and other receivable, net	(23,292)	(6,739)
Inventories	(7,217)	(22,132)
Other assets	13,695	717
Accounts payable	23,676	(8,553)
Other liabilities and accrued expenses	(17,779)	49
Income taxes	(14,720)	10,098
Net cash provided by operating activities from continuing operations	28,858	118,483
Net cash provided by (used in) operating activities from discontinued operations	317	(4,550)
Net cash provided by operating activities	29,175	113,933
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Purchases of marketable securities	—	(93)
Proceeds from sale of marketable securities	1,742	6
Acquisitions, net of cash acquired	(365,798)	(93,801)
Issuance of notes receivable	(2,800)	—
Purchases of property and equipment	(15,681)	(16,586)
Net cash used in investing activities from continuing operations	(382,537)	(110,474)
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>		
Net proceeds from long-term borrowings	347,486	—
Payments on long-term borrowings	(4,375)	—
Purchase and retirement of common stock	—	(69,021)
Net payments related to stock-based award activities	(714)	(2,636)
Net cash provided by (used in) financing activities from continuing operations	342,397	(71,657)
<b>EFFECT OF CURRENCY TRANSLATION ON CASH</b>	<b>(3,185)</b>	<b>(722)</b>
<b>DECREASE IN CASH AND CASH EQUIVALENTS</b>	<b>(14,150)</b>	<b>(68,920)</b>
CASH AND CASH EQUIVALENTS, beginning of period	354,552	415,037
<b>CASH AND CASH EQUIVALENTS, end of period</b>	<b>340,402</b>	<b>346,117</b>
<b>Less cash and cash equivalents from discontinued operations</b>	<b>—</b>	<b>7,444</b>
<b>CASH AND CASH EQUIVALENTS FROM CONTINUING OPERATIONS, end of period</b>	<b>\$ 340,402</b>	<b>\$ 338,673</b>
<b>SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:</b>		
Cash paid for interest	\$ 1,049	\$ 171
Cash paid for income taxes	15,372	14,180
Cash received for refunds of income taxes	1,537	734

The accompanying notes are an integral part of these Unaudited Condensed Consolidated Financial Statements.

**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**  
**(In thousands, except per share data)**

**NOTE 1. BASIS OF PRESENTATION**

Advanced Energy Industries, Inc., a Delaware corporation, and its wholly-owned subsidiaries ("we," "us," "our," "Advanced Energy," or the "Company") design, manufacture, sell and support precision power products that transform, refine, and modify the raw electrical power from the utility and convert it into various types of highly-controllable usable power that is predictable, repeatable and customizable. Our power solutions enable innovation in complex semiconductor and thin film plasma processes such as dry etch, strip, chemical and physical deposition, high and low voltage applications such as process control, analytical instrumentation and medical equipment, and in temperature-critical thermal applications such as material and chemical processing. We also supply related instrumentation products for advanced temperature measurement and control, electrostatic instrumentation products for test and measurement applications, and gas sensing and monitoring solutions for a number of industrial markets. Our network of service support centers provides local repair and field service capability in key regions, provide upgrades and refurbishment services, and sell used equipment to businesses that use our products. In September 2019, we acquired Artesyn Embedded Power business adding new power products and technologies used in networking and computing, data center, and industrial and medical applications. As of December 31, 2015, we discontinued our engineering, production, and sales of our Inverter product line. As such, all Inverter product revenues, costs, assets and liabilities are reported in Discontinued Operations for all periods presented herein, and we currently report as a single unit. See *Note 4. Disposed and Discontinued Operations* for more information. Ongoing inverter repair and service operations are reported as part of our continuing operations.

In the opinion of management, the accompanying Unaudited Condensed Consolidated Financial Statements contain all adjustments, consisting of normal, recurring adjustments, necessary to present fairly the financial position of the Company as of September 30, 2019, and the results of our operations and cash flows for the three and nine months ended September 30, 2019 and 2018.

The Unaudited Condensed Consolidated Financial Statements included herein have been prepared pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC"). Certain information and footnote disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") have been condensed or omitted pursuant to such rules and regulations. These Unaudited Condensed Consolidated Financial Statements should be read in conjunction with the audited Consolidated Financial Statements and Notes thereto contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 and other financial information filed with the SEC.

**Estimates and Assumptions**

The preparation of our Consolidated Financial Statements in conformity with U.S. GAAP requires us to make estimates, assumptions and judgments that affect the reported amounts of assets and liabilities, and disclosure of contingent liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. We believe that the significant estimates, assumptions, and judgments when accounting for items and matters such as allowances for doubtful accounts, excess and obsolete inventory, warranty reserves, right-of-use assets and related liabilities, acquisitions, asset valuations, asset life, depreciation, amortization, recoverability of assets, impairments, deferred revenue, stock option and restricted stock grants, taxes, and other provisions are reasonable, based upon information available at the time they are made. Actual results may differ from these estimates, making it possible that a change in these estimates could occur in the near term.

**Critical Accounting Policies**

Our accounting policies are described in our audited Consolidated Financial Statements and Notes contained in our Annual Report on Form 10-K for the year ended December 31, 2018. See *Note 16. Leases* for the updated policies related to the implementation of ASU 2016-02, "Leases (Topic 842)."

**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**  
**(in thousands except per share data)**

**New Accounting Standards**

From time to time, the Financial Accounting Standards Board ("FASB") or other standards setting bodies issue new accounting pronouncements. Updates to the FASB Accounting Standards Codification ("ASC") are communicated through issuance of an Accounting Standards Update ("ASU"). Unless otherwise discussed, we believe that the impact of recently issued guidance, whether adopted or to be adopted in the future, is not expected to have a material impact on the Consolidated Financial Statements upon adoption.

***Recently issued accounting pronouncements not yet adopted***

In June 2016, the FASB issued ASU 2016-13, "Financial Instruments—Credit Losses (Topic 326)", Measurement of Credit Losses on Financial Instruments ("ASU 2016-13"). This ASU changes the methodology for measuring credit losses on financial instruments and the timing of when such losses are recorded. ASU 2016-13 is effective for fiscal years, and interim periods within those years, beginning after December 15, 2019. Early adoption is permitted for fiscal years, and interim periods within those years, beginning after December 15, 2018. We are currently assessing the impact ASU 2016-13 will have on our Consolidated Financial Statements.

In August 2018, the FASB issued ASU 2018-13, "Fair Value Measurement (Topic 820)" ("ASU 2018-13"). ASU 2018-13 modifies the disclosure requirements on fair value measurements in Topic 820, Fair Value Measurement, based on the concepts in the Concepts Statement, including the consideration of costs and benefits. ASU 2018-13 is effective for fiscal years ending after December 15, 2019 and shall be applied to all periods presented on a retrospective basis. Early adoption is permitted. We are currently assessing and do not believe ASU 2018-13 will have a significant impact on our fair value measurements disclosure requirements.

In August 2018, the FASB issued ASU 2018-14, "Compensation—Retirement Benefits—Defined Benefit Plans—General (Subtopic 715-20)" ("ASU 2018-14"). ASU 2018-14 eliminates requirements for certain disclosures and requires additional disclosures under defined benefit pension plans and other post-retirement plans. ASU 2018-14 is effective for fiscal years ending after December 15, 2020 and shall be applied to all periods presented on a retrospective basis. Early adoption is permitted. We are currently assessing and do not believe ASU 2018-14 will have a significant impact on our defined benefit plan disclosure requirements.

***Recently adopted accounting pronouncements***

In February 2018, the FASB issued ASU 2018-02, "Income Statement—Reporting Comprehensive Income" to give companies the option to reclassify the income tax effects on items within accumulated other comprehensive income resulting from the Tax Act to retained earnings. ASU 2018-02 is effective for fiscal years beginning after December 15, 2018, including interim periods within those years. We adopted ASU 2018-02 during the first quarter of fiscal year 2019 which did not materially impact on our Consolidated Financial Statements.

In June 2018, the FASB issued ASU 2018-07, "Compensation-Stock Compensation (Topic 718)", Improvements to Non-employee Share-based Payments ("ASU 2018-07"). This ASU expands the scope of Topic 718 to include share-based payment transactions for acquiring goods and services from non-employees. ASU 2018-07 is effective for fiscal years beginning after December 15, 2018. The new guidance is required to be applied retrospectively with the cumulative effect recognized at the date of initial application. We adopted ASU 2018-07 during the first quarter of fiscal year 2019 which did not materially impact on our Consolidated Financial Statements.

In August 2017, the FASB issued ASU 2017-12, "Derivatives and Hedging (Topic 815)", Targeted Improvements to Accounting for Hedging Activities ("ASU 2017-12"). This ASU simplifies certain aspects of hedge accounting and results in a more accurate portrayal of the economics of an entity's risk management activities in its financial statements. ASU 2017-12 is effective for fiscal years beginning after December 15, 2018, and the interim periods within those fiscal years. We adopted ASU 2017-12 during the first quarter of fiscal year 2019 using the modified retrospective basis. The adoption of the provisions of ASU 2017-12 did not materially impact the Company's Consolidated Balance Sheet or Statement of Operations.

**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**  
**(in thousands except per share data)**

In February 2016, the FASB issued ASU 2016-02, "Leases (Topic 842)," to increase transparency and comparability among organizations by recognizing lease right-of-use assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, including interim periods within the year of adoption. We adopted ASU 2016-02 using the modified retrospective approach and recorded \$38.2 million of operating lease right-of-use assets and \$38.4 million of operating lease liabilities as the cumulative-effect in the first quarter of fiscal year 2019. As of September 30, 2019, we have recorded \$111.2 million of operating lease right-of-use assets and \$112.7 million of operating lease liabilities. The adoption of ASU 2016-02 did not materially impact the Company's Consolidated Statement of Operations or Consolidated Statement of Cash Flows for the period ended September 30, 2019.

**NOTE 2. BUSINESS ACQUISITIONS**

*Artesyn's Embedded Power Business*

In September 2019, we completed the acquisition of Artesyn Embedded Technologies, Inc.'s ("Artesyn") Embedded Power business pursuant to the Stock Purchase Agreement ("Acquisition Agreement"), as amended, dated May 14, 2019. Pursuant to the Acquisition Agreement, we acquired all of Artesyn's issued and outstanding shares for a purchase price of \$367.8 million including the assumption of certain liabilities and subject to an adjustment for net working capital. In connection with the Acquisition Agreement, we entered into a credit agreement that provided us with aggregate financing of \$500.0 million which was used to partially fund the Artesyn acquisition. See *Note 22. Credit Facility* for additional details related to the credit agreement.

Artesyn's Embedded Power business is one of the world's largest providers of highly engineered, application-specific power supplies for demanding applications. This acquisition will diversify our product portfolio and give us access to additional growth markets, including hyperscale data centers, telecom infrastructure in next generation 5G networks, embedded industrial power applications and medical power for diagnostic and treatment applications.

The components of the fair value of the total consideration transferred for the acquisition is as follows:

	<b>Artesyn</b>
Cash paid for acquisition	\$ 389,023
Non-cash consideration	2,000
Total fair value of consideration transferred	391,023
Less cash acquired	(23,225)
Total purchase price	<u>\$ 367,798</u>

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**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**  
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The following table summarizes the estimated preliminary fair values of the assets acquired and liabilities assumed from the acquisition:

	<b>Preliminary: September 10, 2019</b>
Accounts and other receivable, net	\$ 128,221
Inventories	140,678
Property and equipment	65,016
Operating lease right-of-use assets	60,217
Goodwill	143,262
Intangible assets	125,000
Deferred income tax assets	14,767
Other assets	61,511
<b>Total assets acquired</b>	<b>738,672</b>
Accounts payable	144,652
Operating lease liability	59,634
Pension liability	48,494
Deferred income tax liabilities	37,218
Other liabilities	80,876
<b>Total liabilities assumed</b>	<b>370,874</b>
<b>Total fair value of net assets acquired</b>	<b>\$ 367,798</b>

A summary of the intangible assets acquired, amortization method and estimated useful lives are as follows:

	<b>Artesyn</b>	<b>Amortization Method</b>	<b>Useful Life</b>
Technology	\$ 30,000	Straight-line	5
Customer relationships	75,000	Straight-line	15
Tradename	20,000	Straight-line	10
Total	<u>\$ 125,000</u>		

Goodwill and intangible assets are recorded in the functional currency of the entity and are subject to changes due to translation at each balance sheet date. The goodwill represents expected operating synergies from combining operations with the acquired companies and the estimated value associated with the enhancements to our comprehensive product lines and access to new markets. Advanced Energy is still evaluating the fair value for the assets acquired and liabilities assumed related to the Artesyn acquisition. Accordingly, the purchase price allocation presented above is preliminary.

*LumaSense Technologies Holdings, Inc.*

In September 2018, we acquired LumaSense Technologies Holdings, Inc. ("LumaSense"), a privately held company with primary operations in Santa Clara, California; Frankfurt, Germany; and Ballerup, Denmark for a net purchase price of \$84.7 million in cash.

LumaSense designs, manufactures and sells a line of photonic-based measurement and monitoring solutions that are synergistic with the Company's precision power control technologies in both semiconductor and industrial markets allowing customers the ability to better control critical parameters of thermal and material processes. The acquisition of LumaSense expands our current electrostatic chuck solutions, including high voltage power supply and electrostatic metrology, complements our leading pyrometry solutions with additional fiber optic thermometry for an extended range of semiconductor applications in etch and deposition, provides integrated industrial temperature control and metrology applications for both thin films coating and thermal processing, and adds industrial pyrometry and gas sensing technologies.

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**ADVANCED ENERGY INDUSTRIES, INC.**  
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The components of the fair value of the total consideration transferred for our acquisition is as follows:

	<b>LumaSense</b>
Cash paid for acquisition	\$ 94,946
Cash acquired	(10,262)
<b>Total fair value of consideration transferred</b>	<b>\$ 84,684</b>

The following table summarizes the fair values of the assets acquired and liabilities assumed from our acquisition, including measurement period adjustments:

	<b>Preliminary: September 1, 2018</b>	<b>Measurement Period Adjustments</b>	<b>Adjusted: September 1, 2018</b>
Accounts and other receivable, net	\$ 7,167	\$ -	\$ 7,167
Inventories	9,372	-	9,372
Property and equipment	1,353	-	1,353
Goodwill	48,032	(11,774)	36,258
Intangible assets	26,000	17,240	43,240
Deferred income tax assets	8,116	(1,785)	6,331
Other assets	5,126	878	6,004
<b>Total assets acquired</b>	<b>105,166</b>	<b>4,559</b>	<b>109,725</b>
Accounts payable	5,734	-	5,734
Deferred income tax liabilities	7,984	3,715	11,699
Other liabilities	6,764	844	7,608
<b>Total liabilities assumed</b>	<b>20,482</b>	<b>4,559</b>	<b>25,041</b>
<b>Total fair value of net assets acquired</b>	<b>\$ 84,684</b>	<b>\$ -</b>	<b>\$ 84,684</b>

A summary of the intangible assets acquired, amortization method and estimated useful lives are as follows:

	<b>LumaSense</b>	<b>Amortization Method</b>	<b>Useful Life</b>
Technology	\$ 35,530	Straight-line	15
Customer relationships	4,360	Straight-line	10
Tradename	3,350	Straight-line	10
<b>Total</b>	<b>\$ 43,240</b>		

Goodwill and intangible assets are recorded in the functional currency of the entity and are subject to changes due to translation at each balance sheet date. The goodwill represents expected operating synergies from combining operations with the acquired companies and the estimated value associated with the enhancements to our comprehensive product lines. During the nine months ended September 30, 2019, we adjusted the estimated values of the assets acquired and liabilities assumed based upon the valuation report. These adjustments included additional liabilities, changes to deferred taxes and changes in the allocation of excess purchase price between goodwill and intangibles.

*Pro forma results for Advanced Energy Inc. giving effect to the LumaSense Technologies Holdings, Inc. and the Artesyn Embedded Power Business Transactions*

The following unaudited pro forma financial information presents the combined results of operations of Advanced Energy, LumaSense and Artesyn as if each of the acquisitions had been completed at the beginning of the fiscal year prior to their acquisition. The unaudited pro forma financial information is presented for informational purposes and is not indicative of the results of operations that would have been achieved if the acquisitions had taken place at the beginning of the year prior to the acquisition dates, nor are they indicative of future results.

**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**  
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The unaudited pro forma financial information for the three and nine months ended September 30, 2019 includes Advanced Energy's results, including the post-acquisition results of LumaSense, since September 1, 2018 and the post-acquisition results of Artesyn, since September 10, 2019. The unaudited pro forma financial information for the three and nine months ended September 30, 2018 combines Advanced Energy's results with the pre-acquisition results of LumaSense and Artesyn for that period.

The following tables present our unaudited pro forma results for the acquisitions of LumaSense and Artesyn:

	Three Months Ended September 30,			
	2019		2018	
	As Reported	Pro Forma	As Reported	Pro Forma
Total sales	\$ 175,127	\$ 292,669	\$ 173,082	\$ 333,050
Net income attributable to Advanced Energy Industries, Inc.	\$ 7,621	\$ 11,095	\$ 34,779	\$ 36,887
Earnings per share:				
Basic earnings per share	\$ 0.20	\$ 0.29	\$ 0.89	\$ 0.95
Diluted earnings per share	\$ 0.20	\$ 0.29	\$ 0.89	\$ 0.94

	Nine Months Ended September 30,			
	2019		2018	
	As Reported	Pro Forma	As Reported	Pro Forma
Total sales	\$ 450,680	\$ 863,190	\$ 564,731	\$ 1,037,113
Net income attributable to Advanced Energy Industries, Inc.	\$ 54,677	\$ 58,615	\$ 127,619	\$ 135,994
Earnings per share:				
Basic earnings per share	\$ 1.43	\$ 1.53	\$ 3.25	\$ 3.46
Diluted earnings per share	\$ 1.42	\$ 1.52	\$ 3.23	\$ 3.44

The unaudited pro forma results for all periods presented include adjustments made to account for certain costs and transactions that would have been incurred had the acquisitions been completed at the beginning of the year prior to the year of acquisition. These include adjustments to amortization charges for acquired intangible assets, interest and financing expenses, transaction costs, amortization of purchased gross profit and the alignment of various accounting policies. These adjustments are net of any applicable tax impact and were included to arrive at the pro forma results above.

LumaSense's operating results have been included in the Advanced Energy's operating results for the periods subsequent to the completion of the acquisition on September 1, 2018. During the three months ended September 30, 2019, LumaSense contributed total sales of \$12.0 million and net income of \$1.0 million. During the nine months ended September 30, 2019, LumaSense contributed total sales of \$35.8 million and net income of \$3.6 million.

Artesyn's operating results have been included in the Advanced Energy's operating results for the periods subsequent to the completion of the acquisition on September 10, 2019. During the three and nine months ended September 30, 2019, Artesyn contributed total sales of \$40.9 million and net income of \$1.2 million, including interest and other expense associated with the financing of the transaction. Cost of goods sold includes \$1.5 million of acquisition related costs during the three and nine months ended September 30, 2019. Selling, general and administrative expenses includes \$6.4 million and \$7.9 million of acquisition related costs during the three and nine months ended September 30, 2019, respectively.

### NOTE 3. REVENUE

#### Revenue Recognition

We recognize revenue when we have satisfied our performance obligations which typically occurs when control of the products or services has been transferred to our customers. The transaction price is based upon the standalone

**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**  
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selling price. In most transactions, we have no obligations to our customers after the date products are shipped, other than pursuant to warranty obligations. Shipping and handling fees billed to customers, if any, are recognized as revenue. The related shipping and handling costs are recognized in cost of sales. Support services include warranty and non-warranty repair services, upgrades, and refurbishments on the products we sell. Repairs that are covered under our standard warranty do not generate revenue.

**Practical Expedients**

We expense incremental costs of obtaining contracts when the amortization period of the costs is less than 1 year. These costs are included in selling, general, and administrative expenses.

**Nature of goods and services**

***Products***

Advanced Energy provides highly engineered, mission-critical, precision power conversion, measurement and control solutions to our global customers. We design, manufacture, sell and support precision power products that transform electrical power into various usable forms. Our power conversion products refine, modify and control the raw electrical power from a utility and convert it into power that is predictable, repeatable and customizable. Our products enable thin film manufacturing processes such as plasma enhanced chemical and physical deposition and etch for various semiconductor and industrial products, industrial thermal applications for material and chemical processes, and specialty power for critical industrial technology applications. We also supply thermal instrumentation products for advanced temperature measurement and control in these markets. As a result of the Artesyn acquisition we now sell precision power conversion products into the telecom and networking, data center, and additional medical and industrial markets.

Our products are designed to enable new process technologies, improve productivity, and lower the cost of ownership for our customers. We also provide repair and maintenance services for all our products. We principally serve original equipment manufacturers ("OEM") and end customers in the semiconductor, flat panel display, high voltage, solar panel, telecom and networking, data center, medical, and other industrial capital equipment markets. Our advanced power products are used in diverse markets, applications, and processes including the manufacture of capital equipment for semiconductor device manufacturing, thin film applications for thin film renewables and architectural glass, and for other thin film applications including flat panel displays, and industrial coatings. Our embedded power products are used in a wide range of applications, including 5G, datacenter including hyperscale and other industrial and medical applications.

***Services***

Our services group offers warranty and after-market repair services in the regions in which we operate, providing us with preventive maintenance opportunities. Our customers continue to pursue low cost of ownership of their capital equipment and are increasingly sensitive to the costs of system downtime. They expect that suppliers offer comprehensive local repair service and customer support. To meet these market requirements, we maintain a worldwide support organization comprising of both direct and indirect activities, through partnership with local distributors, primarily in the United States ("U.S."), the People's Republic of China ("PRC"), Japan, South Korea, Taiwan, Germany, Singapore and United Kingdom.

As part of our ongoing service business, we satisfy our service obligations under preventative maintenance contracts and extended warranties which had previously been offered on our discontinued inverter products. Any up-front fees received for extended warranties or maintenance plans are deferred. Revenue under these arrangements is recognized ratably over the underlying terms as we do not have historical information which would allow us to project the estimated service usage pattern at this time. In May 2019, we sold our grid-tied central inverter repair and service operation to a third party. In connection with this sale, approximately \$22.0 million of deferred revenue related to extended warranties and service contracts, were transferred to the buyer. See *Note 4. Disposed and Discontinued*

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*Operations* for additional information in relation to this sale. We have deferred revenue related to our extended warranties and service contracts totaling \$9.4 million as of September 30, 2019 and \$33.4 million as of December 31, 2018. We are expected to recognize between less than \$0.1 million and \$1.0 million per year through year 2035.

**Disaggregation of Revenue**

The following table presents our net sales by market, inclusive of both products and services, which reflects a reclassification in prior periods to conform to the current presentation:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Semiconductor Equipment	\$ 96,426	\$ 119,969	\$ 277,911	\$ 426,380
Telecom & Networking	10,016	—	10,016	—
Data Center Computing	13,498	—	13,498	—
Industrial & Medical	55,187	53,113	149,255	138,351
<b>Total</b>	<b>\$ 175,127</b>	<b>\$ 173,082</b>	<b>\$ 450,680</b>	<b>\$ 564,731</b>

The following table presents our net sales by geographic region, which includes a reclassification in prior periods to conform to the current presentation:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
North America	\$ 83,632	\$ 85,728	\$ 203,531	\$ 295,567
Asia	66,157	61,691	175,554	198,020
Europe	25,008	25,538	70,526	70,802
Other Countries	330	125	1,069	342
<b>Total</b>	<b>\$ 175,127</b>	<b>\$ 173,082</b>	<b>\$ 450,680</b>	<b>\$ 564,731</b>

The following table presents our net sales by extended warranty and service contracts recognized over time and our product and service revenue recognized at a point in time:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Product and service revenue recognized at point in time	\$ 174,827	\$ 171,806	\$ 448,964	\$ 561,578
Extended warranty and service contracts recognized over time	300	1,276	1,716	3,153
<b>Total</b>	<b>\$ 175,127</b>	<b>\$ 173,082</b>	<b>\$ 450,680</b>	<b>\$ 564,731</b>

**NOTE 4. DISPOSED AND DISCONTINUED OPERATIONS**

***Disposed Operations***

In May 2019, we sold our grid-tied central solar inverter services business to Bold Renewables Holdings, LLC (“Buyer”) for \$1.00 dollar and assumption of our initial product warranty and our extended warranty service obligations. In connection with this transaction, we entered into a Loan and Security Agreement with the Buyer. Under this agreement, we initially loaned \$2.8 million to the buyer at closing and have made available an additional \$5.25 million that may be borrowed in the future, subject to certain operating and liquidity covenants, for operating needs over the next ten years. The borrowings under the Loan and Security Agreement bear interest at 0% for the first seven years and 5% thereafter. Additionally, the Loan and Security Agreement provides for early payment discounts of 50% during the first three years, 45% for years four and five and 40% thereafter up to 30 days prior to the maturity of the Loan and Security Agreement. A discount on the initial \$2.8 million funding under the Loan and Security Agreement of \$2.3 million has

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been recognized as a reduction to the gain recognized on the sale. As a result of the transaction, we reduced our liabilities held in discontinued operations approximately \$10.9 million related to initial product warranty and reduced Other liabilities of our continuing operations of approximately \$22.0 million related to extended warranty service obligations as well as other assets and liabilities associated with the continuing grid-tied central solar inverter service and repair business. A \$14.8 million non-cash gain was recognized in Other income (expense) from continuing operations and an \$8.6 million non-cash gain, net of tax expense of \$2.4 million, was recognized in Income from discontinued operations.

**Discontinued Operations**

In December 2015, we completed the wind down of engineering, manufacturing and sales of our solar inverter product line (the "inverter business"). Accordingly, the results of our inverter business have been reflected as "Income (loss) from discontinued operations, net of income taxes" on our Consolidated Statements of Operations for all periods presented herein.

The effect of our sales of extended inverter warranties to our customers continues to be reflected in deferred revenue in our Consolidated Balance Sheets. Deferred revenue for extended inverter warranties and the associated costs of warranty service will be reflected in Sales and Cost of goods sold, respectively, from continuing operations in future periods in our Consolidated Statement of Operations, as the deferred revenue, is earned and the associated services are rendered. Extended warranties related to the inverter product line are no longer offered.

The significant items included in "Income (loss) from discontinued operations, net of income taxes" are as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Sales	\$ —	\$ —	\$ —	\$ —
Cost of sales	(700)	—	(900)	(88)
Total operating expense	133	—	514	31
Operating income from discontinued operations	567	—	386	57
Other income (expense)	(84)	(258)	10,835	(261)
Income (loss) from discontinued operations before income taxes	483	(258)	11,221	(204)
Provision (benefit) for income taxes	108	113	2,531	22
Income (loss) from discontinued operations, net of income taxes	<u>\$ 375</u>	<u>\$ (371)</u>	<u>\$ 8,690</u>	<u>\$ (226)</u>

Assets and Liabilities of discontinued operations within the Condensed Consolidated Balance Sheets are comprised of the following:

	September 30, 2019	December 31, 2018
Cash and cash equivalents	\$ —	\$ 5,251
Other current assets	—	406
Inventories	84	198
Current assets of discontinued operations	<u>\$ 84</u>	<u>\$ 5,855</u>
Other assets	\$ —	\$ 67
Deferred income tax assets	755	5,917
Non-current assets of discontinued operations	<u>\$ 755</u>	<u>\$ 5,984</u>
Accounts payable and other accrued expenses	\$ —	\$ 350
Accrued warranty	910	4,936
Current liabilities of discontinued operations	<u>\$ 910</u>	<u>\$ 5,286</u>
Accrued warranty	\$ 903	\$ 10,429
Other liabilities	142	286
Non-current liabilities of discontinued operations	<u>\$ 1,045</u>	<u>\$ 10,715</u>

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**NOTE 5. INCOME TAXES**

The following table sets out the tax expense and the effective tax rate for our income from continuing operations:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Income from continuing operations, before income taxes	\$ 10,751	\$ 40,263	\$ 49,835	\$ 151,925
Provision for income taxes	3,495	5,106	3,819	23,998
Effective tax rate	32.5 %	12.7 %	7.7 %	15.8 %

Our effective tax rates differ from the U.S. federal statutory rate of 21% for the three and nine months ended September 30, 2019 and 2018, respectively, primarily due to the benefit of earnings in foreign jurisdictions which are subject to lower tax rates, partially offset by additional GILTI tax in the U.S. The effective tax rate for the first nine months of 2019 was lower than the same period in 2018 primarily due to the release of liabilities for uncertain tax positions in the first quarter of 2019 based on the completion of additional procedures during the quarter to support a change in facts with respect to a specific prior period position. The higher effective tax rate in the three months ended September 2019 was primarily due to the non-deductibility of certain transaction costs related to the Artesyn transaction and a change in the indefinite reinvestment assertion of unremitted earnings in China and Korea.

**NOTE 6. EARNINGS PER SHARE**

Basic earnings per share ("EPS") is computed by dividing income available to common stockholders by the weighted-average number of common shares outstanding during the period. The computation of our diluted EPS is similar to the computation of our basic EPS except that the denominator is increased to include the number of additional common shares that would have been outstanding (using the if-converted and treasury stock methods), if our outstanding stock options and restricted stock units had been converted to common shares, and if such assumed conversion is dilutive.

The following is a reconciliation of the weighted-average shares outstanding used in the calculation of basic and diluted EPS for the three and nine months ended September 30, 2019 and 2018:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Income from continuing operations	\$ 7,256	\$ 35,157	\$ 46,016	\$ 127,927
Income from continuing operations attributable to noncontrolling interest	10	7	29	82
Income from continuing operations attributable to Advanced Energy Industries, Inc.	<u>\$ 7,246</u>	<u>\$ 35,150</u>	<u>\$ 45,987</u>	<u>\$ 127,845</u>
Basic weighted-average common shares outstanding	38,313	38,970	38,258	39,309
Assumed exercise of dilutive stock options and restricted stock units	176	225	199	285
Diluted weighted-average common shares outstanding	<u>38,489</u>	<u>39,195</u>	<u>38,457</u>	<u>39,594</u>
Continuing operations:				
Basic earnings per share	\$ 0.19	\$ 0.90	\$ 1.20	\$ 3.25
Diluted earnings per share	\$ 0.19	\$ 0.90	\$ 1.20	\$ 3.23

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The following restricted stock units were excluded in the computation of diluted earnings per share because they were anti-dilutive:

	<u>Three Months Ended</u> <u>September 30,</u>		<u>Nine Months Ended</u> <u>September 30,</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Restricted stock units	4	1	1	—

**Stock Buyback**

In September 2015, our Board of Directors authorized a program to repurchase up to \$150.0 million of our stock over a thirty-month period. In November 2017, our Board of Directors approved an extension of the share repurchase program to December 2019 from its original maturity of March 2018. In May 2018 our Board of Directors approved a \$50 million increase in its authorization to repurchase shares of Company common stock under this same program. As of September 30, 2019, we had \$24.9 million remaining for the future repurchase of shares of our common stock.

In order to execute the repurchase of shares of our common stock, the company periodically enters into stock repurchase agreements. During the three and nine months ended September 30, 2019 and 2018, the company has repurchased the following shares of common stock:

	<u>Three Months Ended</u> <u>September 30,</u>		<u>Nine Months Ended</u> <u>September 30,</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Amount paid to repurchase shares	\$ —	\$ 30,962	\$ —	\$ 69,021
Number of shares repurchased	—	533	—	1,121
Average repurchase price per share	\$ —	\$ 58.12	\$ —	\$ 61.57

There were no shares repurchased from related parties. All shares repurchased were recognized as a reduction to Additional paid-in capital. Repurchased shares were retired and assumed the status of authorized and unissued shares.

**NOTE 7. MARKETABLE SECURITIES AND ASSETS MEASURED AT FAIR VALUE**

Our investments with original maturities of more than three months at the time of purchase and that are intended to be held for no more than 12 months, are considered marketable securities available for sale.

Our marketable securities consist of certificates of deposit as follows:

	<u>September 30, 2019</u>		<u>December 31, 2018</u>	
	<u>Cost</u>	<u>Fair Value</u>	<u>Cost</u>	<u>Fair Value</u>
Total marketable securities	\$ 741	\$ 747	\$ 2,463	\$ 2,470

The maturities of our marketable securities available for sale as of September 30, 2019 are as follows:

	<u>Earliest</u>		<u>Latest</u>
Certificates of deposit	10/14/2019	to	7/28/2020

The value and liquidity of the marketable securities we hold are affected by market conditions, as well as the ability of the issuers of such securities to make principal and interest payments when due, and the functioning of the markets in which these securities are traded. As of September 30, 2019, we do not believe any of the underlying issuers of our marketable securities are at risk of default.

The following tables present information about our marketable securities measured at fair value, on a recurring basis, as of September 30, 2019 and December 31, 2018. The tables indicate the fair value hierarchy of the valuation

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techniques utilized to determine fair value. We did not have any financial liabilities measured at fair value, on a recurring basis, as of September 30, 2019 and December 31, 2018.

<b>September 30, 2019</b>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
Total marketable securities	\$ —	\$ 747	\$ —	\$ 747

  

<b>December 31, 2018</b>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
Total marketable securities	\$ —	\$ 2,470	\$ —	\$ 2,470

There were no transfers in or out of Level 1, 2, or 3 fair value measurements during three and nine months ended September 30, 2019.

**NOTE 8. DERIVATIVE FINANCIAL INSTRUMENTS**

We are impacted by changes in foreign currency exchange rates. We may manage these risks through the use of derivative financial instruments, primarily forward contracts with banks for one-month periods. These forward contracts manage the exchange rate risk associated with intercompany debt denominated in nonfunctional currencies. These derivative instruments are not designated as hedges; however, they do offset the fluctuations of our intercompany debt due to foreign exchange rate changes. We did not enter into any new foreign currency exchange forward contracts during the three and nine months ended September 30, 2019 and 2018. We did not have any currency exchange rate contracts outstanding as of September 30, 2019 and 2018.

During the three and nine months ended September 30, 2019 and 2018 the gains and losses recorded related to the foreign currency exchange contracts are as follows:

	<u>Three Months Ended</u> <u>September 30,</u>		<u>Nine Months Ended</u> <u>September 30,</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Foreign currency loss from foreign currency exchange contracts	\$ —	\$ —	\$ —	\$ (750)

These gains and losses were offset by corresponding gains and losses on the revaluation of the underlying intercompany debt and both are included as a component of Other income (expense), net, in our Unaudited Condensed Consolidated Statements of Operations.

**NOTE 9. ACCOUNTS AND OTHER RECEIVABLE**

Accounts and other receivable are recorded at net realizable value. Components of accounts and other receivable, net of reserves, are as follows:

	<u>September 30,</u> <u>2019</u>	<u>December 31,</u> <u>2018</u>
Amounts billed, net	\$ 233,464	\$ 80,709
Unbilled receivables	16,687	19,733
Total receivables, net	<u>\$ 250,151</u>	<u>\$ 100,442</u>

Amounts billed, net consist of amounts that have been invoiced to our customers in accordance with our terms and conditions and are shown net of an allowance for doubtful accounts.

Unbilled receivables consist of amounts where we have satisfied our contractual obligations related to inventory stocking contracts with customers. Such amounts typically become billable to the customer upon their consumption of the inventory managed under the stocking contracts. We anticipate that substantially all unbilled receivables will be invoiced and collected over the next twelve months.

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(in thousands except per share data)

**NOTE 10. INVENTORIES**

Our inventories are valued at the lower of cost or net realizable value and computed on a first-in, first-out (FIFO) basis. Components of inventories are as follows:

	September 30, 2019	December 31, 2018
Parts and raw materials	\$ 141,672	\$ 76,647
Work in process	13,810	6,644
Finished goods	85,217	14,696
Total	<u>\$ 240,699</u>	<u>\$ 97,987</u>

**NOTE 11. PROPERTY AND EQUIPMENT**

Property and equipment, net is comprised of the following:

	September 30, 2019	December 31, 2018
Buildings and land	\$ 1,633	\$ 1,737
Machinery and equipment	93,657	41,330
Computer and communication equipment	31,204	24,051
Furniture and fixtures	4,574	3,203
Vehicles	1,154	282
Leasehold improvements	33,666	20,593
Construction in process	6,777	867
	<u>172,665</u>	<u>92,063</u>
Less: Accumulated depreciation	(68,097)	(60,794)
Property and equipment, net	<u>\$ 104,568</u>	<u>\$ 31,269</u>

Depreciation expense recorded in continuing operations and included in selling, general and administrative expense is as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Depreciation expense	\$ 3,903	\$ 2,134	\$ 8,452	\$ 5,530

**NOTE 12. GOODWILL**

The following summarizes the changes in goodwill during the nine months ended September 30, 2019:

	Beginning Balance	Adjustments	Additions	Effect of Changes in Exchange Rates	Ending Balance
September 30, 2019	<u>\$ 101,900</u>	<u>\$ (11,774)</u>	<u>\$ 143,262</u>	<u>\$ (1,188)</u>	<u>\$ 232,200</u>

**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**  
(in thousands except per share data)

**NOTE 13. INTANGIBLE ASSETS**

Intangible assets consisted of the following as of September 30, 2019 and December 31, 2018:

	<u>Gross Carrying Amount</u>	<u>Accumulated Amortization</u>	<u>Net Carrying Amount</u>
<b>September 30, 2019</b>			
Technology	\$ 84,814	\$ (11,337)	\$ 73,477
Customer relationships	108,176	(15,745)	92,431
Trademarks and other	25,766	(2,073)	23,693
Total	<u>\$ 218,756</u>	<u>\$ (29,155)</u>	<u>\$ 189,601</u>
<b>December 31, 2018</b>			
Technology	\$ 39,879	\$ (7,927)	\$ 31,952
Customer relationships	35,509	(13,484)	22,025
Trademarks and other	2,501	(1,568)	933
Total	<u>\$ 77,889</u>	<u>\$ (22,979)</u>	<u>\$ 54,910</u>

Amortization expense related to intangible assets is as follows:

	<u>Three Months Ended September 30,</u>		<u>Nine Months Ended September 30,</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Amortization expense	\$ 3,002	\$ 1,437	\$ 6,849	\$ 3,958

Estimated amortization expense related to intangibles is as follows:

<b>Year Ending December 31,</b>	
2019 (remaining)	\$ 5,555
2020	20,307
2021	20,209
2022	19,953
2023	19,935
Thereafter	103,642
Total	<u>\$ 189,601</u>

**NOTE 14. RESTRUCTURING COSTS**

During 2018, we committed to a restructuring plan to optimize our manufacturing footprint and to improve our operating efficiencies and synergies related to our recent acquisitions. The table below summarizes the restructuring charges:

	<u>Three Months Ended September 30, 2019</u>	<u>Nine Months Ended September 30, 2019</u>	<u>Cumulative Cost Through September 30, 2019</u>
Severance and related charges	\$ 150	\$ 1,868	\$ 6,107
Facility relocation and closure charges	2	1,752	1,752
Total restructuring charges	<u>\$ 152</u>	<u>\$ 3,620</u>	<u>\$ 7,859</u>

**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**  
(in thousands except per share data)

The following table summarizes our restructuring liabilities at September 30, 2019:

	Balance at December 31, 2018	Cost Incurred and Charged to Expense	Cost Paid or Otherwise Settled	Effect of Changes in Exchange Rates	Balance at September 30, 2019
Total restructuring liabilities	\$ 3,806	\$ 3,620	\$ (5,560)	\$ 1	\$ 1,867

As of December 31, 2018, and September 30, 2019 the accrued restructuring liabilities related primarily to severance and related charges.

**NOTE 15. WARRANTIES**

Provisions of our sales agreements include customary product warranties, ranging from 12 months to 24 months following installation. The estimated cost of our warranty obligation is recorded when revenue is recognized and is based upon our historical experience by product and configuration.

Our estimated warranty obligation is included in Other accrued expenses in our Consolidated Balance Sheets. Changes in our product warranty obligation are as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Balances at beginning of period	\$ 3,263	\$ 1,981	\$ 2,084	\$ 2,312
Acquired warranty	3,618	213	4,818	305
Increases to accruals	286	436	890	920
Warranty expenditures	(414)	(590)	(1,045)	(1,492)
Effect of changes in exchange rates	(11)	(2)	(5)	(7)
Balances at end of period	\$ 6,742	\$ 2,038	\$ 6,742	\$ 2,038

**NOTE 16. LEASES**

We lease manufacturing and office space under non-cancelable operating leases. Some of these leases contain provisions for landlord funded leasehold improvements which are recorded as right of use assets with related liabilities. Additionally, several existing operating leases had deferred rent balances under ASC 840 which resulted in adjusted right of use asset balances recorded upon adoption of ASC 842. Most leases include one or more options to renew. We regularly evaluate the renewal options and when they are reasonably certain of exercise, we include the renewal period in our lease terms, along with the right-of-use assets ("ROU") and lease liabilities. In many cases, we have lease terms that are less than one year and therefore, we have elected the practical expedient to exclude these short-term leases from our ROU assets and lease liabilities. New leases are negotiated and executed to meet business objectives on an on-going basis.

Our leases do not provide an implicit rate. Accordingly, we use our incremental borrowing rate based on the information available at the lease commencement date in determining the present value of the lease payments. We have a centrally managed treasury function; therefore, based on the applicable lease terms and the current economic environment, we apply a portfolio approach for determining the incremental borrowing rate.

**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**  
**(in thousands except per share data)**

Maturities of our lease liabilities for all operating leases at September 30, 2019 are as follows:

<b>Year Ending December 31,</b>	
2019 (remaining)	\$ 4,626
2020	20,196
2021	18,527
2022	13,713
2023	11,080
Thereafter	71,003
Total lease payments	\$ 139,145
Less: Interest	(26,396)
Present value of lease liabilities	\$ 112,749

The weighted average remaining lease term and discount rate for all our operating leases as of September 30, 2019 were as follows:

	<b>Weighted Average Remaining Lease Term</b>	<b>Weighted Average Discount Rate</b>
Operating leases	8.7	4.03 %

Cash paid for amounts included in the measurement of lease liabilities for the nine months ended September 30, 2019 was as follows:

	<b>Cash Outflow</b>
Operating leases	\$ 8,850

**NOTE 17. PENSION LIABILITY**

In connection with the acquisitions of HiTek Power Group, LumaSense and Artesyn we assumed the liabilities of various pension plans. In order to measure the expense and related benefit obligation, various assumptions are made including discount rates used to value the obligation, expected return on plan assets used to fund these expenses and estimated future inflation rates. These assumptions are based on historical experience as well as facts and circumstances. An actuarial analysis is used to measure the expense and liability associated with pension benefits. We are committed to make annual fixed payments of \$0.8 million into the HiTek Power Limited Pension Scheme through April 30, 2024, and then \$1.7 million from May 1, 2024 through November 30, 2033. We are obligated to fund the other pension liabilities each year as incurred.

The net pension liability is included in Other long-term liabilities in our Consolidated Balance Sheets as follows:

	<b>September 30, 2019</b>	<b>December 31, 2018</b>
Pension liability	\$ 66,450	\$ 19,266

**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**  
**(in thousands except per share data)**

The following table sets forth the components of net periodic pension cost for the three and nine months ended September 30, 2019 and 2018:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Service cost	\$ 124	\$ —	\$ 124	\$ —
Interest cost	274	205	668	637
Expected return on plan assets	(160)	(151)	(496)	(470)
Amortization of actuarial gains and losses	90	64	323	333
Net periodic pension cost	<u>\$ 328</u>	<u>\$ 118</u>	<u>\$ 619</u>	<u>\$ 500</u>

**NOTE 18. STOCK-BASED COMPENSATION**

On May 4, 2017, the shareholders approved the Company's 2017 Omnibus Incentive Plan ("the 2017 Plan") and all shares that were then available for issuance under the 2008 Omnibus Incentive Plan are now available for issuance under the 2017 Plan. The 2017 Plan provides for the grant of stock options, stock appreciation rights, restricted stock, stock units (including deferred stock units), unrestricted stock, and dividend equivalent rights. Any of the awards issued under the 2017 Plan may be issued as performance-based awards to align compensation awards to the attainment of annual or long-term performance goals. As of September 30, 2019, there were 3.0 million shares reserved and 2.3 million shares available for grant under the 2017 Plan.

Restricted stock units ("RSU's") are generally granted with a grant date fair value equal to the market price of our stock at the date of grant and with generally a three or four-year vesting schedule or performance-based vesting as determined at the time of grant.

Stock option awards are generally granted with an exercise price equal to the market price of our stock at the date of grant and with either a three or four-year vesting schedule or performance-based vesting as determined at the time of grant. Stock option awards generally have a term of 10 years.

We recognize stock-based compensation expense based on the fair value of the awards issued and the functional area of the employee receiving the award. Stock-based compensation for the three and nine months ended September 30, 2019 and 2018 was as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Stock-based compensation expense	\$ 917	\$ 1,024	\$ 5,053	\$ 7,461

Changes in the outstanding RSU awards during the three and nine months ended September 30, 2019 were as follows:

	Three Months Ended September 30, 2019		Nine Months Ended September 30, 2019	
	Number of RSUs	Weighted-Average Grant Date Fair Value	Number of RSUs	Weighted-Average Grant Date Fair Value
RSUs outstanding at beginning of period	553	\$ 56.23	352	\$ 58.17
RSUs granted	18	\$ 57.01	377	\$ 52.18
RSUs vested	(7)	\$ 27.69	(153)	\$ 50.90
RSUs forfeited	(30)	\$ 58.27	(42)	\$ 51.74
RSUs outstanding at end of period	<u>534</u>	<u>\$ 56.52</u>	<u>534</u>	<u>\$ 56.52</u>

**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**  
(in thousands except per share data)

Changes in the outstanding stock option awards during the three and nine months ended September 30, 2019 were as follows:

	Three Months Ended September 30, 2019		Nine Months Ended September 30, 2019	
	Number of Options	Weighted-Average Exercise Price per Share	Number of Options	Weighted-Average Exercise Price per Share
Options outstanding at beginning of period	213	\$ 21.50	230	\$ 20.73
Options exercised	(21)	\$ 22.90	(37)	\$ 18.03
Options expired	(1)	\$ 11.21	(2)	\$ 8.95
Options outstanding at end of period	191	\$ 21.37	191	\$ 21.37

**NOTE 19. COMMITMENTS AND CONTINGENCIES**

We have firm purchase commitments and agreements with various suppliers to ensure the availability of components. Purchase commitments as of September 30, 2019 are approximately \$179.7 million. Our policy with respect to all purchase commitments is to record losses, if any, when they are probable and reasonably estimable. We continuously monitor these commitments for exposure to potential losses and will record a provision for losses when it is deemed necessary.

We are involved in disputes and legal actions arising in the normal course of our business. There have been no material developments in legal proceedings in which we are involved during the three and nine months ended September 30, 2019. We are experiencing increasing claims from customers and suppliers and increasing litigation related to the legacy inverter product line.

**NOTE 20. RELATED PARTY TRANSACTIONS**

Members of our Board of Directors hold various executive positions and serve as directors at other companies, including companies that are our customers. During the three and nine months ended September 30, 2019 and 2018, we engaged in the following transactions with companies related to members of our Board of Directors, as described below:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Sales to related parties	\$ 287	\$ —	\$ 1,299	\$ 389
Number of related party customers	1	—	1	1

Our accounts receivable balance from related party customers with outstanding balances as of September 30, 2019 and December 31, 2018 is as follows:

	September 30, 2019	December 31, 2018
Accounts receivable from related parties	\$ 41	\$ 109
Number of related party customers	1	1

**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**  
(in thousands except per share data)

**NOTE 21. SIGNIFICANT CUSTOMER INFORMATION**

The following table summarizes sales, and percentages of sales, by customers that individually accounted for 10% or more of our sales for the three and nine months ended September 30, 2019 and 2018:

	<b>Three Months Ended September 30,</b>			
	<b>2019</b>		<b>2018</b>	
Applied Materials, Inc.	\$ 38,957	22.2 %	\$ 60,546	35.0 %
LAM Research	21,991	12.6 %	19,878	11.5 %

  

	<b>Nine Months Ended September 30,</b>			
	<b>2019</b>		<b>2018</b>	
Applied Materials, Inc.	\$ 108,978	24.2 %	\$ 198,159	35.1 %
LAM Research	61,364	13.6 %	92,368	16.4 %

The following table summarizes the accounts receivable balances, and percentages of the total accounts receivable, for customers that individually accounted for 10% or more of accounts receivable as of September 30, 2019 and December 31, 2018:

	<b>September 30,</b>		<b>December 31,</b>	
	<b>2019</b>		<b>2018</b>	
Applied Materials, Inc.	\$ 30,669	12.3 %	\$ 34,301	34.2 %
LAM Research	*	* %	12,181	12.1 %

\* Customer's balance was less than 10% of the total accounts receivable balance.

**NOTE 22. CREDIT FACILITY**

In September 2019, in connection with the Artesyn Acquisition Agreement, the Company entered into a credit agreement ("Credit Agreement") that provided aggregate financing of \$500.0 million, consisting of a \$350.0 million senior unsecured term loan facility (the "Term Loan Facility") and a \$150.0 million senior unsecured revolving facility (the "Revolving Facility"). Both the Term Loan Facility and Revolving Facility mature on September 10, 2024.

The Revolving Facility and Term Loan Facility bear interest, at the option of the Company, at a rate based on a reserve adjusted Eurodollar Rate or a Base Rate, as defined in the Credit Agreement, plus an applicable margin. Additionally, the Revolving Facility is subject to an unused line fee. As of September 30, 2019, the effective interest rate for the Revolving Facility and Term Loan Facility was 2.79% and the effective rate for the unused line fee was 0.10%. As of September 30, 2019, the Company had \$150.0 million available to withdraw on the Revolving Facility and was in compliance with all covenants.

In connection with the entering into of the Credit Agreement, the Company terminated the Loan Agreement, as amended (the "Loan Agreement") which previously provided a revolving line of credit of up to \$150.0 million subject to certain funding conditions. The Company expensed all unused line of credit fees at the time of termination of the Loan Agreement. We did not borrow against the Loan Agreement at any time during the nine months ended September 30, 2019.

**ADVANCED ENERGY INDUSTRIES, INC.**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**  
**(in thousands except per share data)**

The debt obligation on our Condensed Consolidated Balance Sheets consists of the following:

	<b>September 30, 2019</b>	<b>December 31, 2018</b>
<b>Debt:</b>		
Term Loan Facility	\$ 345,625	\$ —
Revolving Facility	—	—
Other debt issuance costs	(2,356)	—
<b>Total debt</b>	<b>343,269</b>	<b>—</b>
Less current portion of debt	(17,500)	—
<b>Total long-term debt</b>	<b>\$ 325,769</b>	<b>\$ —</b>

Contractual maturities of the Company's debt obligations, excluding amortization of debt issuance costs, as of are as September 30, 2019 follows:

	<b>Amount</b>
2019 (remaining)	\$ 4,375
2020	17,500
2021	17,500
2022	17,500
2023	17,500
2024	271,250

Interest expense and unused line of credit fees were recorded in Other income (expense), net, in our Consolidated Statements of Operations as follows:

	<b>Three Months Ended September 30,</b>		<b>Nine Months Ended September 30,</b>	
	<b>2019</b>	<b>2018</b>	<b>2019</b>	<b>2018</b>
Interest expense	\$ 703	\$ —	\$ 703	\$ —
Amortization of debt issuance costs	45	—	45	—
Unused line of credit fees and other	60	57	179	171
<b>Total interest expense</b>	<b>\$ 808</b>	<b>\$ 57</b>	<b>\$ 927</b>	<b>\$ 171</b>

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

### Special Note on Forward-Looking Statements

The following discussion contains, in addition to historical information, forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Statements in this report that are not historical information are forward-looking statements. For example, statements relating to our beliefs, expectations and plans are forward-looking statements, as are statements that certain actions, conditions or circumstances will continue. The inclusion of words such as "anticipate," "expect," "estimate," "can," "may," "might," "continue," "enables," "plan," "intend," "should," "could," "would," "likely," "potential," or "believe," as well as statements that events or circumstances "will" occur or continue, indicate forward-looking statements. Forward-looking statements involve risks and uncertainties, which are difficult to predict and many of which are beyond our control. Therefore, actual results could differ materially and adversely from those expressed in any forward-looking statements. Neither we nor any other person assumes responsibility for the accuracy and completeness of such forward-looking statements and readers are cautioned not to place undue reliance on forward-looking statements.

For additional information regarding factors that may affect our actual financial condition, results of operations and accuracy of our forward-looking statements, see the information under the caption "Risk Factors" in Part II, Item 1A of this Quarterly Report on Form 10-Q and, in our Annual Report on Form 10-K for the year ended December 31, 2018. We undertake no obligation to revise or update any forward-looking statements for any reason.

### *BUSINESS AND MARKET OVERVIEW*

Advanced Energy provides highly-engineered, mission-critical, precision power conversion, measurement and control solutions to our global customers. We design, manufacture, sell and support precision power products that transform, refine, and modify the raw electrical power from the utility and convert it into various types of highly- controllable usable power that is predictable, repeatable and customizable. Our power solutions enable innovation in complex semiconductor and thin film plasma processes such as dry etch, strip, chemical and physical deposition, high and low voltage applications such as process control, analytical instrumentation and medical equipment, and in temperature-critical thermal applications such as material and chemical processing. We also supply related instrumentation products for advanced temperature measurement and control, electrostatic instrumentation products for test and measurement applications, and gas sensing and monitoring solutions for multiple industrial markets. Our network of global service support centers provides local repair and field service capability in key regions as well as provide upgrades and refurbishment services, and sales of used equipment to businesses that use our products.

The Company operates in a single segment structure for power electronics conversion products. The acquisition of Artesyn adds additional products and verticals to our business. Following the acquisition, we will continue to be organized on a global, functional basis in order to achieve the substantial synergies associated with the acquisition. We operate in four vertical markets or applications and will provide Revenue information to enable tracking of market trends. We will also provide information on an organic and in organic basis to improve comparability during the interim periods.

### *Recent Acquisition*

In September 2019, we completed the acquisition of Artesyn Embedded Technologies, Inc.'s ("Artesyn") Embedded Power business. Artesyn's Embedded Power business is one of the world's largest providers of highly engineered, application-specific power supplies for demanding applications. This acquisition diversifies our product portfolio and gives us access to attractive growth markets, including hyperscale data centers, telecom infrastructure in next generation 5G networks, embedded industrial power applications and medical power for diagnostic and treatment applications.

For additional information, see *Note 2. Business Acquisitions* in Part I, Item 1 "Unaudited Condensed Consolidated Financial Statements".

### *Semiconductor Equipment Market*

Growth in the semiconductor market is driven by growing IC content across many industries, increased demand for processing and storage in advanced applications such as artificial intelligence or autonomous vehicles, and the rapid adoption of advanced mobile connectivity solutions such as 5G, enhancing existing and enabling new wireless applications. To address the long-term growing demand for semiconductor devices, the industry continues to invest in production capacities for advanced logic devices at the 7nm technology node and beyond, the latest memory devices including 3D-NAND, DRAM and new emerging memories such as MRAM, and back-end test and advanced wafer-level packaging. The industry's transition to advanced technology nodes in logic and DRAM and to increased layers in 3D memory devices is requiring an increased number of etch and deposition process tools and higher content of our advanced power solutions per tool. As etching and deposition processes become more challenging due to increasing aspect ratios in advanced 3D devices, more advanced radio frequency (RF) and direct current (DC) technologies are needed, and we are meeting these challenges by providing a broader range of more complex RF and DC power solutions. Beyond etch and deposition processes, the growing complexity at the advanced nodes also drive a higher number of other processes across the fab, including inspection, metrology, thermal, ion implantation, and semiconductor test, where Advanced Energy is actively participating as a critical technology provider. In addition, our global support services group offers comprehensive local repair service, upgrade and retrofit offerings to extend the useable life of our customers' capital equipment for additional technology generations. The acquisition of Artesyn in September 2019 expanded Advanced Energy's reach within the Semiconductor Equipment market by targeting back-end test and assembly equipment makers.

Starting in the second half of 2018 and continuing into the first half of 2019, the semiconductor industry went through a period of weakening equipment investment as a result of slowing growth in end market demand for semiconductor devices, ongoing digestion of equipment capacity, and consumption of existing inventory. In the third quarter of 2019, demand from the semiconductor equipment markets improved slightly from the first half of 2019 run-rate as a result of increased investments in advanced logic and foundry equipment and by increased investment by Chinese fabricators, which drove increased demand for our products. Based on limited visibility, we expect demand from the Semiconductor Equipment markets will continue to improve in the fourth quarter. However, it is difficult to determine when or if overall market investment in semiconductor capital equipment will return to 2017 levels.

### *Industrial & Medical Markets*

Customers in the Industrial & Medical markets incorporate our industrial advanced power, embedded power and measurement products into a wide variety of equipment used in applications such as advanced material fabrication, medical device, analytical instrumentation, test and measurement equipment, robotics, motor drives and connected light-emitting diodes. Demand levels for our industrial technology products in the first three quarters of 2019 have been affected by weakening macro-economic conditions, particularly in Europe and China, and slowed demand related to hard coating for consumer electronic devices and flat panel displays, partially offset by strengthening demand for crystalline-silicon solar cell production.

In Industrial & Medical markets, we remain focused on taking our products into new applications and world regions across Asia, Europe and North America. Our acquisition of LumaSense in September 2018 further expanded our presence in pyrometry and other temperature measurement applications and has contributed to our year-to-date growth in industrial technology applications as compared to the prior year. With the acquisition of Artesyn in September 2019, we have substantially expanded our reach in Industrial & Medical markets with a broad range of products and applications. In addition, the acquisition meaningfully increased our distribution channel by adding a broad set of distributors, global channel partners and regional manufacturer representatives. Artesyn, acquired on September 10, 2019, also contributed revenue from the Industrial & Medical markets during the third quarter of 2019, and it is expected to be a bigger revenue contributor in the fourth quarter of 2019 as it will be part of the combined company for the full quarter.

### *Data Center Computing Markets*

Following the acquisition of Artesyn in September 2019, Advanced Energy entered the Data Center Computing market with industry-leading products and low-voltage power conversion technologies. We sell to a large number of data center server and storage manufacturers, as well as cloud service providers and their partners. Driven by as the growing

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adoption of cloud computing, market demand for server and storage equipment has shifted from enterprise on-premise computing to data center. This trend drove a strong year of data center investments in 2018 but the industry has moderated investments in 2019. With a growing presence at both cloud service providers and industry-leading data center server and storage vendors, we believe Advanced Energy is well positioned to continue to capitalize on the ongoing shift towards cloud computing. We generated revenue from the Data Center Computing market during the third quarter of 2019 following the acquisition of Artesyn on September 10, 2019, and we expected to generate more revenue from this market in the fourth quarter of 2019.

*Telecom & Networking Markets*

The acquisition of Artesyn in September 2019 brings us a portfolio of products and technologies that are used across the Telecommunications & Networking markets. Our customers include many leading vendors of wireless infrastructure equipment, telecommunication equipment and computer networking. The wireless telecom market continues to evolve with more advanced mobile standards. 5G wireless technology promises to drive substantial growth opportunities for the telecom industry as it enables new advanced applications such as autonomous vehicle and virtual/augmented reality. Telecom service providers have started to invest in 5G and this trend is expected to drive demand of our products into the Telecom & Networking markets. In datacom, demand is driven by networking investments by telecom service providers and enterprises upgrading of their network, as well as, cloud data center networking investments. In the third quarter of 2019 we generated revenue from the Telecom & Networking markets following the acquisition of Artesyn, and with a full quarter of owning the business in the fourth quarter of 2019, we expect revenue from these markets to increase.

The analysis presented below is organized to provide the information we believe will be helpful for understanding our historical performance and relevant trends going forward. This discussion should be read in conjunction with our Unaudited Condensed Consolidated Financial Statements in Part I, Item 1 of this report, including the notes thereto. Also included in the following analysis are measures that are not in accordance with U.S. GAAP. A reconciliation of the non-GAAP measures to U.S. GAAP is provided below.

**Results of Continuing Operations**

The following tables set forth certain data, and the percentage of sales each item reflects, derived from our Unaudited Condensed Consolidated Statements of Operations for the periods indicated (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Sales	\$ 175,127	\$ 173,082	\$ 450,680	\$ 564,731
Gross profit	73,491	85,539	203,357	290,419
Operating expenses	64,101	45,677	171,171	138,436
Operating income from continuing operations	9,390	39,862	32,186	151,983
Other income (expense), net	1,361	401	17,649	(58)
Income from continuing operations before income taxes	10,751	40,263	49,835	151,925
Provision for income taxes	3,495	5,106	3,819	23,998
Income from continuing operations, net of income taxes	\$ 7,256	\$ 35,157	\$ 46,016	\$ 127,927

  

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Sales	100.0 %	100.0 %	100.0 %	100.0 %
Gross profit	42.0	49.4	45.1	51.4
Operating expenses	36.6	26.4	38.0	24.5
Operating income from continuing operations	5.4	23.0	7.1	26.9
Other income (expense), net	0.7	0.3	4.0	—
Income from continuing operations before income taxes	6.1	23.3	11.1	26.9
Provision for income taxes	2.0	3.0	0.9	4.2
Income from continuing operations, net of income taxes	4.1 %	20.3 %	10.2 %	22.7 %

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*SALES*

The following tables summarize net sales and percentages of net sales, by product line, for the three and nine months ended September 30, 2019 and 2018:

	Three Months Ended		Change 2019 v. 2018	
	September 30,		Dollar	Percent
	2019	2018		
Semiconductor Equipment	\$ 96,426	\$ 119,969	\$ (23,543)	(19.6)%
Telecom & Networking	10,016	—	10,016	N/A
Data Center Computing	13,498	—	13,498	N/A
Industrial & Medical	55,187	53,113	2,074	3.9
Total	\$ 175,127	\$ 173,082	\$ 2,045	1.2 %

	Nine Months Ended		Change 2019 v. 2018	
	September 30,		Dollar	Percent
	2019	2018		
Semiconductor Equipment	\$ 277,911	\$ 426,380	\$ (148,469)	(34.8)%
Telecom & Networking	10,016	—	10,016	N/A
Data Center Computing	13,498	—	13,498	N/A
Industrial & Medical	149,255	138,351	10,904	7.9
Total	\$ 450,680	\$ 564,731	\$ (114,051)	(20.2)%

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2019	2018	2019	2018
Semiconductor Equipment	55.1 %	69.3 %	61.7 %	75.5 %
Telecom & Networking	5.7	—	2.2	—
Data Center Computing	7.7	—	3.0	—
Industrial & Medical	31.5	30.7	33.1	24.5
Total	100.0 %	100.0 %	100.0 %	100.0 %

*Total Sales*

Sales increased \$2.0 million, or 1.2%, to \$175.1 million for the three months ended September 30, 2019 and decreased \$114.1 million, or 20.2% for the nine months ended September 30, 2019 as compared to the same periods in 2018. Revenue for the three months ended September 30, 2019 was benefited by \$40.9 million in inorganic sales from the acquisition of Artesyn. Organic sales for the three months ended September 30, 2019, decreased \$38.9 million principally due to decreased demand in the semiconductor capital equipment market. The decrease in sales, for the nine months ended, is due to the overall decline in demand in the semiconductor capital equipment market, which was partially offset by increased sales, for the nine months ended September 30, 2019, in our industrial markets. Sales for the three and nine months ended September 30, 2019 includes \$52.9 million and \$76.7 million, respectively, associated with our acquisitions of Artesyn and LumaSense. Sales for the three and nine months ended September 30, 2018, includes \$5.6 million associated with our acquisition of LumaSense.

Sales in the semiconductor market decreased \$23.5 million, or 19.6%, for the three months ended September 30, 2019 and decreased \$148.5 million, or 34.8% for the nine months ended September 30, 2019, as compared to the same periods in 2018. The decrease in sales during 2019 is due to an overall pause in production and demand for semiconductor equipment used in deposition and etch applications, related to advanced memory, and the timing of new technology investment.

Sales in the telecom and networking market were \$10.0 million for the three and nine months ended September 30, 2019 and were \$0.0 million for the same periods in 2018. The increase in telecom and networking sales is due to the addition of new product verticals through inorganic growth.

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Sales in the data center computing market was \$13.5 million for the three and nine months ended September 30, 2019 and were \$0.0 million for the same periods in 2018. The increase in data center computing sales is due to the addition of new product verticals through inorganic growth.

Sales in the industrial and medical increased \$2.1 million, or 3.9%, for the three months ended September 30, 2019 and increased \$10.9 million, or 7.9% for the nine months ended September 30, 2019 as compared to the same periods in 2018. Inorganic growth contributed \$16.4 million while organic sales in the industrial and medical markets decreased \$14.4 million, or 27.1%, for the three months ended September 30, 2019 and decreased \$5.5 million, or 4.0% for the nine months ended September 30, 2019 as compared to the same periods in 2018. The decrease in organic sales was primarily due to slowing macro-economic conditions and lower demand in the consumer hard coating and flat panel display markets.

*Backlog*

Our backlog was \$300.6 million at September 30, 2019 as compared to \$74.7 million at December 31, 2018. Backlog increased primarily due to the new Data Center Computing and Telecom & Networking markets.

*GROSS PROFIT*

For the three months ended September 30, 2019, gross profit decreased \$12.0 million to \$73.5 million, or 42.0% of sales, as compared to gross profit of \$85.5 million, or 49.4% of sales, for the same period in 2018. Gross profit for the nine months ended September 30, 2019 was \$203.4 million, or 45.1% of sales, as compared to gross profit of \$290.4 million, or 51.4% of sales, for the same period in 2018. The decrease in gross profit as a percent of revenue is due to reduced operating leverage on lower volume, product mix and higher freight and customs costs, as well as the mix of products from Artesyn, which carry a lower gross margin. Gross profit for the three and nine months ended September 30, 2019 includes \$16.5 million and \$31.9 million, respectively, from our acquisitions of Artesyn and LumaSense. Gross profit for the three and nine months ended September 30, 2018, includes \$2.8 million associated with our acquisition of LumaSense.

*OPERATING EXPENSE*

Operating expenses increased \$18.4 million to \$64.1 million, or 36.6% of sales, for the three months ended September 30, 2019 from \$45.7 million, or 26.4% of sales, for the same period in 2018. Operating expenses increased \$32.7 million to \$171.2 million, or 38.0% of sales, for the nine months ended September 30, 2019, from \$138.4 million, or 24.5% of sales, for the same period in 2018. Operating expenses increased during the three and nine month periods primarily due to the acquisition of Artesyn which added \$8.5 million in the third quarter of 2019 as well as acquisition and transaction related costs.

The following tables summarize our operating expenses as a percentage of sales for the periods indicated:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Research and development	\$ 24,546	\$ 18,451	\$ 67,675	\$ 55,283
Selling, general, and administrative	36,401	25,386	93,027	78,792
Amortization of intangible assets	3,002	1,437	6,849	3,958
Restructuring charges	152	403	3,620	403
Total operating expenses	<u>\$ 64,101</u>	<u>\$ 45,677</u>	<u>\$ 171,171</u>	<u>\$ 138,436</u>
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Research and development	14.0 %	10.7 %	15.0 %	9.8 %
Selling, general, and administrative	20.8	14.7	20.7	13.9
Amortization of intangible assets	1.7	0.8	1.5	0.7
Restructuring charges	0.1	0.2	0.8	0.1
Total operating expenses	<u>36.6 %</u>	<u>26.4 %</u>	<u>38.0 %</u>	<u>24.5 %</u>

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### *Research and Development*

We perform research and development of products for new or emerging applications, technological changes to provide higher performance, lower cost, or other attributes that we may expect to advance our customers' products. We believe that continued development of technological applications, as well as enhancements to existing products to support customer requirements, are critical for us to compete in the markets we serve. Accordingly, we devote significant personnel and financial resources to the development of new products and the enhancement of existing products, and we expect these investments to continue.

Research and development expenses increased \$6.1 million and \$12.4 million for the three and nine months ended September 30, 2019, respectively, compared to the same periods in 2018. The increase in research and development expense is due to increased headcount and material costs as we invest in new programs to maintain and increase our technological leadership and provide solutions to our customers' evolving needs. Research and development expenses for the three and nine months ended September 30, 2019 includes \$4.9 million and \$9.1 million, respectively, from our acquisitions of Artesyn and LumaSense. Research and development expenses for the three and nine months ended September 30, 2018 includes \$0.7 million from our acquisition of LumaSense.

### *Selling, General and Administrative*

Our selling expenses support domestic and international sales and marketing activities that include personnel, trade shows, advertising, third-party sales representative commissions, and other selling and marketing activities. Our general and administrative expenses support our worldwide corporate, legal, tax, financial, governance, administrative, information systems, and human resource functions in addition to our general management, including acquisition-related activities.

Selling, general and administrative expenses increased \$11.0 million and \$14.2 million for the three and nine months ended September 30, 2019, respectively, compared to the same periods in 2018. Selling, general and administrative expenses for the three and nine months ended September 30, 2019 includes \$7.0 million and \$13.2 million, respectively, from our acquisitions of Artesyn and LumaSense. Selling, general and administrative expenses for the three and nine months ended September 30, 2018 includes \$1.5 million from our acquisition of LumaSense. Selling, general and administrative expenses excluding Artesyn and LumaSense, increased \$5.5 million and \$2.5 million for the three and nine months ended September 30, 2019, respectively, and was predominately due to legal and professional fees incurred in connection with the acquisition of Artesyn, partially offset by reductions in payroll related costs, travel and other outside services as we were able to implement certain cost containment measures while still preserving recent infrastructure investments in personnel and geographic footprint.

### *Restructuring*

In connection with the restructuring actions management previously put in place to optimize our manufacturing footprint to lower-cost regions, and improvements in operating efficiencies and synergies related to our recent acquisitions, during the three and nine months ended September 30, 2019, we recognized \$0.2 million and \$3.6 million, respectively, in restructuring charges primarily related to employee termination benefits and recognition of excess lease space as we optimize our facility footprint. Additionally, during the same time periods, we paid approximately \$1.3 million and \$3.2 million, respectively, in severance related costs.

### *Other Income (Expense), net*

Other income (expense), net consists primarily of interest income and expense, foreign exchange gains and losses, gains and losses on sales of fixed assets, and other miscellaneous items. Other income (expense), net was \$1.4 million and \$17.6 million for the three and nine months ended September 30, 2019, respectively. In May 2019 we sold our central solar inverter repair and service operation and recorded a one-time gain of \$14.8 million. Other income (expense) excluding the effect of the sale of the central inverter service and repair business was \$1.4 million and \$2.8 million for the three and nine months ended September 30, 2019, respectively, compared to \$0.4 million and \$(0.1) million for the same periods in 2018. The increase in other income is primarily due to improved interest earnings as a result of improved focus

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on investment management of our excess cash, partially offset by higher interest expenses in the third quarter of 2019 related to the debt issued for the acquisition of Artesyn.

*Provision for Income Taxes*

Our effective tax rates differ from the U.S. federal statutory rate of 21% for the three and nine months ended September 30, 2019 and 2018, respectively, primarily due to the benefit of earnings in foreign jurisdictions which are subject to lower tax rates, partially offset by additional GILTI tax in the U.S. The effective tax rate for the first nine months of 2019 was lower than the same period in 2018 primarily due to the release of liabilities for uncertain tax positions in the first quarter of 2019 based on the completion of additional procedures during the quarter to support a change in facts with respect to a specific prior period position. The higher effective tax rate in the three months ended September 2019 was primarily due to the non-deductibility of certain transaction costs related to the Artesyn transaction and a change in the indefinite reinvestment assertion of unremitted earnings in China and Korea.

Our future effective income tax rate depends on various factors, such as changes in tax laws, regulations, accounting principles, or interpretations thereof and the geographic composition of our pre-tax income. We carefully monitor these factors and adjust our effective income tax rate accordingly.

**Results of Discontinued Operations**

We completed the wind down of our inverter engineering, manufacturing and sales product lines in December 2015. Accordingly, the inverter product lines are presented as a discontinued operation for all periods presented herein. Extended warranties previously sold for the inverter product line are reflected in deferred revenue from continuing operations in our Unaudited Condensed Consolidated Balance Sheets and will be reflected in continuing operations in future periods as the deferred revenue is earned and the associated services are rendered.

Income from discontinued operations, net of income taxes are as follows (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Sales	\$ —	\$ —	\$ —	\$ —
Cost of sales	(700)	—	(900)	(88)
Total operating expense	133	—	514	31
Operating income from discontinued operations	567	—	386	57
Other income (expense)	(84)	(258)	10,835	(261)
Income (loss) from discontinued operations before income taxes	483	(258)	11,221	(204)
Provision (benefit) for income taxes	108	113	2,531	22
Income (loss) from discontinued operations, net of income taxes	\$ 375	\$ (371)	\$ 8,690	\$ (226)

In May 2019, we sold our grid-tied central solar inverter repair and service operation. In conjunction with the sale, the initial product warranty for the previously sold grid-tied central solar inverters was transferred to the buyer. Accordingly, a gain of \$11.0 million and tax expense of \$2.4 million was recognized in Other income (expense) and Provision (benefit) for income taxes in our discontinued operations for the nine months ended September 30, 2019. Operating income from discontinued operations for the three and nine months ended September 30, 2019 and 2018, also includes the impacts of changes in our estimated product warranty liability, the recovery of accounts receivable and foreign exchange gain or (losses).

**Non-GAAP Results**

Management uses non-GAAP operating income and non-GAAP EPS to evaluate business performance without the impacts of certain non-cash charges and other charges which are not part of our usual operations. We use these non-GAAP measures to assess performance against business objectives, make business decisions, including developing budgets and forecasting future periods. In addition, management's incentive plans include these non-GAAP measures as

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criteria for achievements. These non-GAAP measures are not in accordance with U.S. GAAP and may differ from non-GAAP methods of accounting and reporting used by other companies. However, we believe these non-GAAP measures provide additional information that enables readers to evaluate our business from the perspective of management. The presentation of this additional information should not be considered a substitute for results prepared in accordance with U.S. GAAP.

The non-GAAP results presented below exclude the impact of non-cash related charges such as stock-based compensation and amortization of intangible assets, as well as discontinued operations, and non-recurring items such as acquisition-related costs and restructuring expenses. The tax effect of our non-GAAP adjustments represents the anticipated annual tax rate applied to each non-GAAP adjustment after consideration of their respective book and tax treatments.

Reconciliation of Non-GAAP measure - operating expenses and operating income from continuing operations, excluding certain items	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Gross profit from continuing operations, as reported	\$ 73,491	\$ 85,539	\$ 203,357	\$ 290,419
Adjustments to gross profit:				
Stock-based compensation	77	76	365	576
Facility expansion and relocation costs	1,342	725	1,662	974
Acquisition-related costs	1,506	158	1,506	158
Non-GAAP gross profit	<u>76,416</u>	<u>86,498</u>	<u>206,890</u>	<u>292,127</u>
Operating expenses from continuing operations, as reported	64,101	45,677	171,171	138,436
Adjustments:				
Amortization of intangible assets	(3,002)	(1,437)	(6,849)	(3,958)
Stock-based compensation	(840)	(948)	(4,688)	(6,885)
Acquisition-related costs	(6,398)	(705)	(9,440)	(1,310)
Facility expansion and relocation costs	(223)	(29)	(297)	(518)
Restructuring charges	(152)	(403)	(3,620)	(403)
Non-GAAP operating expenses	<u>53,486</u>	<u>42,155</u>	<u>146,277</u>	<u>125,362</u>
Non-GAAP operating income	<u>\$ 22,930</u>	<u>\$ 44,343</u>	<u>\$ 60,613</u>	<u>\$ 166,765</u>

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Reconciliation of Non-GAAP measure - operating expenses and operating income from continuing operations, excluding certain items	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Gross profit from continuing operations, as reported	42.0 %	49.4 %	45.1 %	51.4 %
Adjustments to gross profit:				
Stock-based compensation	—	—	0.1	0.1
Facility expansion and relocation costs	0.8	0.5	0.4	0.2
Acquisition-related costs	0.8	0.1	0.3	—
Non-GAAP gross profit	43.6	50.0	45.9	51.7
Operating expenses from continuing operations, as reported	36.6	26.4	38.0	24.5
Adjustments:				
Amortization of intangible assets	(1.7)	(0.8)	(1.5)	(0.7)
Stock-based compensation	(0.5)	(0.6)	(1.0)	(1.2)
Acquisition-related costs	(3.7)	(0.4)	(2.1)	(0.2)
Facility expansion and relocation costs	(0.1)	—	(0.1)	(0.1)
Restructuring charges	(0.1)	(0.2)	(0.8)	(0.1)
Non-GAAP operating expenses	30.5	24.4	32.5	22.2
Non-GAAP operating income	13.1 %	25.6 %	13.4 %	29.5 %
<b>Reconciliation of Non-GAAP measure - income from continuing operations, excluding certain items</b>				
Income from continuing operations, less non-controlling interest, net of income taxes	\$ 7,246	\$ 35,150	\$ 45,987	\$ 127,845
Adjustments:				
Amortization of intangible assets	3,002	1,437	6,849	3,958
Acquisition-related costs	7,904	863	10,946	1,468
Facility expansion and relocation costs	1,565	754	1,959	1,492
Restructuring charges	152	403	3,620	403
Tax Cuts and Jobs Act Impact	—	2,398	—	4,251
Central inverter services business sale	—	—	(14,804)	—
Acquisition transition services	(29)	—	(29)	—
Tax effect of non-GAAP adjustments	326	(598)	2,011	(1,145)
Non-GAAP income, net of income taxes, excluding stock-based compensation	20,166	40,407	56,539	138,272
Stock-based compensation, net of taxes	702	779	3,887	5,716
Non-GAAP income, net of income taxes	\$ 20,868	\$ 41,186	\$ 60,426	\$ 143,988
Non-GAAP diluted earnings per share	\$ 0.54	\$ 1.05	\$ 1.57	\$ 3.64

**Impact of Inflation**

In recent years, inflation has not had a significant impact on our operations. However, we continuously monitor operating price increases, particularly in connection with the supply of component parts used in our manufacturing process. To the extent permitted by competition, we pass increased costs on to our customers by increasing sales prices over time. From time to time, we may also reduce prices to customers to decrease sales prices due to reductions in the cost structure of our products from cost improvement initiatives and decreases in component part prices.

## Liquidity and Capital Resources

### LIQUIDITY

We believe that adequate liquidity and cash generation are important to the execution of our strategic initiatives. Our ability to fund our operations, acquisitions, capital expenditures, service debt requirement and product development efforts may depend on our ability to generate cash from operating activities which is subject to future operating performance, as well as general economic, financial, competitive, legislative, regulatory, and other conditions, some of which may be beyond our control. Our primary sources of liquidity are our available cash, investments, cash generated from current operations as well as our credit facility noted below.

At September 30, 2019, we had \$341.2 million in cash, cash equivalents, and marketable securities. In addition to available cash, cash equivalents, and marketable securities, we have the Revolving Facility with a bank which provides up to \$150.0 million subject to certain funding conditions and expiring in September 2024. At September 30, 2019, we had \$150.0 million in available funding under the Revolving Facility. For more information on the Revolving Facility, see *Note 22. Credit Facility* in Part I, Item 1 "Unaudited Condensed Consolidated Financial Statements" contained herein and immediately below.

In September 2019, in connection with the Artesyn acquisition, we entered into a credit agreement ("Credit Agreement") that provided aggregate financing of \$500.0 million, consisting of a \$350.0 million senior unsecured loan facility with a term of five years (the "Term Loan Facility") and a \$150.0 million senior unsecured revolving facility with a term of five years (the "Revolving Facility"). The Term Loan Facility was utilized to partially fund the Artesyn acquisition. The Revolving Facility replaced the Company's prior Loan Agreement which provided up to \$150.0 million in funding. Borrowings under the Credit Agreement will bear interest, at the option of the Company, at a rate based on a reserve adjusted LIBOR rate or a base rate, plus an applicable margin. In the case of a LIBOR rate loan, interest shall be based on the LIBOR quote on the applicable screen page of the bank, plus between three-quarters percentage points (0.75%) and one and three-quarters percentage points (1.75%) depending on the Company's consolidated leverage ratio. In the case of a base rate loan, interest shall be equal to the sum of (i) the highest of (a) the federal funds rate plus half a percentage point (0.50%), (b) the bank's current "prime rate" and (c) the LIBOR rate plus one percentage point (1.00%) plus (ii) between zero percentage points (0.00%) and three-quarters percentage points (0.75%) depending on the Company's consolidated leverage ratio. The Company shall pay an unused line fee between one-tenth percentage point (0.10%) and a quarter percentage point (0.25%) depending on the Company's usage of the Revolving Facility. The Term Loan Facility requires quarterly repayments of \$4.4 million, plus accrued interest, with the remaining balance due in September 2024.

In September 2015, our Board of Directors authorized a program to repurchase up to \$150.0 million of our stock over a thirty-month period. In November 2017, our Board of Directors approved an extension to the share repurchase program to December 2019 from its original maturity of March 2018 and in May 2018, approved a \$50 million increase in its authorization to repurchase shares of Company common stock under this same program. As of September 30, 2019, we had \$24.9 million remaining for the future repurchase of our stock.

In order to execute the repurchase of shares of common stock, the Company periodically enters into stock repurchase agreements. During the three and nine months ended September 30, 2019 and 2018, the Company has repurchased the following shares of common stock (in thousands, except per share amounts):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Amount paid to repurchase shares	\$ —	\$ 30,962	\$ —	\$ 69,021
Number of shares repurchased	—	533	—	1,121
Average repurchase price per share	\$ —	\$ 58.12	\$ —	\$ 61.57

We believe that our current cash levels, available credit facility, as well as our cash generated from future operations, will be adequate to meet our working capital requirements, debt capital expenditures, contractual obligations,

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share repurchase programs, and additional acquisitions on long-term and short-term basis. We may, however, depending upon the number or size of additional acquisitions, seek additional financing from time to time.

### CASH FLOWS

A summary of our cash provided by and used in operating, investing and financing activities is as follows (in thousands):

	Nine Months Ended September 30,	
	2019	2018
Net cash provided by operating activities from continuing operations	\$ 28,858	\$ 118,483
Net cash provided by (used in) operating activities from discontinued operations	317	(4,550)
Net cash provided by operating activities	29,175	113,933
Net cash used in investing activities from continuing operations	(382,537)	(110,474)
Net cash provided by (used in) financing activities from continuing operations	342,397	(71,657)
<b>EFFECT OF CURRENCY TRANSLATION ON CASH</b>	<b>(3,185)</b>	<b>(722)</b>
<b>DECREASE IN CASH AND CASH EQUIVALENTS</b>	<b>(14,150)</b>	<b>(68,920)</b>
CASH AND CASH EQUIVALENTS, beginning of period	354,552	415,037
<b>CASH AND CASH EQUIVALENTS, end of period</b>	<b>340,402</b>	<b>346,117</b>
<b>Less cash and cash equivalents from discontinued operations</b>	<b>—</b>	<b>7,444</b>
<b>CASH AND CASH EQUIVALENTS FROM CONTINUING OPERATIONS, end of period</b>	<b>\$ 340,402</b>	<b>\$ 338,673</b>

### 2019 CASH FLOWS COMPARED TO 2018

#### Net cash provided by operating activities

Net cash provided by operating activities for the nine months ended September 30, 2019 was \$29.2 million, as compared to \$113.9 million for the same period in 2018. The decrease of \$84.8 million in net cash flows from operating activities, as compared to the same period in 2018, is due to overall decreases in sales to the semiconductor equipment market resulting in decreased earnings from continuing operations.

#### Net cash used in investing activities

Net cash used in investing activities for the nine months ended September 30, 2019 was \$382.5 million and includes \$365.8 million associated with the acquisition of Artesyn. Net cash used in investing activities for the nine months ended September 30, 2018 was \$110.5 million which included \$93.8 million used in the acquisition of LumaSense, Trek and the electrostatic technology and product line.

#### Net cash provided by financing activities

Net cash provided by financing activities for the nine months ended September 30, 2019 was \$342.4 million and includes the effect of cash proceeds of \$350.0 million, net of financing costs of \$2.5 million, from a senior unsecured note offset partially by \$4.4 million in principal repayments. Net cash used in financing activities for the nine months ended September 30, 2018 was \$71.7 million which included \$69.0 million for the repurchase of company stock.

#### Effect of currency translation on cash

During the nine months ended September 30, 2019, currency translation had a \$3.2 million unfavorable impact as compared to a \$0.7 million unfavorable impact during the same period in 2018 primarily due to strengthened U.S. dollar. Our foreign operations primarily sell product and incur expenses in the related local currency. Exchange rate fluctuations could require us to increase prices to foreign customers, which could result in lower net sales by us to such customers. Alternatively, if we do not adjust the prices for our products in response to unfavorable currency fluctuations, our results of operations could be adversely impacted. The functional currencies of our worldwide operations include U.S. dollar ("USD"), Canadian Dollar ("CAD"), Swiss Franc ("CHF"), Chinese Yuan ("CNY"), Danish Krone ("DKK"),

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Euro ("EUR"), Pound Sterling ("GBP"), Israeli New Shekel ("ILS"), Indian Rupee ("INR"), Japanese Yen ("JPY"), South Korean Won ("KRW"), Singapore Dollar ("SGD") and New Taiwan Dollar ("TWD"). Our purchasing and sales activities are primarily denominated in USD, CNY, EUR, and JPY.

The change in these key currency rates during the nine months ended September 30, 2019 and 2018 are as follows:

From	To	Nine Months Ended September 30,	
		2019	2018
CAD	USD	2.9 %	(2.7)%
CHF	USD	(1.1)%	(0.6)%
CNY	USD	(3.7)%	(5.3)%
DKK	USD	(4.6)%	(3.3)%
EUR	USD	(4.6)%	(3.1)%
GBP	USD	(3.4)%	(3.4)%
ILS	USD	7.9 %	N/A
INR	USD	(1.4)%	(12.0)%
JPY	USD	1.9 %	(1.0)%
KRW	USD	(7.1)%	(3.9)%
SGD	USD	(1.4)%	(2.3)%
TWD	USD	(1.5)%	(2.5)%

### Critical Accounting Policies and Estimates

The preparation of financial statements and related disclosures in conformity with U.S. GAAP requires us to make judgments, assumptions and estimates that affect the amounts reported in the Condensed Consolidated Financial Statements and accompanying notes. *Note 1. Operation and Summary of Significant Accounting Policies and Estimates* to the Consolidated Financial Statements in our Annual Report on Form 10-K for the year ended December 31, 2018 describes the significant accounting policies and methods used in the preparation of our Consolidated Financial Statements. Our critical accounting estimates, discussed in the Management's Discussion and Analysis of Financial Condition and Results of Operations in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2018, include estimates for allowances for doubtful accounts, determining useful lives for depreciation and amortization, the valuation of assets and liabilities acquired in business combinations, assessing the need for impairment charges for identifiable intangible assets and goodwill, establishing warranty reserves, accounting for income taxes, and assessing excess and obsolete inventories. Such accounting policies and estimates require significant judgments and assumptions to be used in the preparation of the Condensed Consolidated Financial Statements and actual results could differ materially from the amounts reported based on variability in factors affecting these estimates.

### ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

#### Interest Rate Risk

Our market risk exposure relates to changes in interest rates in our investment portfolio. We generally place our investments with high-credit quality issuers and by policy are averse to principal loss and seek to protect and preserve our invested funds by limiting default risk, market risk, and reinvestment risk.

As of September 30, 2019, our investments consisted of certificates of deposit, with maturities of less than 1 year and money market deposits (see *Note 7. Marketable Securities and Assets Measured at Fair Value* in Part 1, Item 1 "Unaudited Condensed Consolidated Financial Statements"). As a measurement of the sensitivity of our portfolio and if our investment portfolio balances remain constant, a hypothetical decrease of one percentage point in interest rates would decrease annual pre-tax earnings by an immaterial amount.

## **Foreign Currency Exchange Rate Risk**

We are impacted by changes in foreign currency exchange rates through sales and purchasing transactions when we sell products and purchase materials in currencies different from the currency in which product and manufacturing costs were incurred. Our purchasing and sales activities are primarily denominated in USD, CNY, EURO, and JPY. As these currencies fluctuate against each other, and other currencies, we are exposed to foreign currency exchange rate risk on sales, purchasing transactions and labor.

Our reported financial results of operations, including the reported value of our assets and liabilities, are also impacted by changes in foreign currency exchange rates. Assets and liabilities of many of our subsidiaries outside the U.S. are translated at period end rates of exchange for each reporting period. Operating results and cash flow statements are translated at weighted-average rates of exchange during each reporting period. Although these translation changes have no immediate cash impact, the translation changes may impact future borrowing capacity, and overall value of our net assets.

From time to time, we may enter into foreign currency exchange rate contracts with banks to hedge against changes in foreign currency exchange rates on assets and liabilities expected to be settled at a future date. Market risk arises from the potential adverse effects on the value of derivative instruments that result from a change in foreign currency exchange rates. We attempt to mitigate our market risk applicable to foreign currency exchange rate contracts by establishing and monitoring parameters that limit the types and degree of our derivative contract instruments. We enter into these contract instruments for risk management purposes only. We do not enter or issue derivatives for trading or speculative purposes.

Currency exchange rates vary daily and often one currency strengthens against the USD while another currency weakens. Because of the complex interrelationship of the worldwide supply chains and distribution channels, it is difficult to quantify the impact of a change in one or more exchange rates.

See the "Risk Factors" set forth in Part I, Item 1A of our Annual Report on Form 10-K and Part II, Item 1A of this Form 10-Q for more information about the market risks to which we are exposed. There have been no material changes in our exposure to market risk from December 31, 2018.

## **ITEM 4. CONTROLS AND PROCEDURES**

### **Evaluation of Disclosure Controls and Procedures**

We have established disclosure controls and procedures, which are designed to ensure that information required to be disclosed in reports filed or submitted under the Securities Exchange Act of 1934 ("Act") is recorded, processed, summarized, and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms. These disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in the reports that we file or submit under the Act is accumulated and communicated to management, including our Principal Executive Officer (Yuval Wasserman, Chief Executive Officer) and Principal Financial Officer (Paul Oldham, Chief Financial Officer), as appropriate, to allow timely decisions regarding required disclosures.

As of the end of the period covered by this report, we conducted an evaluation, with the participation of management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of the disclosure controls and procedures pursuant to the Exchange Act Rule 13a-15(b). Based upon this evaluation, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of September 30, 2019. The conclusions of the Chief Executive Officer and Chief Financial Officer from this evaluation were communicated to the Audit Committee. We intend to continue to review and document our disclosure controls and procedures, including our internal controls and procedures for financial reporting, and may from time to time make changes aimed at enhancing their effectiveness and to ensure that our systems evolve with our business.

## **Changes in Internal Control over Financial Reporting**

There was no change in our internal control over financial reporting that occurred during the fiscal quarter covered by this Form 10-Q that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

## **PART II OTHER INFORMATION**

### **ITEM 1. LEGAL PROCEEDINGS**

We are involved in disputes and legal actions arising in the normal course of our business. There have been no material developments in legal proceedings in which we are involved during three and nine months ended September 30, 2019 and 2018. For a description of previously reported legal proceedings refer to Part I, Item 3, "Legal Proceedings" of our Annual Report on Form 10-K for the year ended December 31, 2018.

### **ITEM 1A. RISK FACTORS**

Our business, financial condition, operating results and cash flows can be impacted by a number of factors, including, but not limited to, those set forth below, any of which could cause our results to be adversely impacted and could result in a decline in the value or loss of an investment in our common stock. Other factors may also exist that we cannot anticipate or that we currently do not consider to be significant based on information that is currently available. These risks and uncertainties have the potential to materially affect our business, financial condition, results of operations, cash flows and future results. Such risks and uncertainties may also impact the accuracy of forward-looking statements included in this Form 10-Q and other reports we file with the Securities and Exchange Commission.

#### ***The industries in which we compete are subject to volatile and unpredictable cycles.***

As a supplier to the global semiconductor equipment, telecom & networking, data center computing and industrial & medical industries, we are subject to business cycles, the timing, length, and volatility of which can be difficult to predict. Certain of these industries historically have been cyclical due to sudden changes in customers' manufacturing capacity requirements and spending, which depend in part on capacity utilization, demand for customers' products, inventory levels relative to demand, and access to affordable capital. These changes have affected the timing and amounts of customers' purchases and investments in technology, and continue to affect our orders, net sales, operating expenses, and net income. In addition, we may not be able to respond adequately or quickly to the declines in demand by reducing our costs. We may be required to record significant reserves for excess and obsolete inventory as demand for our products changes.

To meet rapidly changing demand in each of the industries we serve, we must effectively manage our resources and production capacity. During periods of decreasing demand for our products, we must be able to appropriately align our cost structure with prevailing market conditions, effectively manage our supply chain, and motivate and retain key employees. During periods of increasing demand, we must have enough manufacturing capacity and inventory to fulfill customer orders, effectively manage our supply chain, and attract, retain, and motivate a sufficient number of qualified individuals. If we are not able to timely and appropriately adapt to changes in our business environment or to accurately assess where we are positioned within a business cycle, our business, financial condition, or results of operations may be materially and adversely affected. For example, following record levels in the first half of 2018, the semiconductor equipment market began to decline and AE's revenue from the semiconductor equipment market is down 35.0% during the first nine months of 2019, as compared to the same period in 2018. Although the semiconductor equipment market improved during the third quarter of 2019, we do not know how long this downturn will last or if the market will recover to previous levels. In addition, the market may be characterized in the future with more mini-ramps rather than sustained growth periods as experienced during 2015-2017.

#### ***Deterioration of economic conditions could negatively impact our business.***

Our business may be adversely affected by changes in national or global economic conditions, including inflation, interest rates, availability of capital markets, consumer spending rates, energy availability and costs (including fuel surcharges) and the effects of governmental initiatives to manage economic conditions. Any such changes could

adversely affect the demand for our products both in domestic and export markets, or the cost and availability of our needed raw materials and packaging materials, thereby negatively affecting our financial results.

A disruption in credit and other financial markets and deterioration of national and global economic conditions, could, among other things:

- negatively impact global demand for our products, which could result in a reduction of sales, operating income and cash flows;
- make it more difficult or costly for us to obtain financing for our operations or investments or to refinance our debt in the future;
- cause our lenders to depart from prior credit industry practice and make more difficult or expensive the granting of any technical or other waivers under our debt agreements to the extent we may seek them in the future;
- decrease the value of our investments; and
- impair the financial viability of our insurers.

***Our long-term success and results of operations depend on our ability to successfully integrate Artesyn's business and operations and realize the anticipated benefits from the acquisition.***

In September 2019 we acquired Artesyn, and we are currently in the early stages of combining Artesyn's business with our business. The acquisition of Artesyn has significantly increased our industrial power product offerings, added power products for telecommunications and data center end markets, and significantly increased the number of employees and facilities. We believe there is minimal overlap between Artesyn and our acquisition of Excelsys Technologies in 2017. To realize the anticipated benefits of the acquisition, we must successfully combine our businesses in an efficient and effective manner and realize upon our synergy and cost-savings targets. Integrating Artesyn's business and operations with ours will require significant management attention, efforts and expenditures, and we may not be able to achieve the integration in an effective, complete, timely or cost-efficient manner.

Potential risks related to our acquisition of Artesyn include our ability to:

- maintain and improve Artesyn's financial and operating results while integrating and optimizing our combined sales, marketing, manufacturing and corporate administrative organizations;
- avoid lost revenue due to customer confusion, alienation or misinformation regarding the transaction, and retain and expand Artesyn's customer base with aligning our sales efforts;
- avoid lost revenue resulting from the distraction or confusion of our personnel as a consequence of the acquisition and ongoing integration efforts;
- optimize our combined worldwide manufacturing footprint while utilizing Artesyn's vertically integrated manufacturing model for a broader set of company products;
- realize expected synergies and cost savings across the organization while managing our existing businesses, contracts and relationships;
- Successfully eliminate fixed costs previously absorbed by other businesses prior to the carve-out of Artesyn Embedded Power;
- recognize and capitalize on anticipated product sales and technology enhancement opportunities presented by our combined businesses;
- expand our financial and management controls and reporting systems and procedures to integrate and manager Artesyn;
- integrate our information technology systems to enable the management and operation of the combined business;
- identify and retain key Artesyn personnel and transition their critical knowledge;
- adequately familiarize us with Artesyn's products and technology and certain of its markets and customer base such that we can manage Artesyn's business effectively; and
- successfully integrate our respective corporate cultures such that we achieve the benefits of acting as a unified company.

Other potential risks related to our acquisition of Artesyn include:

- the assumption of unknown or contingent liabilities, or other unanticipated events or circumstances; and
- the potential to incur or record significant cash or non-cash charges or write down the carrying value of intangible assets and goodwill obtained in the Artesyn acquisition, which could adversely impact our cash flow or lower our earnings in the period or periods for which we incur such charges or write down such assets.

If we are unable to successfully or timely integrate the operations of Artesyn's business into our business, we may be unable to realize the revenue growth, synergies, cost-savings and other anticipated benefits resulting from the acquisition and our business could be adversely affected. Additionally, we have incurred and will continue to incur transaction-related costs, including legal, regulatory and other costs associated with implementing integration plans, including facilities and systems consolidation costs and employment-related costs. Although we expect that the elimination of duplicative costs, as well as the realization of other efficiencies related to the integration of the businesses, should allow us to offset transaction and integration-related costs over time, this net benefit may not be achieved in the near term, or at all. Further, we may not realize the expected benefits from the acquisition. Artesyn's business and operations may not achieve the anticipated revenues and operating results. Any of the foregoing risks could materially harm our business, financial condition and results of operations.

***Our debt obligations and the restrictive covenants in the agreements governing our debt could limit our ability to operate our business or pursue our business strategies, could adversely affect our business, financial condition, results of operations, and cash flows, and could significantly reduce stockholder benefits from a change of control event.***

As of September 30, 2019, our total debt was \$345.6 million, excluding unamortized debt issuance costs, of which \$17.5 million was classified as current. We are contractually obligated to make quarterly payments of \$4.4 million, plus accrued interest, with any outstanding balance due in September 2024. Our debt obligations could make us more vulnerable to general adverse economic and industry conditions and could limit our flexibility in planning for, or reacting to, changes in our business and the industries in which we operate, thereby placing us at a disadvantage to our competitors that have less indebtedness.

Our debt obligations impose financial covenants on us and our subsidiaries that require us to maintain certain leverage ratio. The financial covenants place certain restrictions on our business that may affect our ability to execute our business strategy successfully or take other actions that we believe would be in the best interests of our Company. These restrictions include limitations or restrictions, among other things, on our ability and the ability of our subsidiaries to:

- incur additional indebtedness;
- pay dividends or make distributions on our capital stock or certain other restricted payments or investments;
- make domestic and foreign investments and extend credit;
- engage in transactions with affiliates;
- transfer and sell assets;
- effect a consolidation or merger or sell, transfer, lease, or otherwise dispose of all or substantially all of our assets; and
- create liens on our assets to secure debt.

Our debt obligations contain certain customary events of default. Any breach of the covenants or other event of default could cause a default on our debt obligations, which could restrict our ability to borrow under our revolving credit facility. If there were an event of default under certain provisions of our debt arrangements that was not cured or waived, the holders of the defaulted debt may be able to cause all amounts outstanding with respect to the debt instrument, plus any required settlement costs, to be due and payable immediately. Our assets and cash flow may not be sufficient to fully repay borrowings under our outstanding debt instruments if accelerated upon an event of default. If we are unable to repay, refinance, or restructure our indebtedness as required, or amend the covenants contained in these agreements, the lenders can exercise all rights and remedies available under the Credit Agreement or applicable laws or

equity. Any of these events could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

***Significant developments stemming from recent U.S. government actions and proposals concerning tariffs and other economic proposals could have a material adverse effect on us.***

Recent U.S. government actions are imposing greater restrictions and economic disincentives on international trade, particularly imports. The U.S. government has adopted changes, and intends to adopt further changes, to trade policy and in some cases, to renegotiate, or potentially terminate, certain existing bilateral or multi-lateral trade agreements. It has also initiated the imposition of additional tariffs on certain foreign goods, including steel and aluminum, semiconductor manufacturing equipment and spare parts thereof.

Examples of recent actions are tariffs on steel and aluminum product imports announced by the U.S. Department of Commerce in March 2018 and a 25% tariff on certain products that originate in China announced by the United States Trade Representative (“USTR”) in June 2018. The USTR also announced in June and July 2018 two additional supplemental lists of products that are subject to tariffs if the goods imported into the United States originate in China, which would increase the cost of imported products. These supplemental lists issued by the USTR added an additional 25% on certain semiconductor equipment and parts originating in China that are sold by us or used in our business in the United States. In August 2018, the second list was made effective with a 25% tariff and in September 2018 the third list was made effective with a 10% tariff, increasing to 25% in May 2019. A fourth list was proposed by USTR in May 2019 for all remaining items originating in China. A portion of the fourth list was made effective September 1, 2019, with an additional tariff of 15%. The remainder of the fourth list is scheduled to have an additional tariff of 15% go into effect on December 15, 2019. Any increase in the cost of importing such goods and parts could decrease our margins, reduce the competitiveness of our products, or inhibit our ability to sell products or purchase necessary parts, which could have a material adverse effect on our business results, results of operations, or financial condition.

Changes in U.S. trade policy could result in one or more U.S. trading partners adopting responsive trade policy making it more difficult or costly for us to export our products to those countries. As indicated above, these measures could also result in increased costs for goods imported into the U.S. This in turn could require us to increase prices to our customers which may reduce demand, or, if we are unable to increase prices, result in lowering our margin on goods and services sold. To the extent that trade tariffs and other restrictions imposed by the U.S. increase the price of semiconductor equipment and related parts imported into the U.S., the cost of our materials may be adversely affected and the demand from customers for products and services may be diminished, which could adversely affect our revenues and profitability.

We cannot predict future trade policy, the terms of any renegotiated trade agreements or additional imposed tariffs and their impact on our business. The adoption and expansion of trade restrictions, the occurrence of a trade war, or other governmental action related to tariffs or trade agreements or policies has the potential to adversely impact demand for our products, our costs, our customers, our suppliers, and the U.S. economy, which in turn could adversely impact our business, financial condition and results of operations.

Changes in U.S. social, political, regulatory and economic conditions or in laws and policies governing foreign trade, manufacturing, development and investment in the territories and countries where we currently develop and sell products, and any negative sentiments towards the United States as a result of such changes, could adversely affect our business. In addition, negative sentiments towards the United States among non-U.S. customers and among non-U.S. employees or prospective employees could adversely affect sales or hiring and retention, respectively.

***Our operations in the People’s Republic of China are subject to significant political and economic uncertainties over which we have little or no control and we may be unable to alter our business practice in time to avoid reductions in revenues.***

A significant portion of our operations outside the United States are located in the PRC, which exposes us to risks, such as exchange controls and currency restrictions, changes in local economic conditions, changes in customs

regulations and tariffs, changes in tax policies, changes in PRC laws and regulations, possible expropriation or other PRC government actions, and unsettled political conditions including potential changes in U.S. policy regarding overseas manufacturing. In addition, Artesyn adds a significant additional footprint in both facilities and resources in China. These factors may have a material adverse effect on our operations, business, results of operations, and financial condition. See "We are exposed to risks associated with worldwide financial markets and the global economy" risk factor below.

The PRC's economy differs from the economies of most developed countries in many respects, including with respect to the amount of government involvement, level of development, rate of growth, control of foreign exchange and allocation of resources. While the economy of the PRC has experienced significant growth in the past 20 years, growth has been uneven across different regions and amongst various economic sectors of the PRC. The PRC government has implemented various measures to encourage economic development and guide the allocation of resources. Strikes by workers and picketing in front of the factory gates of certain companies in Shenzhen have caused unrest among some workers seeking higher wages, which could impact our manufacturing facility in Shenzhen. While some of the government's measures may benefit the overall economy of the PRC, they may have a negative effect on us. For example, our financial condition and results of operations may be materially and adversely affected by government control over capital investments or changes in tax regulations that are applicable to us as well as work stoppages.

***We are subject to risks inherent in international operations.***

Sales to our customers outside the United States were approximately 55.1% and 47.9% of our total sales for the nine months ended September 30, 2019 and 2018, respectively. The acquisitions of the power controls modules and high and low voltage product lines have increased our presence in international locations. Our success producing goods internationally and competing in international markets is subject to our ability to manage various risks and difficulties, including, but not limited to:

- our ability to effectively manage our employees at remote locations who are operating in different business environments from the United States;
- our ability to develop and maintain relationships with suppliers and other local businesses;
- compliance with product safety requirements and standards that are different from those of the United States;
- variations and changes in laws applicable to our operations in different jurisdictions, including enforceability of intellectual property and contract rights;
- trade restrictions, political instability, disruptions in financial markets, and deterioration of economic conditions;
- customs regulations and the import and export of goods (including customs audits in various countries that occur from time to time);
- the ability to provide enough levels of technical support in different locations;
- our ability to obtain business licenses that may be needed in international locations to support expanded operations;
- timely collecting accounts receivable from foreign customers including significant balances in accounts receivable from foreign customers as of September 30, 2019;
- collection of accounts receivable from foreign customers can also be unexpectedly delayed beyond our payment terms if the project itself is delayed and/or government funded. For example, tariffs and slower growth have impacted certain of our Chinese markets which have delayed projects. If these projects are permanently delayed or cancelled it could have a negative impact on our financial results or projections
- changes in tariffs, taxes, and foreign currency exchange rates; and
- recent protests and rioting in Hong Kong have affected travel in the region and may result in governmental actions that could impact business in the region.

Our profitability and ability to implement our business strategies, maintain market share and compete successfully in international markets will be compromised if we are unable to manage these and other international risks successfully.

***Our product lines are manufactured only at a few sites and our sites are not generally interchangeable.***

Our power products for the semiconductor industry are manufactured in Shenzhen, PRC. Our high voltage products are manufactured in Ronkonkoma and Lockport, New York, Littlehampton, United Kingdom and Shenzhen, PRC. Our thermal instrumentation products are manufactured in Vancouver, Washington, Santa Clara, California, Littlehampton, United Kingdom and Frankfurt, Germany. Our pyrometry solutions are manufactured in Ballerup, Denmark. Our Telecon & Networking and Data Center Computing products are manufactured in Zhongshan, PRC, Rosario, Philippines and Santa Rosa, Philippines. Some of Artesyn's products are contract manufactured by the carved-out former Artesyn consumer group at their Luoding, China facility until September 2020. Each facility is under operating lease and interruptions in operations could be caused by early termination of existing leases by landlords or failure by landlords to renew existing leases upon expiration, including the possibility that suitable operating locations may not be available in proximity to existing facilities which could result in labor or supply chain risks. Each facility manufactures different products, and therefore, is not interchangeable. Natural, uncontrollable occurrences or other operational issues at any of our manufacturing facilities could significantly reduce our productivity at such site and could prevent us from meeting our customers' requirements in a timely manner, or at all. Any potential losses from such occurrences could significantly affect our relationship with customers, operations and results of operations for a prolonged period. As a result, we are investing in additional production options in Malaysia. We believe this investment will help to mitigate our exposure to regional risks, improve our business continuity profile and lower costs over time.

Our restructuring and other cost reduction efforts have included transitioning manufacturing operations to our facility in Shenzhen from other manufacturing facilities, such as Fort Collins, Colorado and Littlehampton, United Kingdom, which renders us increasingly reliant upon our Shenzhen facility. We have been notified that we will be required to relocate our Shenzhen, PRC manufacturing facility by December 2021. A disruption in manufacturing at our Shenzhen facility, from whatever cause, could have a significantly adverse effect on our ability to fulfill customer orders, our ability to maintain customer relationships, our costs to manufacture our products and, as a result, our results of operations and financial condition.

***Our evolving manufacturing footprint may increase our risk.***

The nature of our manufacturing is evolving as we continue to grow by acquisition. Historically, our principal manufacturing location has been in Shenzhen, PRC; however, we have also added specialized manufacturing at our Littlehampton, United Kingdom, Ballerup, Denmark, Frankfurt, Germany, Ronkonkoma and Lockport, New York and Santa Clara, California facilities. From time to time we may be required to relocate manufacturing or migrate manufacturing of specific products between facilities or to third party manufacturers. We have been notified that we will be required to relocate our Shenzhen, PRC manufacturing facility by December 2021. If we do not successfully coordinate the timely manufacturing and distribution of our products during this time, we may have insufficient supply of products to meet customer demand, we could lose sales, we may experience a build-up in inventory, or we may incur additional costs. In addition, we are investing in a second factory in Malaysia to help mitigate business continuity, geopolitical and other risks. If we do not successfully implement this factory it could result in increased expenses and disruption of supply to our customers during the transition period.

In addition, the acquisition of Artesyn adds significant vertically integrated manufacturing sites in China and the Philippines. These sites represent large fixed costs which are difficult to flex as economic and other conditions change. If we do not successfully integrate these operations and operate them in an efficient manner, we could experience greater losses in times of revenue reduction.

***Raw material, part, component, and subassembly shortages, exacerbated by our dependence on sole and limited source suppliers, could affect our ability to manufacture products and systems and could delay our shipments.***

Our business depends on our ability to manufacture products that meet the rapidly changing demands of our customers. Our ability to timely manufacture our products depends in part on the timely delivery of raw materials, parts, components, and subassemblies from suppliers. We rely on sole and limited source suppliers for some of our raw materials, parts, components, and subassemblies that are critical to the manufacturing of our products.

This reliance involves several risks, including the following:

- the inability to obtain an adequate supply of required parts, components, or subassemblies;
- supply shortages, if a sole or limited source provider ceases operation;
- the need to fund the operating losses of a sole or limited source provider;
- reduced control over pricing and timing of delivery of raw materials and parts, components, or subassemblies;
- the need to qualify alternative suppliers;
- suppliers that may provide parts, components or subassemblies that are defective, contain counterfeit goods or are otherwise misrepresented to us in terms of form, fit or function; and
- the inability of our suppliers to develop technologically advanced products to support our growth and development of new products.
- the impact of geopolitical issues or tariffs that could affect the cost and availability of required parts, components, or subassemblies.

From time to time, our sole or limited source suppliers have given us notice that they are ending supply of critical parts, components, and subassemblies that are required for us to deliver product. If we cannot qualify alternative suppliers before ending supply of critical parts from the sole or limited source suppliers, we may be required to make a last-time-buy(s) and take possession of material amounts of inventory in advance of customer demand. In some instances, the last-time-buy materials required to be purchased may be for several years which in turn exposes us to additional excess and obsolescence risk. If we cannot qualify alternative suppliers before the last-time-buy materials are utilized in our products or legacy inverter warranty operations, we may be unable to deliver further product or legacy inverter warranty service to our customers.

Qualifying alternative suppliers could be time consuming and lead to delays in, or prevention of delivery of products to our customers, as well as increased costs. If we are unable to qualify additional suppliers and manage relationships with our existing and future suppliers successfully, if our suppliers experience financial difficulties including bankruptcy, or if our suppliers cannot meet our performance or quality specifications or timing requirements, we may experience shortages, delays, or increased costs of raw materials, parts, components, or subassemblies. This in turn could limit or prevent our ability to manufacture and ship our products, which could materially and adversely affect our relationships with our current and prospective customers and our business, financial condition, and results of operations.

***Our orders of raw materials, parts, components, and subassemblies are based on demand forecasts.***

We place orders with many of our suppliers based on our customers' quarterly forecasts and our annual forecasts. These forecasts are based on our customers' and our expectations as to demand for our products. As the quarter and the year progress, such demand can change rapidly or we may realize that our customers' expectations were overly optimistic or pessimistic, especially when industry or general economic conditions change. Orders with our suppliers cannot always be amended in response. In addition, in order to assure availability of certain components or to obtain priority pricing, we have entered into contracts with some of our suppliers that require us to purchase a specified amount of components and subassemblies each quarter, even if we are not able to use such components or subassemblies. Moreover, we have obligations to some of our customers to hold a minimum amount of finished goods in inventory, in order to fulfill just in time orders, regardless of whether the customers expect to place such orders. We currently have firm purchase commitments and agreements with various suppliers to ensure the availability of components. If demand for our products does not continue at current levels, we might not be able to use all of the components that we are required to purchase under these commitments and agreements, and our reserves for excess and obsolete inventory may increase, which could have a material adverse effect on our results of operations. If demand for our products exceeds our customers' and our forecasts, we may not be able to timely obtain enough raw materials, parts, components, or subassemblies, on favorable terms or at all, to fulfill the excess demand.

***Increased governmental action on income tax regulations could negatively impact our business.***

International governments have heightened their review and scrutiny of multinational businesses like ours which could increase our compliance costs and future tax liability to those governments. As governments continue to look for ways to increase their revenue streams, they could increase audits of companies to accelerate the recovery of

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monies perceived as owed to them under current or past regulations. Such an increase in audit activity could have a negative impact on companies which operate internationally, as we do.

***Activities necessary to integrate acquisitions may result in costs in excess of current expectations or be less successful than anticipated.***

We have completed acquisitions in the past and we may acquire other businesses in the future. The success of such transactions will depend on, among other things, our ability to integrate assets and personnel acquired in these transactions and to apply our internal controls process to these acquired businesses. The integration of acquisitions may require significant attention from our management, and the diversion of management's attention and resources could have a material adverse effect on our ability to manage our business. Furthermore, we may not realize the degree or timing of benefits we anticipated when we first entered into the acquisition transaction. If actual integration costs are higher than amounts originally anticipated, if we are unable to integrate the assets and personnel acquired in an acquisition as anticipated, or if we are unable to fully benefit from anticipated synergies, our business, financial condition, results of operations, and cash flows could be materially adversely affected.

***We have historically made acquisitions and divestitures. However, we may not find suitable acquisition candidates in the future and we may not be able to successfully integrate and manage acquired businesses. In either an acquisition or a divestiture, we may be required to make fundamental changes in our ERP, business processes and tools which could disrupt our core business and harm our financial condition.***

In the past, we have made strategic acquisitions of other corporations and entities, as well as asset purchases, and we continue to evaluate potential strategic acquisitions of complementary companies, products, and technologies. We have also divested businesses. In the future, we could:

- issue stock that would dilute our current stockholders' percentage ownership;
- pay cash that would decrease our working capital;
- incur debt;
- assume liabilities; or
- incur expenses related to impairment of goodwill and amortization.

Acquisitions and divestitures also involve numerous risks, including:

- problems combining or separating the acquired/divested operations, systems, technologies, or products;
- an inability to realize expected sales forecasts, operating efficiencies or product integration benefits;
- difficulties in coordinating and integrating geographically separated personnel, organizations, systems, and facilities;
- difficulties integrating business cultures;
- unanticipated costs or liabilities;
- diversion of management's attention from our core business;
- adverse effects on existing business relationships with suppliers and customers;
- potential loss of key employees, particularly those of purchased organizations;
- incurring unforeseen obligations or liabilities in connection with either acquisitions or divestitures; and
- the failure to complete acquisitions even after signing definitive agreements which, among other things, would result in the expensing of potentially significant professional fees and other charges in the period in which the acquisition or negotiations are terminated.

We may not be able to successfully identify appropriate acquisition candidates, to integrate any businesses, products, technologies, or personnel that we might acquire in the future or achieve the anticipated benefits of such transactions, which may harm our business.

***Changes in tax laws, tax rates, or mix of earnings in tax jurisdictions in which we do business, could impact our future tax liabilities and related corporate profitability***

We are subject to income taxes in the U.S. (federal and state) and numerous foreign jurisdictions. Tax laws, regulations, and administrative practices in various jurisdictions may be subject to significant change due to economic, political, and other conditions, and significant judgment is required in evaluating and estimating our provision and accruals for these taxes. There are many transactions that occur during the ordinary course of business for which the ultimate tax determination is uncertain. Our effective tax rates could be adversely affected by earnings being lower than anticipated in jurisdictions where we have lower statutory rates and earnings higher than anticipated in jurisdictions where we have higher statutory rates, losses incurred in jurisdictions for which we are not able to realize the related tax benefit, changes in foreign currency exchange rates, entry into new businesses and geographies and changes to our existing businesses, acquisitions (including integrations) and investments, changes in our deferred tax assets and liabilities and their valuation, and changes in the relevant tax, accounting, and other laws, regulations, administrative practices, principles, and interpretations, including fundamental changes to the tax laws applicable to corporate multinationals. The U.S., many countries in the European Union, and several other countries are actively considering changes in this regard.

***Changes in our provision for income taxes or adverse outcomes resulting from examination of our income tax returns could adversely affect our results***

Our provision for income taxes is subject to volatility and could be adversely affected by earnings being lower than anticipated in countries that have lower tax rates and higher than anticipated in countries that have higher tax rates; by changes in the valuation of our deferred tax assets and liabilities; by changes, regulations, and interpretations of foreign-derived intangible income (FDII), global intangible low-tax income (GILTI) and base erosion and anti-abuse tax laws (BEAT); by expiration of or lapses in tax incentives; by transfer pricing adjustments, including the effect of acquisitions on our legal structure; by tax effects of nondeductible compensation; by tax costs related to intercompany realignments; by changes in accounting principles; or by changes in tax laws and regulations, treaties, or interpretations thereof, including changes to the taxation of earnings of our foreign subsidiaries, the deductibility of expenses attributable to foreign income, and the foreign tax credit rules. Significant judgment is required to determine the recognition and measurement attribute prescribed in the accounting guidance for uncertainty in income taxes. The Organisation for Economic Co-operation and Development (OECD), an international association comprised of 36 countries, including the United States, has made changes to numerous long-standing tax principles. There can be no assurance that these changes, once adopted by countries, will not have an adverse impact on our provision for income taxes. Further, as a result of certain of our ongoing employment and capital investment actions and commitments, our income in certain countries is subject to reduced tax rates. Our failure to meet these commitments could adversely impact our provision for income taxes. In addition, we are subject of regular examination of our income tax returns by tax authorities. We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. There can be no assurance that the outcomes from these continuous examinations will not have an adverse effect on our operating results and financial condition.

***We are exposed to risks associated with worldwide financial markets and the global economy.***

Our business depends on the expansion of manufacturing capacity in our end markets and the installation base for the products we sell. In the past, severe tightening of credit markets, turmoil in the financial markets, and a weakening global economy have contributed to slowdowns in the industries in which we operate. Some of our key markets depend largely on consumer spending. Economic uncertainty, such as that recently experienced in the PRC, exacerbates negative trends in consumer spending and may cause our customers to push out, cancel, or refrain from placing orders.

Difficulties in obtaining capital and uncertain market conditions may also lead to a reduction of our sales and greater instances of nonpayment. These conditions may similarly affect our key suppliers, which could affect their ability to deliver parts and result in delays for our products. Further, these conditions and uncertainty about future economic conditions could make it challenging for us to forecast our operating results and evaluate the risks that may affect our business, financial condition, and results of operations. As discussed in "Our orders of raw materials, parts, components, and subassemblies are based on demand forecasts," a significant percentage of our expenses are relatively

fixed and based, in part, on expectations of future net sales. If a sudden decrease in demand for our products from one or more customers were to occur, the inability to adjust spending quickly enough to compensate for any shortfall would magnify the adverse impact of a shortfall in net sales on our results of operations. Conversely, if market conditions were to unexpectedly improve and demand for our products were to increase suddenly, we might not be able to respond quickly enough, which could have a negative impact on our results of operations and customer relations.

***Our results of operations could be affected by natural disasters and other events in the locations in which we or our customers or suppliers operate.***

We have manufacturing and other operations in locations subject to natural occurrences such as severe weather and geological events including earthquakes or tsunamis that could disrupt operations. In addition, our suppliers and customers also have operations in such locations. A natural disaster, fire, explosion, or other event that results in a prolonged disruption to our operations, or the operations of our customers or suppliers, may materially adversely affect our business, results of operations, or financial condition.

***We transitioned a significant amount of our supply base to Asian suppliers.***

We transitioned the purchasing of a substantial portion of components for our products to Asian suppliers to lower our materials costs and shipping expenses. These components might require us to incur higher than anticipated testing or repair costs, which would have an adverse effect on our operating results. Customers who have strict and extensive qualification requirements might not accept our products if these lower-cost components do not meet their requirements. A delay or refusal by our customers to accept such products, as well as an inability of our suppliers to meet our purchasing requirements, might require us to purchase higher-priced components from our existing suppliers or might cause us to lose sales to these customers, either of which could lead to decreased revenue and gross margins and have an adverse effect on our results of operations.

***We must continually design and introduce new products into the markets we serve to respond to competition and rapid technological changes.***

We operate in a highly competitive environment where innovation is critical, our future success depends on many factors, including the effective commercialization and customer acceptance of our products and services. The development, introduction and support of a broadening set of products is critical to our continued success. Our results of operations could be adversely affected if we do not continue to develop new products, improve and develop new applications for existing products, and differentiate our products from those of competitors resulting in their adoption by customers.

***We must achieve design wins to retain our existing customers and to obtain new customers, although design wins achieved do not necessarily result in substantial sales.***

Driven by continuing technology migration and changing customers demand the markets we serve are constantly changing in terms of advancement in applications, core technology and competitive pressures. New products we design for capital equipment manufacturers typically have a lifespan of five to ten years. Our success and future growth depend on our products being designed into our customers new generations of equipment as they develop new technologies and applications. We must work with these manufacturers early in their design cycles to modify, enhance and upgrade our products or design new products that meet the requirements of their new systems. The design win process is highly competitive, and we may win or lose new design wins for our existing customers or new customers next generations of equipment. In case existing or new customers do not choose our products as a result of the development, evaluation and qualification efforts related to the design win process, our market share will be reduced, the potential revenues related to the lifespan of our customers' products, which can be five to ten years, will not be realized, and our business, financial condition and results of operations would be materially and adversely impacted.

***We generally have no long-term contracts with our customers requiring them to purchase any specified quantities from us.***

Our sales are primarily made on a purchase order basis, and we generally have no long-term purchase commitments from our customers, which is typical in the industries we serve. As a result, we are limited in our ability to

predict the level of future sales or commitments from our current customers, which may diminish our ability to allocate labor, materials, and equipment in the manufacturing process effectively. In addition, we may purchase inventory in anticipation of sales that do not materialize, resulting in excess and obsolete inventory write-offs.

***If we are unable to adjust our business strategy successfully for some of our product lines to reflect the increasing price sensitivity on the part of our customers, our business and financial condition could be harmed.***

Our business strategy for many of our product lines has been focused on product performance and technology innovation to provide enhanced efficiencies and productivity. As a result of recent economic conditions and changes in various markets that we serve, our customers have experienced significant cost pressures. We have observed increased price sensitivity on the part of our customers. If competition against any of our product lines should come to focus solely on price rather than on product performance and technology innovation, we will need to adjust our business strategy and product offerings accordingly, and if we are unable to do so, our business, financial condition, and results of operations could be materially and adversely affected.

***Our competitive position could be weakened if we are unable to convince end users to specify that our products be used in the equipment sold by our customers.***

The end users in our markets may direct equipment manufacturers to use a specified supplier's product in their equipment at a particular facility. This occurs with frequency because our products are critical in manufacturing process control for thin-film applications. Our success, therefore, depends in part on our ability to have end users specify that our products be used at their facilities. In addition, we may encounter difficulties in changing established relationships of competitors that already have a large installed base of products within such facilities.

***The markets we operate in are highly competitive.***

We face substantial competition, primarily from established companies, some of which have greater financial, marketing, and technical resources than we do. We expect our competitors will continue to develop new products in direct competition with ours, improve the design and performance of their products, and introduce new products with enhanced performance characteristics. In order to remain competitive, we must improve and expand our products and product offerings. In addition, we may need to maintain a high level of investment in research and development and expand our sales and marketing efforts, particularly outside of the United States. We might not be able to make the technological advances and investments necessary to remain competitive. If we were unable to improve and expand our products and product offerings, our business, financial condition, and results of operations could be materially and adversely affected.

***A significant portion of our sales and accounts receivable are concentrated among a few customers.***

Our ten largest customers accounted for 47.8% and 63.8% of our sales for the nine months ended September 30, 2019 and 2018, respectively. During the nine months ended September 30, 2019, sales to Applied Materials, Inc. and Lam Research were \$109.0 million and \$61.4 million, respectively. During the nine months ended September 30, 2018 sales to Applied Materials, Inc., and Lam Research were \$198.2 million and \$92.4 million, respectively. Applied Material, Inc. had a \$30.7 million and \$34.3 million accounts receivable balance as of September 30, 2019 and December 31, 2018, respectively. Lam Research had a \$8.2 million and \$12.2 million accounts receivable balance as of September 30, 2019 and December 31, 2018, respectively. A significant decline in sales from either or both customers, or the Company's inability to collect on these sales, could materially and adversely impact our business, results of operations and financial condition.

***We maintain significant amounts of cash in international locations.***

Given the global nature of our business, we have both domestic and international concentrations of cash and investments. The value of our cash, cash equivalents, and marketable securities can be negatively affected by liquidity, credit deterioration, financial results, economic risk, political risk, sovereign risk or other factors. The Company intends to utilize its foreign cash to expand our international operations through internal growth and strategic acquisitions. If our intent changes or if these funds are needed for our U.S. operations, or we are negatively impacted by any of the factors above, our financial condition and results of operations could be materially adversely affected.

***Globalization of sales increases risk of compliance with policy.***

We operate in an increasingly complex sales environment around the world which places greater importance on our global control environment and imposes additional oversight risk. Such increased complexity could adversely affect our operating results by increasing compliance costs in the near-term and by increasing the risk of control failures in the event of non-compliance.

***Market pressures and increased low-cost competition may reduce or eliminate our profitability.***

Our customers continually exert pressure on us to reduce our prices and extend payment terms. Given the nature of our customer base and the highly competitive markets in which we compete, we may be required to reduce our prices or extend payment terms to remain competitive. We have recently seen pricing pressure from our largest customers due in part to low-cost competition and market consolidation. As a result of the competitive markets we serve, from time to time we may enter into long term pricing agreements with our largest customers that results in reduced product pricing. Such reduced product pricing may result in product margin declines unless we are successful in reducing our product costs ahead of such price reductions. In addition, Artesyn competes in markets that are more price competitive which may include dual or multi sourcing. We believe some of our Asian competitors benefit from local governmental funding incentives and purchasing preferences from end-user customers in their respective countries. Moreover, in order to be successful in the current competitive environment, we are required to accelerate our investment in research & development to meet time-to-market, performance and technology adoption cycle needs of our customers simply in order to compete for design wins, and if successful, receive potential purchase orders. Given such up-front investments we must make and the competitive nature of our markets, we may not be able to reduce our expenses in an amount enough to offset potential margin declines or loss of business and may not be able to meet customer product time-line expectations. The potential decrease in cash flow could materially and adversely impact our financial condition.

***We are highly dependent on our intellectual property.***

Our success depends significantly on our proprietary technology. We attempt to protect our intellectual property rights through patents and non-disclosure agreements; however, we might not be able to protect our technology, and competitors might be able to develop similar technology independently. In addition, the laws of some foreign countries might not afford our intellectual property the same protections as do the laws of the United States. Our intellectual property is not protected by patents in several countries in which we do business, and we have limited patent protection in other countries, including the PRC. The cost of applying for patents in foreign countries and translating the applications into foreign languages requires us to select carefully the inventions for which we apply for patent protection and the countries in which we seek such protection. Generally, our efforts to obtain international patents have been concentrated in the European Union and certain industrialized countries in Asia, including Korea, Japan, and Taiwan. If we are unable to protect our intellectual property successfully, our business, financial condition, and results of operations could be materially and adversely affected.

The PRC commercial law is relatively undeveloped compared to the commercial law in the United States. Limited protection of intellectual property is available under PRC law. Consequently, manufacturing our products in the PRC may subject us to an increased risk that unauthorized parties may attempt to copy our products or otherwise obtain or use our intellectual property. We may not be able to protect our intellectual property rights effectively. Additionally, we may not have adequate legal recourse if we encounter infringements of our intellectual property in the PRC.

***Our legacy inverter products may suffer higher than anticipated litigation, damage or warranty claims.***

Our legacy inverter products (of which we discontinued the manufacture, engineering, and sale in December 2015 and which are reflected as Discontinued Operations in this filing) contain components that may contain errors or defects and were sold with original product warranties ranging from one to ten years with an option to purchase additional warranty coverage for up to 20 years. If any of our products are defective or fail because of their design, we might be required to repair, redesign or recall those products or to pay damages (including liquidated damages) or warranty claims, and we could suffer significant harm to our reputation. We are experiencing increasing claims from customers and suppliers and increasing litigation related to the legacy inverter product line. We review such claims and

vigorously defend against such lawsuits in the ordinary course of our business. We cannot assure that any such claims or litigation brought against us will not have a material adverse effect on our business or financial statements. Our involvement in such litigation could result in significant expense to us and divert the efforts of our technical and management personnel. We also accrue a warranty reserve for estimated costs to provide warranty services including the cost of technical support, product repairs, and product replacement for units that cannot be repaired. Our estimate of costs to fulfill our warranty obligations is based on historical experience and expectation of future conditions. To the extent we experience increased warranty claim activity or increased costs associated with servicing those claims, our warranty accrual will increase, resulting in additional expenses in the line "Income (loss) from discontinued operations, net of tax" on our Consolidated Statement of Operations in future periods. We plan to continue supporting inverter customers with service maintenance and repair operations. This includes performing service to fulfill obligations under existing service maintenance contracts. There is no certainty that these can be performed profitably and could be adversely affected by higher than anticipated product failure rates, loss of critical service technician skills, an inability to obtain service parts, customer demands and disputes and cost of repair parts, among other factors. See *Note 4. Disposed and Discontinued Operations* in Part I, Item 1 "Unaudited Condensed Consolidated Financial Statements" contained herein.

***Our products may suffer from defects or errors leading to damage or warranty claims.***

Our products use complex system designs and components that may contain errors or defects, particularly when we incorporate new technology into our products or release new versions. If any of our products are defective or fail because of their design, we might be required to repair, redesign or recall those products, pay damages (including liquidated damages) or warranty claims, and we could suffer significant harm to our reputation. We accrue a warranty reserve for estimated costs to provide warranty services including the cost of technical support, product repairs, and product replacement for units that cannot be repaired. Our estimate of costs to fulfill our warranty obligations is based on historical experience and expectation of future conditions. To the extent we experience increased warranty claim activity or increased costs associated with servicing those claims, our warranty accrual will increase, resulting in decreased gross profit. In recent years, we have experienced increased warranty costs for our legacy inverter product lines, which is reflected in "Income from discontinued operations, net of income taxes." See *Note 4. Disposed and Discontinued Operations* in Part I, Item 1 "Unaudited Condensed Consolidated Financial Statements" contained herein.

***Unfavorable currency exchange rate fluctuations may lead to lower operating margins, or may cause us to raise prices, which could result in reduced sales.***

Currency exchange rate fluctuations could have an adverse effect on our sales and results of operations, and we could experience losses with respect to forward exchange contracts into which we may enter. Unfavorable currency fluctuations could require us to increase prices to foreign customers, which could result in lower net sales by us to such customers. Alternatively, if we do not adjust the prices for our products in response to unfavorable currency fluctuations, our results of operations could be materially and adversely affected. In addition, most sales made by our foreign subsidiaries are denominated in the currency of the country in which these products are sold and the currency in which they receive payment for such sales could be less valuable at the time of receipt as a result of exchange rate fluctuations. Given recent acquisitions in Europe and Asia, our exposure to fluctuations in the value of the Euro and Chinese Yuan is becoming more significant. From time to time, we enter into forward exchange contracts and local currency purchased options to reduce currency exposures related to likely or pending transactions including those arising from intercompany sales of inventory. However, we cannot be certain that our efforts will be adequate to protect us against significant currency fluctuations or that such efforts will not expose us to additional exchange rate risks, which could materially and adversely affect our results of operations.

***Recent developments relating to the United Kingdom's referendum vote in favor of leaving the European Union and related actions could adversely affect us.***

On June 23, 2016, the United Kingdom (UK) held a referendum in which voters approved an exit from the European Union ("EU"). On March 29, 2017, the UK's ambassador to the EU delivered a letter to the president of the European Council that gave formal notice under Article 50 of the Lisbon Treaty of UK's withdrawal from the EU, commonly referred to as "Brexit". As a result, negotiations have commenced to determine the terms of the UK's withdrawal from the EU as well as its relationship with the EU going forward, including the terms of trade between the

UK and the EU. Although it is unknown what those terms will be, it is possible that there will be greater restrictions on imports and exports between the UK and EU countries and increased regulatory complexities. These changes may adversely affect our sales, operations and financial results. Our operations in the UK may be adversely affected by extreme fluctuations in the UK exchange rates. Moreover, the imposition of any import restrictions and duties levied on our UK products as imported for EU customers may make our products more expensive for such customers and less competitive from a pricing perspective.

***Changes in the value of the Chinese yuan could impact the cost of our operation in the PRC and our sales growth in our PRC markets.***

The PRC government is continually pressured by its trading partners to allow its currency to float in a manner like other major currencies. Any change in the value of the Chinese yuan may impact our ability to control the cost of our products in the world market. Specifically, the decision by the PRC government to allow the yuan to begin to float against the United States dollar could significantly increase the labor and other costs incurred in the operation of our Shenzhen and Zhongshan facilities and the cost of raw materials, parts, components, and subassemblies that we source in the PRC, thereby having a material and adverse effect on our financial condition and results of operations.

***Difficulties with our enterprise resource planning ("ERP") system and other parts of our global information technology system could harm our business and results of operation.***

Like many multinational corporations, we maintain a global information technology system, including software products licensed from third parties. The acquisition of Artesyn adds additional information systems that are initially different from current systems. Any system, network or Internet failures, misuse by system users, the hacking into or disruption caused by unauthorized access or loss of license rights could disrupt our ability to timely and accurately manufacture and ship products or to report our financial information in compliance with the timelines mandated by the SEC. Any such failure, misuse, hacking, disruptions or loss would likely cause a diversion of management's attention from the underlying business and could harm our operations. In addition, a significant failure of our global information technology system could adversely affect our ability to complete an evaluation of our internal controls and attestation activities pursuant to Section 404 of the Sarbanes-Oxley Act of 2002.

***If our network security measures are breached and unauthorized access is obtained to a customer's data or our data or our information technology systems, we may incur significant legal and financial exposure and liabilities.***

As part of our day-to-day business, we store our data and certain data about our customers in our global information technology system. Unauthorized access to our data, including any regarding our customers, could expose us to a risk of loss of this information, loss of business, litigation and possible liability. These security measures may be breached by intentional misconduct by computer hackers, as a result of third-party action, employee error, malfeasance or otherwise. Additionally, third parties may attempt to fraudulently induce employees or customers into disclosing sensitive information such as usernames, passwords or other information in order to gain access to our customers' data or our data, including our intellectual property and other confidential business information, or our information technology systems. Because the techniques used to obtain unauthorized access, or to sabotage systems, change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. Any security breach could result in a loss of confidence by our customers, damage our reputation, disrupt our business, lead to legal liability and negatively impact our future sales.

***Our business is subject to complex and evolving U.S. and international laws and regulations regarding privacy and data protection. Many of these laws and regulations are subject to change and uncertain interpretation and could result in claims, changes to our business practices, penalties, increased cost of operations, or declines in user growth or engagement, or otherwise harm our business.***

Regulatory authorities around the world are considering several legislative and regulatory proposals concerning data protection, including measures to ensure that encryption of users' data does not hinder law enforcement agencies' access to that data. In addition, the interpretation and application of consumer and data protection laws in the U.S., Europe and elsewhere are often uncertain and in flux. It is possible that these laws may be interpreted and applied in a manner that is inconsistent with our data practices. These legislative and regulatory proposals, if adopted, and such

interpretations could, in addition to the possibility of fines, result in an order requiring that we change our data practices, which could have an adverse effect on our business and results of operations. Complying with these various laws could cause us to incur substantial costs or require us to change our business practices in a manner adverse to our business.

Recent legal developments in Europe have created compliance uncertainty regarding certain transfers of personal data from Europe to the United States. For example, the General Data Protection Regulation ("GDPR"), effective in the EU starting on May 25, 2018, applies to all our activities conducted from an establishment in the EU or related to products and services that we offer to EU users. The GDPR creates a range of new compliance obligations, which could cause us to change our business practices, and will significantly increase financial penalties for noncompliance (including possible fines of up to 4% of global annual turnover for the preceding financial year or €20 million (whichever is higher) for the most serious infringements).

***The loss of any of our key personnel could significantly harm our results of operations and competitive position.***

Our success depends to a significant degree upon the continuing contributions of our key management, technical, marketing, and sales employees. We may not be successful in retaining our key employees or attracting or retaining additional skilled personnel as required. Failure to retain or attract key personnel could significantly harm our results of operations and competitive position. Our success in hiring and retaining employees depends on a variety of factors, including the attractiveness of our compensation and benefit programs, global economic or political and industry conditions, our organizational structure, our reputation, culture and working environment, competition for talent and the availability of qualified employees, the availability of career development opportunities, and our ability to offer a challenging and rewarding work environment. We must develop our personnel to provide succession plans capable of maintaining continuity during the inevitable unpredictability of personnel retention. While we have plans for key management succession and long-term compensation plans designed to retain our senior employees, if our succession plans do not operate effectively, our business could be adversely affected.

***We have been, and in the future may again be, involved in litigation. Litigation is costly and could result in further restrictions on our ability to conduct business or make use of market relationships we have developed, or an inability to prevent others from using technology.***

Litigation may be necessary to enforce our commercial or property rights, to defend ourselves against claimed violations of such rights of others, or to protect our interests in regulatory, tax, customs, commercial, and other disputes or similar matters. In particular, we have been experiencing increased litigation related to our legacy inverter product line. Litigation often requires a substantial amount of our management's time and attention, as well as financial and other resources, including:

- substantial costs in the form of legal fees, fines, and royalty payments;
- restrictions on our ability to sell certain products or in certain markets;
- an inability to prevent others from using technology we have developed; and
- a need to redesign products or seek alternative marketing strategies.

Any of these events could have a significant adverse effect on our business, financial condition, and results of operations.

***Return on investments or interest rate declines on plan investments could result in additional unfunded pension obligations for our pension plan.***

We currently have unfunded obligations to our pension plans. The extent of future contributions to the pension plan depends heavily on market factors such as the discount rate used to calculate our future obligations and the actual return on plan assets which enable future payments. We estimate future contributions to the plan using assumptions with respect to these and other items. Changes to those assumptions could have a significant effect on future contributions. Additionally, a material deterioration in the funded status of the plan could increase pension expenses and reduce our profitability. See *Note 17. Pension Liability* in Part I, Item 1 "Unaudited Condensed Consolidated Financial Statements" contained herein.

***Funds associated with our marketable securities that we have traditionally held as short-term investments may not be liquid or readily available.***

In the past, certain of our investments have been affected by external market conditions that impacted the liquidity of the investment. We do not currently have investments with reduced liquidity, but external market conditions that we cannot anticipate or mitigate may impact the liquidity of our marketable securities. Any changes in the liquidity associated with these investments may require us to borrow funds at terms that are not favorable or repatriate cash from international locations at a significant cost. We cannot be certain that we will be able to borrow funds or continue to repatriate cash on favorable terms, or at all. If we are unable to do so, our available cash may be reduced until those investments can be liquidated. The lack of available cash may prevent us from taking advantage of business opportunities that arise and may prevent us from executing some of our business plans, either of which could cause our business, financial condition or results of operations to be materially and adversely affected.

***Our intangible assets may become impaired.***

As of September 30, 2019, we have \$232.2 million of goodwill and \$189.6 million in intangible assets. We periodically review the estimated useful lives of our identifiable intangible assets, taking into consideration any events or circumstances that might result in either a diminished fair value, or for intangible assets, a revised useful life. The events and circumstances include significant changes in the business climate, legal factors, operating performance indicators, and competition. Any impairment or revised useful life could have a material and adverse effect on our financial position and results of operations and could harm the trading price of our common stock.

***We are subject to numerous governmental regulations.***

We are subject to federal, state, local and foreign regulations, including environmental regulations and regulations relating to the design and operation of our products and control systems and regulations governing the import, export and customs duties related to our products. We might incur significant costs as we seek to ensure that our products meet safety and emissions standards, many of which vary across the states and countries in which our products are used. In the past, we have invested significant resources to redesign our products to comply with these directives. Compliance with future regulations, directives, and standards could require us to modify or redesign some products, make capital expenditures, or incur substantial costs. Also, we may incur significant costs in complying with the numerous imports, exports and customs regulations as we seek to sell our products internationally. If we do not comply with current or future regulations, directives, and standards:

- we could be subject to fines and penalties;
- our production or shipments could be suspended; and
- we could be prohibited from offering particular products in specified markets.

If we were unable to comply with current or future regulations, directives and standards, our business, financial condition and results of operations could be materially and adversely affected.

***Financial reform legislation will result in new laws and regulations that may increase our costs of operations.***

The Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") requires various federal agencies to adopt a broad range of new implementing rules and regulations, and to prepare numerous studies and reports for Congress. On August 22, 2012, under the Dodd-Frank Act, the SEC adopted new requirements for companies that use certain minerals and metals, known as conflict minerals, in their products, whether or not these products are manufactured by third parties. These requirements require companies to perform due diligence, disclose and report whether or not such minerals originate from the Democratic Republic of Congo and adjoining countries. We must perform sufficient due diligence to determine whether such minerals are used in the manufacture of our products. However, the implementation of these requirements could adversely affect the sourcing, availability and pricing of such minerals if they are found to be used in the manufacture of our products. In addition, we incur costs to comply with the disclosure requirements, including costs related to determining the source of any of the relevant minerals and metals used in our products. Since our supply chain is complex, we may not be able to sufficiently verify the origins for these minerals and metals used in our products through the due diligence procedures that we implement, which may harm our

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reputation. In such event, we may also face difficulties in satisfying customers who require that all the components of our products are certified as conflict mineral free.

***The market price of our common stock has fluctuated and may continue to fluctuate for reasons over which we have no control.***

The stock market has from time to time experienced, and is likely to continue to experience, extreme price and volume fluctuations. Prices of securities of technology companies have been especially volatile and have often fluctuated for reasons that are unrelated to their operating performance. In the past, companies that have experienced volatility in the market price of their stock have been the subject of securities class action litigation. If we were the subject of securities class action litigation, it could result in substantial costs and a diversion of management's attention and resources.

***Our operating results are subject to fluctuations, and if we fail to meet the expectations of securities analysts or investors, our share price may decrease significantly.***

Our annual and quarterly results may vary significantly depending on various factors, many of which are beyond our control. Because our operating expenses are based on anticipated revenue levels, our sales cycle for development work is relatively long, and a high percentage of our expenses are fixed for the short term, a small variation in the timing of recognition of revenue can cause significant variations in operating results from period to period. If our earnings do not meet the expectations of securities analysts or investors, the price of our stock could decline.

## ITEM 6. EXHIBITS

The exhibits listed in the following Exhibit Index are filed as part of this Quarterly Report on Form 10-Q.

### **Exhibit Index to Form 10-Q for the Period Ended September 30, 2019**

- 2.1 [Stock Purchase Agreement, dated May 14, 2019, by and among Advanced Energy Industries, Inc., Artesyn Embedded Technologies, Inc., Pontus Intermediate Holdings II, LLC and Pontus Holdings, LLC \(Incorporated by reference to the Registrant's Current Report on Form 8-K \(File No. 000-26966\), filed May 15, 2019\)\\*](#)
- 2.2 [First Amendment to the Stock Purchase Agreement dated September 9, 2019, by and among Advanced Energy Industries, Inc., Artesyn Embedded Technologies, Inc., Pontus Intermediate Holdings II, LLC and Pontus Holdings, LLC \(Incorporated by reference to the Registrant's Current Report on Form 8-K \(File No. 000-26966\), filed September 10, 2019\)\\*](#)
- 10.1 [Credit Agreement, dated September 10, 2019, by and among Advanced Energy Industries, Inc., Bank of America N.A. as the Administrative Agent, Bank of America N.A., Bank of the West and HSBC Bank USA, N.A. as the Joint Lead Arrangers and Joint Book Runners, and Citibank N.A., as the Co-Manager. \(Incorporated by reference to the Registrant's Current Report on Form 8-K \(File No. 000-26966\), filed September 10, 2019\).](#)
- 31.1 [Certification of the Chief Executive Officer Pursuant to Rule 13a-14\(a\) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.](#)
- 31.2 [Certification of the Chief Financial Officer Pursuant to Rule 13a-14\(a\) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.](#)
- 32.1 [Certification of the Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.](#)
- 32.2 [Certification of the Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.](#)
- 101.INS XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
- 101.SCH XBRL Taxonomy Extension Schema Document
- 101.CAL XBRL Taxonomy Extension Calculation Linkbase Document
- 101.DEF XBRL Taxonomy Extension Definition Linkbase Document
- 101.LAB XBRL Taxonomy Extension Label Linkbase Document
- 101.PRE XBRL Taxonomy Extension Presentation Linkbase Document
- 104 Cover Page Interactive Data File—the cover page interactive data file does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.

Attached as Exhibit 101 to this report are the following materials from Advanced Energy, Inc.'s Quarterly Report on Form 10-Q for the quarter ended September 30, 2019, formatted in XBRL (eXtensible Business Reporting Language): (i) the Condensed Consolidated Statements of Earnings, (ii) the Condensed Consolidated Statements of Comprehensive Earnings, (iii) the Condensed Consolidated Balance Sheets, (iv) the Condensed

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Consolidated Statements of Cash Flows, (v) the Condensed Consolidated Statements of Stockholders' Equity, and (vi) the Notes to the Condensed Consolidated Financial Statements.

\* Schedules, exhibits, and similar supporting attachments or agreements to the Stock Purchase Agreement are omitted pursuant to Item 601(b)(2) of Regulation S-K. Advanced Energy Industries, Inc. agrees to furnish a supplemental copy of any omitted schedule or similar attachment to the Securities and Exchange Commission upon request.

**SIGNATURES**

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

ADVANCED ENERGY INDUSTRIES, INC.

Dated: November 12, 2019

/s/ Paul Oldham

\_\_\_\_\_  
Paul Oldham

Chief Financial Officer & Executive Vice President

I, Yuval Wasserman, certify that:

1. I have reviewed this quarterly report on Form 10-Q for the period ended September 30, 2019 of Advanced Energy Industries, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 12, 2019

/s/ Yuval Wasserman  
Yuval Wasserman  
Chief Executive Officer

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I, Paul Oldham, certify that:

1. I have reviewed this quarterly report on Form 10-Q for the period ended June 30, 2019 of Advanced Energy Industries, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 12, 2019

/s/ Paul Oldham

Paul Oldham

Chief Financial Officer & Executive Vice President

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Certification of the Chief Executive Officer  
Pursuant to 18 U.S.C. Section 1350,  
as Adopted Pursuant to Section 906  
of the Sarbanes-Oxley Act of 2002

I hereby certify, pursuant to 18 U.S.C. Section 1350, that the accompanying Quarterly Report on Form 10-Q for the period ended September 30, 2019, of Advanced Energy Industries, Inc., fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in the Quarterly Report on Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of Advanced Energy Industries, Inc.

Date: November 12, 2019

/s/ Yuval Wasserman

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Yuval Wasserman

Chief Executive Officer

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

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Certification of the Chief Financial Officer  
Pursuant to 18 U.S.C. Section 1350,  
as Adopted Pursuant to Section 906  
of the Sarbanes-Oxley Act of 2002

I hereby certify, pursuant to 18 U.S.C. Section 1350, that the accompanying Quarterly Report on Form 10-Q for the period ended September 30, 2019, of Advanced Energy Industries, Inc., fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in the Quarterly Report on Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of Advanced Energy Industries, Inc.

Date: November 12, 2019

/s/ Paul Oldham

Paul Oldham

Chief Financial Officer & Executive Vice President

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

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