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

FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended January 31, 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 0-13200

AstroNova, Inc.
(Exact name of registrant as specified in its charter)

Rhode Island (State or other jurisdiction of incorporation or organization)	**05-0318215** (I.R.S. Employer Identification No.)
600 East Greenwich Avenue, West Warwick, Rhode Island (Address of principal executive offices)	**02893** (Zip Code)

Registrant's telephone number, including area code: (401) 828-4000

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

Title of each class	Name of each exchange on which registered
Common Stock, $.05 Par Value	**NASDAQ Global Market**

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

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 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 checkmark if disclosure of delinquent filers pursuant to Item 405 of regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statement incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

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

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

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

The aggregate market value of the registrant's voting common equity held by non-affiliates at July 27, 2018 was approximately $112,325,000 based on the closing price on the Nasdaq Global Market on that date.

As of April 5, 2019 there were 6,987,823 shares of Common Stock (par value $0.05 per share) of the registrant outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Company's definitive Proxy Statement for the 2019 Annual Meeting of Shareholders are incorporated by reference into Part III of this Annual Report on Form 10-K where indicated.

ASTRONOVA, INC.

FORM 10-K ANNUAL REPORT

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ASTRONOVA, INC.

Forward-Looking Statements

Information included in this Annual Report on Form 10-K may contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are not statements of historical fact, but rather reflect our current expectations concerning future events and results. We generally use the words “believes,” “expects,” “intends,” “plans,” “anticipates,” “likely,” “continues,” “may,” “will,” and similar expressions to identify forward-looking statements. Such forward-looking statements, including those concerning our expectations, involve risks, uncertainties and other factors, some of which are beyond our control, which may cause our actual results, performance or achievements to be materially different from those expressed or implied by such forward-looking statements. These risks, uncertainties and factors include, but are not limited to, those factors set forth in this Annual Report on Form 10-K under “Item 1A. Risk Factors.” We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. The reader is cautioned not to unduly rely on such forward-looking statements when evaluating the information presented in this Annual Report on Form 10-K.

PART I

Item 1. *Business*

General

Unless otherwise indicated, references to “AstroNova,” the “Company,” “we,” “our,” and “us” in this Annual Report on Form 10-K refer to AstroNova, Inc. and its consolidated subsidiaries.

AstroNova designs, develops, manufactures and distributes a broad range of specialty printers and data acquisition and analysis systems, including both hardware and software, which incorporate advanced technologies to acquire, store, analyze, and present data in multiple formats. Target markets for hardware and software products of the Company include aerospace, apparel, automotive, avionics, chemicals, computer peripherals, communications, distribution, food and beverage, general manufacturing, packaging and transportation.

The Company’s products are distributed around the world through its own sales force, authorized dealers and through independent dealers and representatives.

Our business consists of two segments, Product Identification (“PI”) and Test & Measurement (“T&M”). The PI segment includes specialty printing systems sold under the brand names QuickLabel ®, TrojanLabel ® and GetLabels™. The Company’s T&M segment includes test and measurement systems sold under the AstroNova ® brand name and includes the Company’s line of aerospace flight deck printers. Refer to Note 16, “Nature of Operations, Segment Reporting and Geographical Information,” in our audited consolidated financial statements elsewhere in this report for financial information regarding the Company’s segments.

On September 28, 2017, AstroNova, Inc. entered into an Asset Purchase and License Agreement with Honeywell International, Inc. pursuant to which it acquired an exclusive perpetual world-wide license to manufacture Honeywell’s narrow-format flight deck printers for the Boeing 737 and Airbus 320 aircraft. Revenue related to that transaction has been included as part of the aerospace printer product line of the Company’s Test & Measurement segment since the acquisition date. On February 1, 2017, AstroNova completed its acquisition of TrojanLabel ApS (“TrojanLabel”), a European manufacturer of digital color label presses and specialty printing systems for label professionals and commercial printers. TrojanLabel is reported as part of our PI segment beginning with the first quarter of fiscal year 2018. Refer to Note 3, “Acquisitions,” in our audited consolidated financial statements included elsewhere in this report.

The following description of our business should be read in conjunction with “Management’s Discussion and Analysis of Financial Conditions and Results of Operations” on pages 19 through 30 of this Annual Report on Form 10-K.

Description of Business

Product Overview

AstroNova leverages its expertise in data visualization technologies to design, manufacture and market specialty printing systems, test and measurement systems and related services for select growing markets on a global basis.

Products sold under the QuickLabel, TrojanLabel and GetLabels brands are used in industrial and commercial product packaging, branding and labeling applications to print custom labels, packaging materials and corresponding visual content in-house digitally. The PI segment offers a variety of hardware and software products and associated supplies that allow customers to mark, track and enhance the appearance of their products. Products sold under the AstroNova brand enable our customers to acquire and record visual and electronic signal data from local and networked data streams and sensors. The recorded data is processed and analyzed and then stored and presented in various visual output formats. In the aerospace market, the Company has a long history of using its data visualization technologies to provide networking systems and high-resolution light-weight flight deck and cabin printers.

Product Identification

QuickLabel brand products include tabletop and work cell-ready digital color label printers and specialty OEM printing systems. QuickLabel products are sold to manufacturers, processors, and retailers who label products on a short-run basis. QuickLabel customers benefit from the efficiency, flexibility and cost-savings of digitally printing their labels in-house and on demand. Industry segments that commonly benefit from short-run digital label printing include chemicals, cosmetics, food and beverage, medical products, and pharmaceuticals, among many others.

Current QuickLabel models include a family of high-end monochrome printers, the QL-300, a high performance color toner based printer, the QL-800 wide format inkjet color label printer, and the Kiaro! ® family of high-speed inkjet color label printers which includes the QL-120, a professional table top digital label printer.

TrojanLabel brand products include professional digital color label presses and specialty printing systems, as well as overprinting solutions. This highly innovative line of presses expands the Company's customer base by offering commercial printers (label converters) and packaging manufacturers the ability to execute smaller runs with an affordable digital solution. It is commonly sold to larger brand owners, label converters, commercial printers and packaging manufacturers.

Our current TrojanLabel portfolio includes the T2-C, a compact, digital mini press designed for 24/7 label production; the parent of the T2-C, the T2, a label press with a full-size PC display that supports mini jumbo label rolls for commercial production; the T4, a professional label press and finishing system which enables print, die cut and lamination all in one machine with a much smaller footprint than others in the market; and the T3, a modular over-printer offered in multiple OEM integration versions.

GetLabels brand products include a full line of supplies including labels, tags, inks, toners, and thermal transfer ribbons. Quality label materials and substrates are designed and constructed for an extensive variety of labeling applications. Every one of the label materials and substrates are qualified and tested in our Materials Research Laboratory to ensure durability and compatibility for the QuickLabel brand, TrojanLabel brand and also a variety of competitor printers to meet the specific labeling needs for a wide diversity of markets.

The Product Identification segment additionally licenses various specialized software used to operate the printers and presses, design labels and manage printing on an automated basis and also provides worldwide training and support.

T&M

Products sold under the AstroNova T&M brand acquire and record visual data from local and networked data streams and sensors. The recorded data is processed and analyzed and then stored and presented in various visual output formats. The Company supplies a range of products and services that include hardware, software and supplies to customers in a variety of industries.

Our T&M products include; the Daxus ® DXS-100 distributed data acquisition system, the TMX ® high-speed data acquisition system, the SmartCorder ® DDX-100 portable data acquisition system, the EV-5000 digital strip chart recording system, the ToughWriter ® , Miltope-brand and RITEC-brand airborne printers, the PTA-45B cockpit printer that is subject to the Asset Purchase and Licenses Agreement with Honeywell and ToughSwitch ® ruggedized Ethernet switches.

AstroNova airborne printers are used in the flight deck and in the cabin of military, commercial and business aircraft to print hard copies of data required for the safe and efficient operation of aircraft, including navigation maps, arrival and departure procedures, flight itineraries, weather maps, performance data, passenger data, and various air traffic control data. ToughSwitch Ethernet switches are used primarily in military aircraft and military vehicles to connect multiple computers or Ethernet devices. The airborne printers and Ethernet switches are ruggedized to comply with rigorous military and commercial flight worthiness standards for operation under extreme environmental conditions. The Company is currently furnishing ToughWriter airborne printers for many aircraft made by Airbus, Boeing, Embraer, Bombardier, Lockheed, Gulfstream, and others.

The Company's portable data acquisition systems are used in research and development (R&D), field testing, production and maintenance applications in a wide range of industries including aerospace and defense, energy, industrial and transportation. The TMX data acquisition system is an all-in-one solution for applications in which the ability to monitor high channel counts and view a wide variety of input signals, including time-stamped and synchronized video capture data and audio notation is essential. The SmartCorder DDX-100 is an ultra-portable all-in-one solution for facilities maintenance and field testing. The Daxus DXS-100 is a distributed data acquisition platform that can be connected to the SmartCorder DDX-100 to increase channel count or networked as part of a distributed measurement system spanning vast distances.

Technology

Our core technologies are data visualization technologies that relate to (1) acquiring data, (2) conditioning the data, (3) displaying the data on hard copy, monitor or electronic storage media, and (4) analyzing the data.

Patents and Copyrights

We hold a number of product patents in the United States and in foreign countries. We rely on a combination of copyright, patent, trademark and trade secret laws in the United States and other jurisdictions to protect our technology and brand name. While we consider our intellectual property to be important to the operation of our business, we do not believe that any existing patent, license, trademark or other intellectual property right is of such importance that its loss or termination would have a material adverse effect on the Company's business taken as a whole.

Manufacturing and Supplies

We manufacture many of the products that we design and sell. Raw materials and supplies are typically available from a wide variety of sources. We manufacture many of the sub-assemblies and parts in-house including printed circuit board assemblies, harnesses, machined parts and general final assembly. Many parts not manufactured in-house are standard electronic items available from multiple sources. Other parts are designed by us and manufactured by outside vendors. We purchase certain components, assembled products and supplies used in the manufacture of our products from a single source or limited supplier source. While we believe these components, products and supplies could be sourced elsewhere with appropriate changes in the design of our products, such design might not be feasible on a timely basis and any interruption in these components, products or supplies could adversely affect our business.

Marketing and Competition

The Company competes worldwide in multiple markets. In the specialty printing field, we believe we are a market leader in tabletop digital color label printing technology and in aerospace printers. In the data acquisition area, we are one of the leaders in portable, reliable, high-speed data acquisition systems.

We retain a leadership position by virtue of proprietary technology, product reputation, delivery, technical assistance, and service to customers. The number of competitors varies by product line. Our management believes that we have a market leadership position in many of the markets we serve. Key competitive factors vary among our product lines, but include technology, quality, service and support, distribution network, and breadth of product and service offerings.

Our products are sold by direct field salespersons as well as independent dealers and representatives. In the United States, the Company has factory-trained direct field salespeople located in major cities from coast to coast specializing in either Product Identification or AstroNova T&M products. We also have direct field sales or service centers in Canada, China, Denmark, France, Germany, India, Malaysia, Mexico, Singapore, Spain and the United Kingdom staffed by our own employees and dedicated third party contractors. Additionally, we utilize over 150 independent dealers and representatives selling and marketing our products in over 50 countries.

No single customer accounted for 10% or more of our net revenue in any of the last three fiscal years.

Order Backlog

Our backlog varies regularly. It consists of a blend of orders for end-user customers as well as original equipment manufacturer customers. Manufacturing production is designed to meet forecasted demands and customer requirements. Accordingly, the amount of order backlog may not indicate future sales trends. Backlog at January 31, 2019, 2018 and 2017 was $25.6 million, $21.4 million and $17.6 million, respectively.

Employees

As of January 31, 2019, we employed 374 people. We are generally able to satisfy our employment requirements. No employees are represented by a union. We believe that employee relations are good.

Other Information

The Company’s business is not seasonal in nature. However, our revenue is impacted by the size of certain individual transactions, which can cause fluctuations in revenue from quarter to quarter.

Available Information

We make available on our website (www.astronovainc.com) the Company’s Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and, if applicable, amendments to those reports filed or furnished pursuant to Sections 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after the Company electronically files such material with, or furnishes it to, the Securities and Exchange Commission (SEC). These filings are also accessible on the SEC’s website at http://www.sec.gov.

Item 1A. *Risk Factors*

The following risk factors should be carefully considered in evaluating AstroNova, because such factors may have a significant impact on our business, operating results, liquidity and financial condition. As a result of the risk factors set forth below, actual results could differ materially from those projected in any forward-looking statements. Additional risks and uncertainties not presently known to us, or that we currently consider to be immaterial, may also impact our business operations.

AstroNova's operating results and financial condition could be harmed if the markets into which we sell our products decline or do not grow as anticipated.

Any decline in our customers' markets or in their general economic conditions would likely result in a reduction in demand for our products. Although we have continued to experience measured progress, as sales have increased steadily from prior years, we are still affected by the continued global economic uncertainty. Some of our customers may be reluctant to make capital equipment purchases or may defer certain of these purchases to future quarters. Some of our customers may also limit consumable product purchases to quantities necessary to satisfy immediate needs with no provisions to stock supplies for future use. Also, if our customers' markets decline, we may not be able to collect on outstanding amounts due to us. Such declines could harm our results of operations, financial position and cash flows and could limit our ability to continue to remain profitable.

AstroNova's future revenue growth depends on our ability to develop and introduce new products and services on a timely basis and achieve market acceptance of these new products and services.

The markets for our products are characterized by rapidly changing technologies and accelerating product introduction cycles. Our future success depends largely upon our ability to address the rapidly changing needs of our customers by developing and supplying high-quality, cost-effective products, product enhancements and services on a timely basis and by keeping pace with technological developments and emerging industry standards. The success of our new products will also depend on our ability to differentiate our offerings from our competitors' offerings, price our products competitively, anticipate our competitors' development of new products, and maintain high levels of product quality and reliability. AstroNova spends a significant amount of time and effort related to the development of our airborne and color printer products as well as our Test and Measurement data recorder products. Failure to further develop any of our new products and their related markets as anticipated could adversely affect our future revenue growth and operating results.

As we introduce new or enhanced products, we must also successfully manage the transition from older products to minimize disruption in customers' ordering patterns, avoid excessive levels of older product inventories and provide sufficient supplies of new products to meet customer demands. The introduction of new or enhanced products may shorten the life cycle of our existing products, or replace sales of some of our current products, thereby offsetting the benefit of even a successful product introduction and may cause customers to defer purchasing existing products in anticipation of the new products. Additionally, when we introduce new or enhanced products, we face numerous risks relating to product transitions, including the inability to accurately forecast demand, manage excess and obsolete inventories, address new or higher product cost structures, and manage different sales and support requirements due to the type or complexity of the new products. Any customer uncertainty regarding the timeline for rolling out new products or AstroNova's plans for future support of existing products may cause customers to delay purchase decisions or purchase competing products which would adversely affect our business and operating results.

AstroNova is dependent upon contract manufacturers for some of our products. If these manufacturers do not meet our requirements, either in volume or quality, then we could be materially harmed.

We subcontract the manufacturing and assembly of certain of our products to independent third parties at facilities located in various countries. Relying on subcontractors involves a number of significant risks, including:

- Limited control over the manufacturing process;
- Potential absence of adequate production capacity;
- Potential delays in production lead times;
- Unavailability of certain process technologies; and
- Reduced control over delivery schedules, manufacturing yields, quality and costs.

If one of our significant subcontractors becomes unable or unwilling to continue to manufacture these products in required volumes or fails to meet our quality standards, we will have to identify qualified alternate subcontractors or we will have to take over the manufacturing ourselves. Additional qualified subcontractors may not be available, or may not be available on a timely or cost competitive basis. Any interruption in the supply or increase in the cost of the products manufactured by third party subcontractors or failure of a subcontractor to meet quality standards could have a material adverse effect on our business, operating results and financial condition.

For certain components, assembled products and supplies, AstroNova is dependent upon single or limited source suppliers. If these suppliers do not meet demand, either in volume or quality, then we could be materially harmed.

Although we use standard parts and components for our products where possible, we purchase certain components, assembled products and supplies used in the manufacture of our products from a single source or limited supplier sources. If the supply of a key component, assembled products or certain supplies were to be delayed or curtailed or, in the event a key manufacturing or sole supplier delays shipment of such components or assembled products, our ability to ship products in desired quantities and in a timely manner would be adversely affected. Our business, results of operations and financial position could also be adversely affected, depending on the time required to obtain sufficient quantities from the original source or, if possible, to identify and obtain sufficient quantities from an alternative source. Additionally, if any single or limited source supplier becomes unable or unwilling to continue to supply these components, assembled products or supplies in required volumes, we will have to identify and qualify acceptable replacements or redesign our products with different components. Alternative sources may not be available, or product redesign may not be feasible on a timely basis. Any interruption in the supply of or increase in the cost of the components, assembled products and supplies provided by single or limited source suppliers could have a material adverse effect on our business, operating results and financial condition.

AstroNova faces significant competition, and our failure to compete successfully could adversely affect our results of operations and financial condition.

We operate in an environment of significant competition, driven by rapid technological advances, evolving industry standards, frequent new product introductions and the demands of customers to become more efficient. Our competitors range from large international companies to relatively small firms. We compete on the basis of technology, performance, price, quality, reliability, brand, distribution and customer service and support. Our success in future performance is largely dependent upon our ability to compete successfully in the markets we currently serve and to expand into additional market segments. Additionally, current competitors or new market entrants may develop new products with features that could adversely affect the competitive position of our products. To remain competitive, we must develop new products, services and applications and periodically enhance our existing offerings. If we are unable to compete successfully, we could lose market share and important customers to our competitors which could materially and adversely affect our business, results of operations and financial position.

AstroNova's profitability is dependent upon our ability to obtain adequate pricing for our products and to control our cost structure.

Our success depends on our ability to obtain adequate pricing for our products and services which provides a reasonable return to our shareholders. Depending on competitive market factors, future prices we obtain for our products and services may decline from previous levels. In addition, pricing actions to offset the effect of currency devaluations may not prove sufficient to offset further devaluations or may not hold in the face of customer resistance and/or competition. If we are unable to obtain adequate pricing for our products and services, our results of operations and financial position could be materially adversely affected.

We are continually reviewing our operations with a view towards reducing our cost structure, including but not limited to downsizing our employee base, improving process and system efficiencies and outsourcing some internal functions. From time to time we also engage in restructuring actions to reduce our cost structure. If we are unable to maintain process and systems changes resulting from cost reduction and prior restructuring actions, our results of operations and financial position could be materially adversely affected.

AstroNova has significant inventories on hand.

We maintain a significant amount of inventory. Although we have provided an allowance for slow-moving and obsolete inventory, any significant unanticipated changes in future product demand or market conditions, including obsolescence or the uncertainty in the global market, could have an impact on the value of inventory and adversely impact our business, operating results and financial condition.

Economic, political and other risks associated with international sales and operations could adversely affect AstroNova's results of operations and financial position.

Because we sell our products worldwide, our business is subject to risks associated with doing business internationally. Revenue from international operations, which includes both direct and indirect sales to customers outside the U.S., accounted for 39% of our total revenue for fiscal year 2019, and we anticipate that international sales will continue to account for a significant portion of our revenue. In addition, we have employees, suppliers, job functions and facilities located outside the U.S. Accordingly, our business, operating results and financial condition could be harmed by a variety of factors, including:

- Interruption to transportation flows for delivery of parts to us and finished goods to our customers;
- Customer and vendor financial stability;
- Fluctuations in foreign currency exchange rates;
- Changes in a specific country's or region's environment including political, economic, monetary, regulatory or other conditions;
- Trade protection measures and import or export licensing requirements;
- Negative consequences from changes in tax laws;
- Difficulty in managing and overseeing operations that are distant and remote from corporate headquarters;
- Difficulty in obtaining and maintaining adequate staffing;
- Differing labor regulations;
- Differing protection of intellectual property;
- Unexpected changes in regulatory requirements; and
- Geopolitical turmoil, including terrorism and war.

AstroNova could incur liabilities as a result of installed product failures due to design or manufacturing defects.

AstroNova has incurred and could incur additional liabilities as a result of installed product failures due to design or manufacturing defects. Our products may have defects despite our internal testing or testing by current or potential customers. These defects could result in among other things, a delay in recognition of sales, loss of sales, loss of market share, failure to achieve market acceptance or substantial damage to our reputation. We could be subject to material claims by customers, and may incur substantial expenses to correct any product defects.

In addition, through our acquisitions, we have assumed, and may in the future assume, liabilities related to products previously developed by an acquired company that have not been subjected to the same level of product development, testing and quality control processes used by us, and may have known or undetected errors. Some types of errors may not be detected until the product is installed in a user environment. This may cause AstroNova to incur significant warranty and repair or re-engineering costs, may divert the attention of engineering personnel from product development efforts, and may cause significant customer relations problems such as reputational problems with customers resulting in increased costs and lower profitability.

Certain of our products require certifications by regulators or standards organizations, and our failure to obtain or maintain such certifications could negatively impact our business.

In certain industries and for certain products, such as those used in aircraft, we must obtain certifications for our products by regulators or standards organizations. If we fail to obtain required certifications for our products, or if we fail to maintain such certifications on our products after they have been certified, our business, financial condition, results of operations and cash flows could be materially and adversely affected.

Changes in our tax rates or exposure to additional income tax liabilities or assessments could affect our profitability. In addition, audits by tax authorities could result in additional tax payments for prior periods.

On December 22, 2017, the Tax Cuts and Jobs Act ("TCJA" or "Tax Act") was signed into law. The Tax Act significantly revises the U.S. federal corporate income tax law and includes a broad range of tax reform measures affecting business including among other things, the reduction of the corporate income tax rate from 35% to 21%, the loss of certain business deductions, the acceleration of first-year expensing of certain capital expenditures and a one-time tax imposed on unremitted cumulative non-U.S. earnings of foreign subsidiaries. The Tax Act is complex and far-reaching, and we continue to evaluate the actual impact of its enactment on the Company. Any material adverse impact resulting from the Tax Act that has not yet been identified could have an adverse affect on our business, results of operations, financial condition and cash flow.

Changes to tax laws and regulations or changes to the interpretation thereof (including regulations and interpretations pertaining to the Tax Act), the ambiguity of tax laws and regulations, the subjectivity of factual interpretations, uncertainties regarding the geographic mix of earnings in any particular period, and other factors, could have a material impact on our estimates of our effective tax rate and our deferred tax assets and liabilities. The impact of these factors may be substantially different from period-to-period.

In addition, the amount of income taxes we pay is subject to ongoing audits by U.S. federal, state and local tax authorities. If audits result in payments or assessments different from our reserves, our future results may include unfavorable adjustments to our tax liabilities and our financial statements could be adversely affected. Any further significant changes to the tax system in the United States or in other jurisdictions (including changes in the taxation of international income as further described below) could adversely affect our financial statements.

The agreements governing our indebtedness subject us to various restrictions that may limit our ability to pursue business opportunities.

The agreement governing our current credit facility contains, and any future debt agreements may include, a number of restrictive covenants that impose significant operating and financial restrictions on us and our subsidiaries. Such restrictive covenants may significantly limit our ability to:

- Incur future indebtedness;
- Place liens on assets;
- Pay dividends or distributions on our and our subsidiaries' capital stock;
- Repurchase or acquire our capital stock;
- Conduct mergers or acquisitions;

- Sell assets; and/or
- Alter our or our subsidiaries' capital structure, to make investments and loans, to change the nature of their business, and to prepay subordinated indebtedness.

Such agreements also require us to satisfy other requirements, including maintaining certain financial ratios and condition tests. Our ability to meet these requirements can be affected by events beyond our control, and we may be unable to meet them. To the extent we fail to meet any such requirements and are in default under our debt obligations, our financial condition may be materially adversely affected. These restrictions may limit our ability to engage in activities that could otherwise benefit us. To the extent that we are unable to engage in activities that support the growth, profitability and competitiveness of our business, our business, results of operations and financial condition could be adversely affected.

AstroNova may not realize the anticipated benefits of past or future acquisitions, divestitures and strategic partnerships, and integration of acquired companies or divestiture of businesses may negatively impact AstroNova's overall business.

We have made strategic investments in other companies, products and technologies, including our September 2017 Asset Purchase and License Agreement with Honeywell International, Inc. and our February 2017 acquisition of the digital color label press and specialty printing systems business of the Danish company, TrojanLabel. We may continue to identify and pursue acquisitions of complementary companies and strategic assets, such as customer bases, products and technology. However, there can be no assurance that we will be able to identify suitable acquisition opportunities. In any acquisition that we complete we cannot be certain that:

- We will successfully integrate the operations of the acquired business with our own;
- All the benefits expected from such integration will be realized;
- Management's attention will not be diverted or divided, to the detriment of current operations;
- Amortization of acquired intangible assets or possible impairment of acquired intangibles will not have a negative impact on operating results or other aspects of our business;
- Delays or unexpected costs related to the acquisition will not have a detrimental impact on our business, operating results and financial condition;
- Customer dissatisfaction with, or performance problems at, an acquired company will not have an adverse impact on our reputation; and
- Respective operations, management and personnel will be compatible.

In certain instances as permitted by applicable law and NASDAQ rules, acquisitions may be consummated without seeking and obtaining shareholder approval, in which case shareholders will not have an opportunity to consider and vote upon the merits of such an acquisition. Although we will endeavor to evaluate the risks inherent in a particular acquisition, there can be no assurance that we will properly ascertain or assess such risks.

We may also divest certain businesses from time to time. Divestitures will likely involve risks, such as difficulty splitting up businesses, distracting employees, potential loss of revenue and negatively impacting margins, and potentially disrupting customer relationships. A successful divestiture depends on various factors, including our ability to:

- Effectively transfer assets, liabilities, contracts, facilities and employees to the purchaser;
- Identify and separate the intellectual property to be divested from the intellectual property that we wish to keep; and
- Reduce fixed costs previously associated with the divested assets or business.

All of these efforts require varying levels of management resources, which may divert our attention from other business operations. Further, if market conditions or other factors lead us to change our strategic direction, we may not realize the expected value from such transactions.

If we are not able to successfully integrate or divest businesses, products, technologies or personnel that we acquire or divest, or able to realize expected benefits of our acquisitions, divestitures or strategic partnerships, AstroNova's business, results of operations and financial condition could be adversely affected.

Adverse conditions in the global banking industry and credit markets could impair our liquidity or interrupt our access to capital markets, borrowings or financial transactions to hedge certain risks.

At the end of fiscal 2019, we had approximately $7.5 million of cash and cash equivalents. Our cash and cash equivalents are held in a mix of money market funds, bank demand deposit accounts and foreign bank accounts. Disruptions in the financial markets may, in some cases, result in an inability to access assets such as money market funds that traditionally have been viewed as highly liquid. Any failure of our counterparty financial institutions or funds in which we have invested may adversely impact our cash and cash equivalent positions and, in turn, our financial position.

To date, we have been able to access financing that has allowed us to make investments in growth opportunities and fund working capital requirements as needed. In addition, we occasionally enter into financial transactions to hedge certain foreign exchange and interest rate risks. Our continued access to capital markets, the stability of our lenders and their willingness to support our needs, and the stability of the counter parties to our financial transactions that hedge risks are essential for us to meet our current and long-term obligations, fund operations, and fund our future strategic initiatives. An interruption in our access to external financing or financial transactions to hedge risk could materially and adversely affect our business and financial condition.

AstroNova could experience a significant disruption in, or breach in security of our information technology system which could harm our business and adversely affect our results of operations.

We employ information technology systems to support our business. Any security breaches or other disruptions to our information technology infrastructure could interfere with operations, compromise our information and that of our customers and suppliers, and expose us to liability which could adversely impact our business and reputation. In the ordinary course of business, we rely on information technology networks and systems, some of which are managed by third parties, to process, transmit and store electronic information, and to manage or support a variety of business processes and activities. While we continually work to safeguard our systems and mitigate potential risks, there is no assurance that such actions will be sufficient to prevent cyber attacks or security breaches. As a result, our information technology networks and infrastructure may still be vulnerable to damage, disruptions or shutdowns due to attack by hackers or breaches, employee error, power outages, computer viruses, telecommunication or utility failures, systems failures, natural disasters, catastrophic events or other unforeseen events and in any such circumstance our system redundancy and other disaster recovery planning may be ineffective or inadequate. While we have experienced, and expect to continue to experience, these types of threats to our information technology networks and infrastructure, none of them to date has had a material impact. Any such events could result in legal claims or proceedings, liability or penalties under privacy laws, disruption in operations, and damage to the Company's brand and reputation, which could adversely affect our business, operating results and financial condition.

AstroNova could experience risks related to the implementation of our new global enterprise resource planning system.

We are currently engaged in a multi-year process of conforming all of our operations to one global enterprise resource planning system ("ERP"). The ERP is designed to improve the efficiency of our supply chain and financial transaction processes, accurately maintain our books and records, and provide information important to the operation of the business to our management team. The implementation of the ERP will continue to require significant investment of human and financial resources, and we may experience significant delays, increased costs and other difficulties as a result. Any significant disruption or deficiency in the design, implementation and transition to the new ERP could negatively impact our ability to:

- record and process orders,

- manufacture and ship our products in a timely manner, and
- process data and electronic communications among our business locations,

any of which could have a material adverse effect on our business, consolidated financial condition or results of operations.

We also face the challenge of supporting our older systems while we implement the new ERP system. While we have invested significant resources in planning and project management, significant implementation issues may arise that impact our normal business operations and could have a material adverse impact on our operating results and cash flow.

AstroNova depends on our key employees and other highly qualified personnel and our ability to attract and develop new, talented professionals. Our inability to attract and retain key employees could compromise our future success and our business could be harmed.

Our future success depends upon our ability to attract and retain professional and executive employees, including sales, operating, marketing, and financial management personnel. There is substantial competition for skilled personnel, and the failure to attract, develop, retain and motivate qualified personnel could negatively impact our business, financial condition, results of operations and future prospects. In order to hire new personnel or retain or replace our key personnel, we may be required to increase compensation, which would decrease net income. Additionally, a number of key employees have special knowledge of customers, supplier relationships, business processes, manufacturing operations, and financial management issues and the loss of any of these employees could harm the company’s ability to perform efficiently and effectively until their knowledge and skills are replaced, which might be difficult to do quickly, and as a result could have a material adverse effect on our business, financial condition, and results of operations.

AstroNova is subject to laws and regulations; failure to address or comply with these laws and regulations could harm our business and adversely affect our results of operations.

Our operations are subject to laws, rules, regulations, including environmental regulations, government policies and other requirements in each of the jurisdictions in which we conduct business. Changes in laws, rules, regulations, policies or requirements could result in the need to modify our products and could affect the demand for our products, which may have an adverse impact on our future operating results. In addition, we must comply with regulations restricting our ability to include lead and certain other substances in our products. If we do not comply with applicable laws, rules and regulations we could be subject to costs and liabilities and our business may be adversely impacted.

Certain of our operations and products are subject to environmental, health and safety laws and regulations, which may result in substantial compliance costs or otherwise adversely affect our business.

Our operations are subject to numerous federal, state, local and foreign laws and regulations relating to protection of the environment, including those that impose limitations on the discharge of pollutants into the air and water, establish standards for the use, treatment, storage and disposal of solid and hazardous materials and wastes, and govern the cleanup of contaminated sites. We have used and continue to use various substances in our products and manufacturing operations, and have generated and continue to generate wastes, which have been or may be deemed to be hazardous or dangerous. As such, our business is subject to and may be materially and adversely affected by compliance obligations and other liabilities under environmental, health and safety laws and regulations. These laws and regulations affect ongoing operations and require capital costs and operating expenditures in order to achieve and maintain compliance.

Our operations are subject to anti-corruption laws, including the U.S. Foreign Corrupt Practices Act, and any determination that the Company or any of its subsidiaries has violated the Foreign Corrupt Practices Act could have a material adverse effect on our business.

The U.S. Foreign Corrupt Practices Act (FCPA), the UK Bribery Act and similar worldwide anti-corruption laws generally prohibit companies and their intermediaries from making improper payments to government officials and others for the purpose of obtaining or retaining business. Our internal policies mandate compliance with these anti-corruption laws. We operate in parts of the world that have experienced governmental corruption to some degree, and in certain circumstances, strict compliance with anti-corruption laws may conflict with local customs and practices. Despite our training and compliance programs, there can be no assurance that our internal control policies and procedures will protect us from reckless or criminal acts committed by those of our employees or agents who violate our policies.

Unauthorized access to personal data could give rise to liabilities as a result of governmental regulation, conflicting legal requirements or differing views of personal privacy rights and compliance with laws designed to prevent unauthorized access of personal data could be costly.

AstroNova collects and stores certain data, including proprietary business information, and may have access to confidential or personal information that is subject to privacy and security laws, regulations and customer-imposed controls. Security breaches or other unauthorized access to, or the use or transmission of, personal user information could result in a variety of claims against us, including privacy-related claims. There are numerous laws in the countries in which we operate regarding privacy and the storage, sharing, use, processing, disclosure and protection of this kind of information, the scope of which are changing, inconsistent and conflicting and subject to differing interpretations, and new laws of this nature are adopted from time to time. For example, in 2016 the European Commission adopted the General Data Protection Regulation (GDPR), a comprehensive privacy and data protection reform that became effective in May 2018. The GDPR, which is applicable to all companies processing data of European Union residents, imposes significant fines and sanctions for violations. Additionally, certain developing countries in which we do business are also considering adopting privacy and data protection laws and regulations and legislative proposals concerning privacy and the protection of user information are often pending before the U.S. Congress and various U.S. state legislatures.

While we believe that we comply with industry standards and applicable laws and industry codes of conduct relating to privacy and data protection in all material respects, there is no assurance that we will not be subject to claims that we have violated applicable laws or codes of conduct, that we will be able to successfully defend against such claims or that we will not be subject to significant fines and penalties in the event of non-compliance.

Any failure or perceived failure by us (or any third parties with whom we have contracted to store such information) to comply with applicable privacy and security laws, policies or related contractual obligations or any compromise of security that results in unauthorized access to personal information may result in governmental enforcement actions, significant fines, litigation, claims of breach of contract and indemnity by third parties and adverse publicity. In the case of such an event, our reputation may be harmed, we could lose current and potential users and the competitive positions of our various brands could be diminished, any or all of which could adversely affect our business, financial condition and results of operations.

We may record future impairment charges, which could materially adversely impact our results of operations.

We test our goodwill balances annually, or more frequently if indicators are present or changes in circumstances suggest that impairment may exist. We assess goodwill for impairment at the reporting unit level and, in evaluating the potential for impairment of goodwill, we make assumptions regarding estimated revenue projections, growth rates, cash flows and discount rates. We monitor the key drivers of fair value to detect events or other changes that would warrant an interim impairment test of our goodwill and intangible assets. Relatively small declines in the future performance and cash flows of a reporting unit or asset group, changes in our reporting units or in the structure of our business as a result of future reorganizations, acquisitions or divestitures of assets or businesses, or small changes in other key assumptions, may result in the recognition of significant asset impairment charges, which could have a material adverse impact on our results of operations.

We also review our long-lived assets including property, plant and equipment, and other intangibles assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Factors we consider include significant under-performance relative to expected historical or projected future operating results, significant negative industry or economic trends and our market capitalization relative to net book value. We may be required in the future to record a significant charge to earnings in our financial statements during the period in which any impairment of our long-lived assets is determined. Such charges could have a significant adverse impact on our results of operations and our financial condition.

Changes in accounting standards and subjective assumptions, estimates, and judgments by management related to complex accounting matters could significantly affect our financial results or financial condition.

Generally accepted accounting principles and related accounting pronouncements, implementation guidelines, and interpretations with regard to a wide range of matters that are relevant to our business, such as revenue recognition, asset impairment and fair value determinations, inventories, business combinations and intangible asset valuations, leases, and litigation, are highly complex and involve many subjective assumptions, estimates and judgments. Changes in these rules or their interpretation or changes in underlying assumptions, estimates, or judgments could significantly change our reported or expected financial performance or financial condition.

Compliance with rules governing "conflict minerals" could adversely affect the availability of certain product components and our costs and results of operations could be materially harmed.

SEC rules require disclosures regarding the use of "conflict minerals" mined from the Democratic Republic of the Congo and adjoining countries necessary to the functionality or production of products manufactured or contracted to be manufactured. We have determined that we use gold, tin and tantalum, each of which is considered a "conflict mineral" under the SEC rules, as they occur in electronic components supplied to us in the manufacture of our products. Because of this finding, we are required to conduct inquiries designed to determine whether any of the conflict minerals contained in our products originated or may have originated in the conflict region or come from recycled or scrap sources. There are costs associated with complying with these disclosure requirements, including performing due diligence in regards to the source of any conflict minerals used in our products, in addition to the cost of remediation or other changes to products, processes or services of supplies that may be necessary as a consequence of such verification activities. As we use contract manufacturers for some of our products, we may not be able to sufficiently verify the origins of the relevant minerals used in our products through the due diligence procedures that we implement. We may also encounter challenges to satisfy those customers who require that all of the components of our products be certified as conflict-free, which could place us at a competitive disadvantage if we are unable to do so. As a result, our business, operating results and financial condition could be harmed.

Due to the fact that we have operations located within the United Kingdom (UK), our business and financial results may be negatively impacted as a result of the UK's planned exit from the European Union (EU). These risks would be heightened in the event that the UK and the EU are unable to reach a mutually satisfactory exit agreement.

On June 23, 2016, the UK held a referendum in which voters approved an exit from the European Union, commonly referred to as "Brexit." On March 29, 2017, the UK Government invoked Article 50 of the Treaty on the European Union, which is expected to result in the UK exiting the EU. The UK Government continues to negotiate the terms of the UK's future relationship with the EU, although there is still considerable uncertainty as to the outcome. It is possible that following agreement, the new relationship will result in greater restrictions on imports and exports between the UK and EU countries, as well as the US. and increased regulatory complexity. There is also the potential for disruption to the movement of raw materials and finished goods in the event that no agreement is reached by the planned exit date. These changes may adversely affect our operations and financial results.

Additionally, following the referendum on Brexit, the value of the British pound (GBP) incurred significant fluctuations. If the value of the British Pound Sterling continues to incur similar fluctuations, unfavorable exchange rate changes may negatively affect the value of our operations located in the UK, as translated to our reporting currency, the USD, in accordance with US GAAP, which may impact the revenue and earnings we report. Continued fluctuations in the GBP may also result in the imposition of price adjustments by EU-based suppliers to our UK operations, as those suppliers seek to compensate for the changes in value of the GBP as compared to the Euro. In addition, a so-called "Hard Brexit," where no formal agreement is made between the EU and the UK prior to the UK's exit, could result in a continued deflation of the British Pound Sterling; additional increases in prices, fees, taxes or tariffs applicable to goods that are bought and sold between the UK and EU, and a negative impact on end markets in the UK as a result of declines in consumer sentiment or decreased immigration rates into the UK. Any of these results could have a material adverse effect on our business, financial condition and results of operations.

Item 1B. Unresolved Staff Comments

None.

Item 2. *Properties*

The following table sets forth information regarding the Company's principal owned properties, all of which are included in the consolidated balance sheet appearing elsewhere in this annual report.

Location	Approximate Square Footage	Principal Use
West Warwick, Rhode Island, USA	135,500	Corporate headquarters, research and development, manufacturing, sales and service

AstroNova also leases facilities in various other locations. The following information pertains to each location:

Location	Approximate Square Footage	Principal Use
Dietzenbach, Germany	18,630	Manufacturing, sales and service
Brossard, Quebec, Canada	4,500	Manufacturing, sales and service
Elancourt, France	4,150	Sales and service
Copenhagen, Denmark	4,800	R&D
Maidenhead, England	1,000	Sales and service
Schaumburg, Illinois, USA	3,428	Sales (Product Identification only)
Shanghai, China	461	Sales (Product Identification only)
Irvine, California, USA	3,100	Sales (Product Identification only)
Tambauam Chennai, India	70	Sales (Product Identification only)
Mexico City, Mexico	65	Sales (Product Identification only)

We believe our facilities are well maintained, in good operating condition and generally adequate to meet our needs for the foreseeable future.

Item 3. *Legal Proceedings*

There are no pending or threatened legal proceedings against the Company believed to be material to the financial position or results of operations of the Company.

Item 4. *Mine Safety Disclosures*

Not applicable.

PART II

Item 5. ***Market for the Registrant ' s Common Stock, Related Stockholder Matters and Issuer Purchases of Equity Securities***

AstroNova common stock trades on the NASDAQ Global Market under the symbol "ALOT."

AstroNova had approximately 256 shareholders of record as of April 5, 2019, which does not reflect shareholders with beneficial ownership in shares held in nominee name.

Dividend Policy

AstroNova began a program of paying quarterly cash dividends in fiscal 1992 and has paid a dividend for 110 consecutive quarters. During fiscal 2019, 2018 and 2017, we paid a dividend of $0.07 per share in each quarter and anticipate that we will continue to pay comparable cash dividends on a quarterly basis.

Stock Repurchases

Pursuant to an authorization approved by AstroNova's Board of Directors in August 2011, the Company is currently authorized to repurchase up to 390,000 shares of common stock, subject to any increase or decrease by the Board of Directors at any time. This is an ongoing authorization without any expiration date.

During the fourth quarter of fiscal 2019, the Company made the following repurchases of its common stock:

	Total Number of Shares Repurchased	Average Price paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares That May Be Purchased Under The Plans or Programs
November 1 – November 30	—	—	—	390,000
December 1 - December 31	—	—	—	390,000
January 1 - January 31	1,899(a)	19.55(a)	—	390,000

(a) An executive of the company delivered 1,899 shares of the Company's common stock toward the satisfaction of taxes due in connection with the vesting of restricted shares. The shares delivered were valued at a market value of $19.55 per share and are included with treasury stock in the consolidated balance sheet. This transaction did not impact the number of shares authorized for repurchase under the Company's current repurchase program.

Item 6. ***Selected Financial Data***

Historical Financial Summary

Income Statement Data

(In thousands, except per share data)	For the Fiscal Years Ended January 31,				
	2019	2018	2017	2016	2015
Revenue	$136,657	$113,401	$98,448	$94,658	$88,347
Gross profit	53,999	44,002	39,489	38,158	36,977
Operating income	8,720	5,412	6,281	5,934	7,231
Income before taxes	7,308	5,157	6,605	6,909	6,932
Net income	$ 5,730	$ 3,286	$ 4,228	$ 4,525	$ 4,662
Net Income per Common Share—Basic	$ 0.83	$ 0.48	$ 0.57	$ 0.62	$ 0.61
Net income per Common Share—Diluted	$ 0.81	$ 0.47	$ 0.56	$ 0.61	$ 0.60
Dividends Declared per Common Share	$ 0.28	$ 0.28	$ 0.28	$ 0.28	$ 0.28

Balance Sheet Data

(In thousands)	As of January 31,				
	2019	2018	2017	2016	2015
Cash and Marketable Securities	$ 7,534	$ 11,688	$24,821	$20,419	$23,132
Current Assets	62,608	62,948	61,423	54,514	59,289
Total assets	118,983	122,313	83,665	77,963	74,330
Current liabilities	24,665	25,912	11,985	9,548	9,569
Debt, including short term portion	18,242	23,372	—	—	—
Shareholders’ equity	$ 69,775	$ 63,647	$70,537	$67,373	$63,511

Item 7. ***Management ’ s Discussion and Analysis of Financial Condition and Results of Operations***

Overview

AstroNova is a multi-national enterprise that leverages its proprietary data visualization technologies to design, develop, manufacture, distribute and service a broad range of products that acquire, store, analyze and present data in multiple formats. The Company organizes its structure around a core set of competencies, including research and development, manufacturing, service, marketing and distribution. It markets and sells its products and services through the following two segments:

- Product Identification (PI) – offers digital label printers, over-printers, labeling software, spare parts, service contracts and all related printing supplies such as pressure sensitive labels, tags, inks, toners and thermal transfer ribbons used in those product identification digital printers.
- Test and Measurement Product Group (T&M) – offers a suite of products and services that acquire data from local and networked data streams and sensors as well as wired and wireless networks. The recorded data is processed and analyzed and then stored and presented in various visual output formats. The T&M segment also includes a line of aerospace printers that are used to print hard copies of data required for the safe and efficient operation of aircraft including navigation maps, arrival and departure procedures, flight itineraries, weather maps, performance data, passenger data, and various air traffic control data. Aerospace products also include Ethernet switches which are used in military aircraft and military vehicles to connect multiple computers or Ethernet devices.

The Company markets and sells its products and services globally through a diverse distribution structure of direct sales personnel, manufacturers' representatives and authorized dealers that deliver a full complement of branded products and services to customers in our respective markets. Our growth strategy centers on organic growth through product innovation made possible by research and development initiatives, as well as strategic acquisitions that fit into or complement existing core businesses. In fiscal 2019, 2018, and 21017, revenue from customers in various geographic areas outside the United States, primarily in Western Europe, Canada and Asia, amounted to $53.0 million, $43.6 million and $28.6 million, respectively.

We maintain an active program of product research and development. During fiscal 2019, 2018 and 2017, we spent $7.8 million, $7.5 million and $6.3 million, respectively, on Company-sponsored product development. We are committed to continuous product development as essential to our organic growth and expect to continue our focus on research and development efforts in fiscal 2020 and beyond.

We also continue to invest in sales and marketing initiatives by expanding the existing sales force and using various marketing campaigns to achieve our goals of sales growth and increased profitability notwithstanding the challenging economic environment.

On September 28, 2017, AstroNova entered into an Asset Purchase and License Agreement with Honeywell International, Inc. pursuant to which it acquired the exclusive perpetual world-wide license to manufacture Honeywell's narrow format flight deck printers for the Boeing 737 and Airbus 320 aircraft. Revenue from the sales of these printers is reported as part of our Test & Measurement segment beginning in the third quarter of fiscal year 2018. Refer to Note 3, "Acquisitions," in the audited consolidated financial statements included elsewhere in this report.

On February 1, 2017, AstroNova completed its acquisition of TrojanLabel ApS (TrojanLabel), a European manufacturer of digital color label presses and specialty printing systems for the commercial label printing and packaging markets. TrojanLabel is reported as part of our Product Identification segment beginning with the first quarter of fiscal year 2018. Refer to Note 3, "Acquisitions," in the audited consolidated financial statements included elsewhere in this report.

Results of Operations

Fiscal 2019 compared to Fiscal 2018

The following table presents the revenue of each of the Company's segments, as well as the percentage of total revenue and change from prior year.

($ in thousands)	2019			2018	
	Revenue	As a % of Total Revenue	% Change Over Prior Year	Revenue	As a % of Total Revenue
Product Identification	$ 86,786	63.5%	6.2%	$ 81,681	72.0%
T&M	49,871	36.5%	57.2%	31,720	28.0%
Total	$136,657	100.0%	20.5%	$113,401	100.0%

Net revenue in fiscal 2019 was $136.7 million, a 20.5% increase compared to prior year revenue of $113.4 million. Revenue through domestic channels of $83.7 million was up 19.9% from $69.8 million in the prior year due to sales increases in both segments. International revenue of $53.0 million increased 21.5% over prior year international revenue of $43.6 million primarily due to the impact on revenue from the Honeywell product line and despite lower than expected revenue from European Product Identification sales. Current year international revenue includes a modest favorable foreign exchange rate impact of $0.5 million.

Hardware revenue in fiscal 2019 was $53.2 million, a $15.7 million, or 41.9%, increase compared to prior year revenue of $37.5 million. The largest contribution to this increase was in the T&M segment where the full year impact of the Honeywell acquisition (which was completed on September 28, 2017) caused T&M segment hardware revenue to increase 61.2%. The increase was also aided, to a much lesser degree, by growth in T&M's data acquisition product lines. Hardware revenue in the Product Identification segment increased 9.5% compared to prior year primarily due to increases in the TrojanLabel product lines.

Revenue from supplies in fiscal 2019 was $71.2 million, representing a $ 5.9 million, or 9.0%, increase compared to prior year revenue of $65.3 million. The dollar increase is primarily attributable to growth from Product Identification inkjet printer inks and labels, with the largest share of that increase related to the QuickLabel product line. Also contributing to the revenue increase was the impact in the T&M segment of significantly higher sales of the specialized paper used in aerospace printers due to the large inherited installed base of the acquired Honeywell product line.

Service and other revenue in fiscal 2019 was $12.3 million, a 16.0% increase compared to prior year revenue of $10.6 million. All of this increase related to the aerospace printer product lines as a result of the acquired Honeywell product line.

The Company achieved gross profit of $54.0 million for fiscal 2019, reflecting a 22.7% improvement compared to the prior year's gross profit of $44.0 million. The Company's gross profit margin of 39.5% in the current year reflects an increase from the prior year's gross profit margin of 38.8%. The higher gross profit for the current year compared to the prior year is primarily attributable to increased revenue; the current year's increase in gross margin is primarily due to an increase in the mix of higher gross margins in the acquired Honeywell product lines.

Operating expenses for the current year were $45.3 million, representing a 17.3% increase from the prior year's operating expenses of $38.6 million, a growth rate 3.2% lower than the growth rate of revenues. Specifically, selling and marketing expenses of $ 26.3 million in fiscal 2019 increased 18.5% from the prior year amount of $22.2 million. The increase in selling and marketing expenses for the current year primarily relates to full year amortization of customer related intangibles acquired in the Honeywell transaction, as well an increase in wages and benefits for fiscal 2019. Selling and marketing expenses represent 19.3% and 19.6% of net revenue for fiscal 2019 and 2018, respectively. Current year general and administrative ("G&A") expenses increased by 24.9% from prior year to $11.1 million, primarily as a result of an increase in wages, bonuses and share-based compensation expenses. The current year increase in G&A is also a result of the fact that fiscal 2018 G&A included $1.4 million of income attributable to the change in the fair value of the Company's contingent earn out liability related to the TrojanLabel acquisition. The current year increase in G&A is partly offset by lower professional service costs and the favorable impact of a $1.0 million of income recorded in the first quarter of fiscal 2019 as a result of a change in the accounting estimate for product costs and operating expenses pursuant to a transition service agreement we entered into with Honeywell. Research & development ("R&D") costs in fiscal 2019 of $7.8 million increased 4.8% from $7.5 million in fiscal 2018. While R&D spending increased, primarily due to increased benefit and incentive costs, the R&D spending level for fiscal 2019 represents 5.7% of net revenue, a decrease compared to the prior year level of 6.6%.

Other expense in fiscal 2019 was $1.4 million compared to other expense of $0.3 million in fiscal 2018. Current year other expense includes interest expense on debt of $0.9 million and foreign exchange loss of $0.7 million, offset by investment income of $0.1 million. Other income in fiscal 2018 included interest expense on debt of $0.4 million and a foreign exchange loss of $0.2 million, offset by investment income of $0.2 million.

Net income for fiscal 2019 was $5.7 million, or $0.81 per diluted share, an increase compared to $3.3 million, or $0.47 per diluted share in fiscal 2018. Current year results were impacted by $0.1 million, or $0.01 per diluted share, in taxes as a result of the finalization of the accounting for the 2017 Tax Act. The prior year included a $1.1 million increase in the tax provision consisting of $1.0 million related to revaluation of our deferred tax assets at the new lower corporate tax rate and $0.1 million related to the transition tax on the un-repatriated earnings of our foreign subsidiaries also included in the Tax Act. During fiscal 2019 the Company recognized a $1.6 million income tax expense and had an effective tax rate of 21.6% compared to income tax expense of $1.8 million, or a 36.2% effective tax rate in fiscal 2018.

Fiscal 2018 compared to Fiscal 2017

The following table presents the revenue of each of the Company's segments, as well as the percentage of total revenue and change from prior year.

($ in thousands)	2018			2017	
	Revenue	As a % of Total Revenue	% Change Over Prior Year	Revenue	As a % of Total Revenue
Product Identification	$ 81,681	72.0%	16.9%	$69,862	71.0%
T&M	31,720	28.0%	11.0%	28,586	29.0%
Total	$113,401	100.0%	15.2%	$98,448	100.0%

Net revenue in fiscal 2018 was $113.4 million, a 15.2% increase compared to the prior year revenue of $98.4 million. Revenue through domestic channels of $69.8 million was consistent with prior year domestic revenue of $69.8 million. International revenue of $43.6 million increased 52.4% over the prior year international revenue of $28.6 million primarily due to the impact on revenue from the Honeywell and TrojanLabel acquisitions. The international revenue for fiscal 2018 includes a favorable foreign exchange rate impact of $0.6 million.

Hardware revenue in fiscal 2018 was $37.5 million, a 10.9% increase compared to the prior year's revenue of $33.8 million. Hardware revenue in the Product Identification segment increased 23.5% in fiscal 2018 compared to the prior year due to the integration of TrojanLabel, but was tempered by lower OEM bar code printer sales. Hardware revenue in the T&M segment increased 4.6% in fiscal 2018 primarily due to the Honeywell acquisition and the introduction of the EV-5000 data recorder. These revenue increases were partially offset by lower sales from the Aerospace ToughWriter 4 product line.

Revenue from supplies in fiscal 2018 was $65.3 million, representing a 16.2% increase compared to the prior year revenue of $56.2 million. This increase is primarily attributable to double-digit growth from Product Identification inkjet printer inks and labels. Also contributing to the revenue increase in fiscal 2018 was the impact of Honeywell and TrojanLabel paper and ink sales.

Service and other revenue in fiscal 2018 was $10.6 million, a 26.2% increase compared to the prior year revenue of $8.4 million. Product Identification and Test & Measurement segments both generated double-digit growth in service and other revenue as a result of the TrojanLabel and Honeywell acquisitions.

The Company achieved gross profit of $44.0 million for fiscal 2018, reflecting an 11.4% improvement compared to the prior year's gross profit of $39.5 million. The Company's gross profit margin of 38.8% in fiscal 2018 reflects a decrease from the prior year's gross profit margin of 40.1%. The higher gross profit for fiscal 2018 compared to the prior year is primarily attributable to increased revenue; fiscal 2018's decrease in gross margin was due to product mix and higher manufacturing and period costs.

Operating expenses for fiscal 2018 were $38.6 million, representing a 16.2% increase from the prior year's operating expenses of $33.2 million. Specifically, selling and marketing expenses of $22.2 million in fiscal 2018 increased 17.3% from the prior year's amount of $19.0 million. The increase in selling and marketing expenses primarily relates to increases in wages and amortization related to the TrojanLabel and Honeywell acquisitions. Selling and marketing expenses represent 19.6% and 19.3% of net revenue for fiscal 2018 and 2017, respectively. Fiscal 2018 G&A expenses increased by 12.1% from the prior year to $8.9 million primarily as a result of an increase in share-based compensation expenses, as well as outside and professional service costs, including non-recurring costs related to expenses incurred pursuant to a transition service agreement we entered into with Honeywell. The increase in G&A was offset by income of $1.4 million due to the change in the fair value of the Company's contingent earn out liability related to the TrojanLabel acquisition. R&D costs in fiscal 2018 of $7.5 million increased 18.0% from $6.3 million in fiscal 2017, primarily due to the increase related to the absorption of the TrojanLabel R&D team, as well as an increase in wages. This increase was slightly tempered by a decrease in outside service costs and prototype expenses. The R&D spending level for fiscal 2018 represents 6.6% of net revenue, an increase compared to the prior year's level of 6.4%.

Other expense in fiscal 2018 was $0.3 million compared to other income of $0.3 million in fiscal 2017. Other expense for fiscal 2018 includes interest expense on debt of $0.4 million and foreign exchange loss of $0.2 million, offset by investment income of $0.2 and income related to a settlement of a trademark infringement litigation. Other income in fiscal 2017 includes a gain on sale of a property we owned in England of $0.4 million and $0.1 million related to an amount retained from the RITEC escrow partially offset by foreign exchange loss of $0.2 million.

Net income for fiscal 2018 was $3.3 million, or $0.47 per diluted share, a decrease from $4.2 million, or $0.56 per diluted share in fiscal 2017. The results for fiscal 2018 were impacted by income of $1.4 million ($1.1 million net of tax or $0.16 per diluted share) related to change in the fair value of the Company's contingent earn out liability and $1.1 million, or $0.16 per diluted share, in taxes as a result of the enactment of the Tax Act. The $1.1 million increase in tax provision includes $1.0 million related to revaluation of our deferred tax assets at the new lower corporate tax rate and $0.1 million related to the transition tax on the un-repatriated earnings of our foreign subsidiaries also included in the Tax Act. During fiscal 2017 the Company recognized a $2.4 million income tax expense and had an effective tax rate of 36.0%. Fiscal 2017 income tax expense included a $0.2 million tax expense related to non-deductible transaction costs for the TrojanLabel acquisition and a $0.2 million tax expense related to the increase for unrecognized tax benefits.

Segment Analysis

We report two segments consistent with our product revenue groups: Product Identification and Test & Measurement (T&M). Segment performance is evaluated based on the operating segment's profit before corporate and financial administration expenses.

The following table summarizes selected financial information by segment.

($ in thousands)	Revenue			Segment Operating Profit			Segment Operating Profit as a % of Revenue		
	2019	2018	2017	2019	2018	2017	2019	2018	2017
Product Identification	$ 86,786	$ 81,681	$69,862	$ 7,910	$10,561	$ 9,821	9.1%	12.9%	14.1%
T&M	49,871	31,720	28,586	11,933	3,754	4,399	23.9%	11.8%	15.4%
Total	$136,657	$113,401	$98,448	19,843	14,315	14,220	14.5%	12.6%	14.4%
Corporate Expenses				11,123	8,903	7,939			
Operating Income				8,720	5,412	6,281			
Other Income (Expense), Net				(1,412)	(255)	324			
Income Before Income Taxes				7,308	5,157	6,605			
Income Tax Provision				1,578	1,871	2,377			
Net Income				$ 5,730	$ 3,286	$ 4,228			

Product Identification

Revenue from the Product Identification segment increased 6.2% in fiscal 2019 with revenue of $86.8 million compared to revenue of $81.7 million in the prior year. Hardware product lines grew 9.5% and supplies product lines grew 6.0%. The increase in hardware revenue for the current year was primarily due to the contribution from the TrojanLabel line of presses. The supplies revenue increase in the current year was a result of growth in ink, print head, and label and tag supplies revenue across all product lines. Product Identification current year segment operating profit was $7.9 million, reflecting a profit margin of 9.1%, compared to prior year segment profit of $10.6 million and related profit margin of 12.9%. The decrease in Product Identification current year segment operating profit margin is due to significant investment in fiscal 2019 in new product development, sales and marketing capabilities, and product introduction costs.

Revenue from the Product Identification segment increased 16.9% in fiscal 2018 with revenue of $81.7 million compared to revenue of $69.9 million in the prior year. Both the hardware and supplies product lines saw strong growth in fiscal 2018, with increases of 23.5% and 15.2%, respectively, as compared to the prior year. The increase in hardware revenue for fiscal 2018 was primarily due to the contribution from the TrojanLabel line of presses. The supplies revenue increase in fiscal 2018 was a result of supplies revenue from the newly acquired TrojanLabel business and continued strong demand for digital color printer ink as well as label and tag products supplies. Fiscal 2018 Product Identification segment operating profit was $10.6 million, reflecting a profit margin of 12.9%, compared to the prior year segment profit of $9.8 million and related profit margin of 14.1%. The decrease in Product Identification segment operating profit margin in fiscal 2018 was due to unfavorable product mix and increased operating costs.

Test & Measurement

Revenue from the T&M product group was $49.9 million for fiscal 2019, a 57.2% increase compared to revenue of $31.7 million in the prior year. The Honeywell product line revenue began in September of 2017, and fiscal year 2019 was the first full year of revenue for this acquisition: it was the primary reason for the significant growth in both the hardware and supplies product lines. T&M's segment operating profit for the current fiscal year was $11.9 million, which resulted in a 23.9% profit margin compared to the prior year's segment operating profit of $3.8 million and related operating margin of 11.8%. Again, the higher margins were due to the acquisition, which was integrated into the existing facilities without adding significant ongoing facilities expense, and the generally favorable margins on the acquired products, despite the incremental costs incurred in supporting the integration, certain fees payable to Honeywell in connection with the transition of the product line, and the payment of licensing royalties.

Revenue from the T&M product group was $31.7 million for fiscal 2018, an 11.0% increase compared to revenue of $28.6 million in the prior year. Both the hardware and supplies product lines saw sustained growth in fiscal 2018, with the overall increase primarily attributable to the contribution of revenue from the entry into the arrangement with Honeywell in September 2017. T&M's segment operating profit for fiscal 2018 was $3.8 million which resulted in an 11.8% profit margin compared to the prior year's segment operating profit of $4.4 million and related operating margin of 15.4%. The lower segment operating profit and related margin in fiscal 2018 were due to product mix and higher operating costs.

Liquidity and Capital Resources

Overview

Generally, our primary source of liquidity is cash generated from operating activities. We may also utilize amounts available under our revolving credit facility, as described below, to supplement funding for our operating activities and to fund a portion of our capital expenditures, contractual contingent consideration obligations, and future acquisitions. We believe that our current level of cash and short-term financing capabilities along with future cash flows from operations will be sufficient to meet our operating and capital needs for at least the next 12 months.

During fiscal 2019, we converted our securities available for sale to cash. In the second quarter of fiscal 2019, we drew $3.0 million on our revolving credit facility, of which $1.5 million was repaid and $1.5 million remains outstanding as of January 31, 2019. Our cash and cash equivalents at January 31, 2019, were $7.5 million and we have $8.5 million remaining available for borrowing under our revolving credit facility.

Indebtedness

On February 28, 2017, the Company and the Company's wholly owned Danish subsidiary, ANI ApS (together, the "Parties") entered into a credit agreement with Bank of America, N.A., which provided for a secured credit facility consisting of a $9.2 million term loan to our wholly owned Danish subsidiary, "ANI ApS," and a $10.0 million revolving credit facility for the Company. On September 28, 2017, the Parties entered into the First Amendment to the Credit Agreement to permit the Honeywell Asset Purchase and License Agreement and temporarily increase the amount available for borrowing under the revolving credit line from $10.0 million to $15.0 million. The Company used $14.6 million of the revolving credit line to complete the Honeywell Asset Purchase and License Agreement.

On November 30, 2017, the Parties entered into the Second Amendment to the Credit Agreement which, in addition to the revolving credit facility and the term loan previously borrowed by ANI ApS under the original Credit Agreement, provided for a term loan to the Company in the principal amount of $15.0 million. Upon the closing of the Second Amendment, the Company used the proceeds from the $15.0 million term loan to repay the entire $14.6 million principal balance of the revolving loan outstanding under the revolving credit facility as of October 28, 2017, with the remaining proceeds retained by the Company to be used for general corporate purposes. The principal amount of the revolving credit facility under the Credit Agreement, which had been temporarily increased to $15.0 million pursuant to the First Amendment, was reduced to $10.0 million effective upon the closing of the Second Amendment, and the revolving credit facility termination and maturity date was extended from January 31, 2022 to November 22, 2022.

On April 17, 2018, the Parties entered into a Third Amendment to the Credit Agreement with the Lender. The Third Amendment provides that no "Immaterial Subsidiary" will be required to become a guarantor or securing party under (unless requested by the Lender during default) or have its equity pledged pursuant to the Credit Agreement. The Third Amendment defines "Immaterial Subsidiary" as any subsidiary of the Company with (a) consolidated total assets that do not exceed 5.0% of the consolidated total assets of the Company and its subsidiaries as a whole and (b) revenues that do not exceed 5.0% of the consolidated revenues of the Company and its subsidiaries as a whole, as of the last day of the most recent fiscal quarter. Immaterial Subsidiaries may not account for, in the aggregate, more than 10% the of consolidated total assets or consolidated revenues of the Company and its subsidiaries.

Revolving credit loans may be borrowed, at the Company's option, in U.S. Dollars or, subject to certain conditions, Euros, British Pounds, Canadian Dollars or Danish Krone. Amounts borrowed under the revolving credit facility bear interest at a rate *per annum* equal to, at the Company's option, either (a) the LIBOR rate (or in the case of revolving credit loans denominated in a currency other than U.S. Dollars, the applicable quoted rate), plus a margin that varies within a range of 1.0% to 1.5% based on the Company's consolidated leverage ratio, or (b) a fluctuating reference rate equal to the highest of (i) the federal funds' rate plus 0.50%, (ii) Bank of America's publicly announced prime rate or (iii) the LIBOR rate plus 1.00%, plus a margin that varies within a range of 0.0% to 0.5% based on the Company's consolidated leverage ratio. The Company is required to pay a commitment fee on the undrawn portion of the revolving credit facility at the rate of 0.25% *per annum* . Outstanding borrowings under the revolving credit line during fiscal 2019 bear interest at an annual rate of 5.6% and the Company has paid $61 thousand of interest expense for revolving credit line borrowings for the year ended January 31, 2019.

Both term loans bear interest at a rate per annum equal to the LIBOR rate plus a margin that varies within a range of 1.0% to 1.5% based on the Company's consolidated leverage ratio. In connection with our entry into the original Credit Agreement, ANI ApS entered into a hedging agreement to manage the variable interest rate risk and currency risk associated with its payments in respect to the term loan. Under this combined arrangement, payments of principal and interest with respect to approximately $8.9 million of the principal of the term loan will be made in Danish Krone, and interest on such principal amount will be payable at a fixed rate of 0.67% per annum for the entire term, subject only to potential changes based on the Company's consolidated leverage ratio. In connection with our entry into the Second Amendment of the Credit Agreement, effective November 30, 2017, the Company entered into a hedging agreement to manage the variable interest rate risk associated with its payments in respect to the $15.0 million term loan. Under this combined arrangement, interest will be payable at a fixed rate of 2.04% per annum for the entire term, plus an incremental margin of 1.0% to 1.5%, based on the Company's consolidated leverage ratio.

In connection with the Credit Agreement, AstroNova and ANI ApS entered into certain hedging arrangements with the Lender to manage the variable interest rate risk and currency risk associated with its payments in respect of the term loans.

The obligations of ANI ApS in respect of the $9.2 million term loan are guaranteed by the Company and TrojanLabel ApS. The Company's obligations in respect of the $15.0 million term loan, revolving credit facility and its guarantee in respect of the ANI ApS term loan are secured by substantially all of the assets of the Company (including a pledge of a portion of the equity interests held by the Company in ANI ApS and the Company's wholly-owned German subsidiary AstroNova GmbH), subject to certain exceptions.

The Lender is entitled to accelerate repayment of the loans and to terminate its revolving credit commitment under the Credit Agreement upon the occurrence of any of various customary events of default.

The Parties must comply with various customary financial and non-financial covenants under the Credit Agreement.

As of January 31, 2019, the Company believes it is in compliance with all of the covenants in the Credit Agreement.

Cash Flow

The statements of cash flows for the years ended January 31, 2019, 2018 and 2017 are included on page 47 of this Form 10-K. Net cash provided by operating activities was $3.4 million in fiscal 2019 compared to net cash provided by operating activities of $3.7 million in the previous year. The decrease in net cash provided by operations for the current year is primarily due to payments of prior years' accrued expenses to Honeywell under the TSA agreement and the increase in inventory to support the transition of the production of printers to the West Warwick facility in accordance with the Honeywell TSA. The combination of these factors on working capital, along with an increase in accounts receivable due to increased revenue for the current year resulted in a decrease in cash of $8.3 million for fiscal 2019, compared to a decrease of $5.0 million for the same period in fiscal 2018. The current year decrease in cash provided by operations was somewhat offset by increased net income and an increase in non-cash amortization related to the Honeywell acquisition. The accounts receivable balance was $23.5 million at the end of the current year compared to $22.4 million at the end of fiscal 2018, although the collection cycle decreased to 49 days compared to 55 days at year end. The inventory balance increased to $30.2 million at the end of fiscal 2019, compared to $27.6 million at fiscal 2018 year end with the inventory days on hand decreasing to 120 days at the end of the current year from 124 days at the prior year end.

Net cash provided by operating activities was $3.7 million in fiscal 2018 compared to net cash provided by operating activities of $7.0 million in fiscal 2017. The decrease in net cash from operations for fiscal 2018 was primarily due to the decrease in net income and the increase in working capital accounts, particularly inventory and accounts receivables. Excluding the impact of the TrojanLabel acquisition, inventory increased $6.8 million to $27.6 million in fiscal 2018 compared to $19.5 million in fiscal 2017, and accounts receivable increased $5.9 million to $22.4 million in fiscal 2018 from $15.7 million in fiscal 2017. The increase in inventory for fiscal 2018 was due to increased purchasing volume and decreased inventory turns, as inventory days on hand increased to 124 days at fiscal year end 2018 from 114 days at the prior year end. The increase in accounts receivable for fiscal 2018 was due to increased revenue and an increase in the accounts receivable collection cycle to 55 days at January 31, 2018 compared to 49 days at the prior year end.

Net cash provided by operating activities was $7.0 million in fiscal 2017 compared to net cash provided by operating activities of $7.7 million in fiscal 2016. The decrease in net cash from operations for fiscal 2017 is primarily due to increased net income and increased cash used for working capital. The combination of changes in accounts receivable, inventory, and accounts payable and accrued expenses decreased cash by $3.6 million in fiscal 2017, compared to a decrease of $0.5 million in fiscal 2016. The year-over-year decline was due to increased inventory and purchasing volume in fiscal 2017. The accounts receivable collection cycle decreased to 49 days of revenue at January 31, 2017 compared to 50 days of revenue at the prior year end. Inventory days on hand increased to 114 days at the end of the 2017 fiscal year from 92 days at the prior year end.

Net cash used by investing activities for fiscal 2019 was $1.5 million, which included $2.6 million for capital expenditures, consisting of $0.1 million for land and building improvements; $1.5 million for information technology; $0.7 million for machinery and equipment; $0.2 million for tools and dies; and $0.1 million for furniture, fixtures and other capital expenditures. Cash used for investments in fiscal 2019 was partially offset by $1.5 million of proceeds from sales and maturities of securities available for sale.

Net cash used by investing activities for fiscal 2018 was $20.8 million, which included $23.9 million of cash paid for the TrojanLabel acquisition and the Honeywell asset purchase and licenses agreement, partially offset by $5.5 million of proceeds from sales and maturities of securities available for sale. Cash used for investing activities for fiscal 2018 included capital expenditures of $2.2 million, consisting of $0.7 million for land and building improvements; $0.7 million for information technology; $0.5 million for machinery and equipment; $0.2 million for tools and dies; and $0.1 million for furniture, fixtures and other capital expenditures.

Net cash provided by investing activities for fiscal 2017 was $3.1 million, which included $4.0 million of proceeds from maturities of securities available for sale and proceeds of $0.5 million related to the sale of the UK property. Cash used for investing activities for fiscal 2017 included capital expenditures of $1.2 million, consisting of $0.4 million for land and building improvements; $0.3 million for information technology; $0.3 million for machinery and equipment; $0.1 million for tools and dies; and $0.1 million for furniture, fixtures and other capital expenditures.

Net cash used by financing activities for fiscal 2019 was $4.1 million, primarily as a result of principal payments of $4.8 million on long-term debt and $1.5 million on the Company's revolving credit facility. Cash used for financing was partially offset by borrowings of $3.0 million on the Company's revolving credit facility in fiscal 2019. The Company did not repurchase any shares of its common stock in fiscal 2019. At January 31, 2019, there is an ongoing authorization by the Company's Board of Directors for the purchase of 390,000 shares of the Company's common stock. Cash provided or used by financing activities also included cash used to pay dividends of $1.9 million in both fiscal 2019 and 2018 and $2.1 million in fiscal 2017.

Net cash provided by financing activities for fiscal 2018 was $9.1 million and includes $24.2 million of proceeds related to the issuance of debt under the Company's credit facility with Bank of America. Offsetting the cash provided by financing activities in fiscal 2018 was $11.2 million of cash used to repurchase 826,305 shares of the Company's common stock at a per share price of $13.60. The purchase of these shares was from a trust established by the former founder and chief executive officer of the Company and did not impact the shares authorized for future purchases as part of the Company's stock buyback program.

Contractual Obligations, Commitments and Contingencies

At January 31, 2019, the Company's contractual obligations with initial remaining terms in excess of one year were as follows:

(In thousands)	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Purchase Commitments (1)	$30,617	$30,146	$ 471	$ —	$ —
Debt	18,242	5,208	10,784	2,250	—
Interest on Debt (2)	1,517	585	709	223	—
Royalty Obligation (3)	11,791	1,779	3,651	3,152	3,209
Excess Royalty Obligation (4)	1,265	1,265	—	—	—
Operating Lease Obligations	2,616	574	907	567	568
	$64,783	$38,292	$16,522	$6,192	$ 3,777

(1) Purchase obligations include undiscounted amounts committed under legally enforceable contracts or purchase orders for goods and services with defined terms as to price, quantity and delivery dates.

(2) Interest rate on variable rate debt is provided at the effective fixed rate paid by the Company per the hedging arrangements plus the maximum additional margin payable based on the Company's consolidated leverage ratio of 1.5%.

(3) The Company is subject to a guaranteed minimum royalty payment obligation over the next ten years pursuant to the Honeywell Asset Purchase and License Agreement. Refer to Note 3, "Acquisitions," in the audited consolidated financial statements included elsewhere in this report for further details.

(4) The Company is subject to excess royalty payments beyond the guaranteed minimum royalty obligation pursuant to the Honeywell Asset Purchase & License Agreement. Refer to Note 3, "Acquisitions," in the audited consolidated financial statements included elsewhere in this report for further details.

The Company is also subject to contingencies, including legal proceedings and claims arising out of its businesses that cover a wide range of matters, such as: contract and employment claims; workers compensation claims; product liability claims; warranty claims; and claims related to modification, adjustment or replacement of component parts of units sold. While it is impossible to ascertain the ultimate legal and financial liability with respect to contingent liabilities, including lawsuits, we believe that the aggregate amount of such liabilities, if any, in excess of amounts provided or covered by insurance, will not have a material adverse affect on our consolidated financial position or results of operations. It is possible, however, that results of operations for any particular future period could be materially affected by changes in our assumptions or strategies related to these contingencies or changes out of the Company's control.

Critical Accounting Policies and Estimates

Our discussion and analysis of financial condition and results of operations are based upon the Company's consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. Certain of our accounting policies require the application of judgment in selecting the appropriate assumptions for calculating financial estimates. By their nature, these judgments are subject to an inherent degree of uncertainty. We periodically evaluate the judgments and estimates used for our critical accounting policies to ensure that such judgments and estimates are reasonable for our interim and year-end reporting requirements. These judgments and estimates are based on the Company's historical experience, current trends and information available from other sources, as appropriate. If different conditions result from those assumptions used in our judgments, the results could be materially different from our estimates. We believe the following critical accounting policies require significant judgments and estimates in the preparation of our consolidated financial statements:

Revenue Recognition :

Effective February 1, 2018, we adopted Accounting Standards Update (ASU) 2014-9, Revenue from Contracts with Customers and the related amendments (also referred to as Topic 606) using the modified retrospective method. Topic 606 was applied to all contracts within the scope of Topic 606 as of the February 1, 2018 adoption date. Under ASC Topic 606, based on the nature of our contracts and consistent with prior practice, we recognize the large majority of our revenue upon shipment, which is when the performance obligation has been satisfied. Accordingly, the adoption of this standard did not have a material impact on our revenue recognition and there was no cumulative effective adjustment as of February 1, 2018 as a result of the adoption of ASC Topic 606.

Our accounting policies relating to the recognition of revenue under Topic 606 require management to make estimates, determinations and judgments based on historical experience and on various other assumptions, which include (i) the existence of a contract with the customer, (ii) the identification of the performance obligations in the contract, (iii) the value of any variable consideration in the contract, (iv) the stand alone selling price of multiple obligations in the contract, for the purpose of allocating the consideration in the contract, and (v) determining when a performance obligation has been met. Recognition of revenue based on incorrect judgments, including the identification of performance obligation arrangements as well as the pattern of delivery for those services, could result in inappropriate recognition of revenue, or incorrect timing of revenue recognition, which could have a material affect on our financial condition and results of operations.

We recognize revenue for non-recurring engineering (NRE) fees, as necessary, for product modification orders upon completion of agreed-upon milestones. Revenue is deferred for any amounts received prior to completion of milestones. Certain of our NRE arrangements include formal customer acceptance provisions. In such cases, we determine whether we have obtained customer acceptance for the specific milestone before recognizing revenue.

Infrequently, the Company receives requests from customers to hold product being purchased from us for the customers' convenience. We recognize revenue for such bill and hold arrangements in accordance with the guidance provided by Topic 606, which requires the transaction to meet the following criteria in order to determine that the customer has obtained control: (a) the reason for the bill and hold is substantive, (b) the product has separately been identified as belonging to the customer, (c) the product is currently ready for physical transfer to the customer, and (d) the Company does not have the ability to use the product or direct it to another customer.

Warranty Claims and Bad Debts: Provisions for the estimated costs for future product warranty claims and bad debts are recorded in cost of revenue and general and administrative expense, respectively. The amounts recorded are generally based upon historically derived percentages while also factoring in any new business conditions that might impact the historical analysis such as new product introduction for warranty and bankruptcies of particular customers for bad debts. We also periodically evaluate the adequacy of reserves for warranty and bad debts recorded in our consolidated balance sheet as a further test to ensure the adequacy of the recorded provisions. Warranty and bad debt analysis often involves subjective analysis of a particular customer's ability to pay. As a result, significant judgment is required in determining the appropriate amounts to record, and such judgments may prove to be incorrect in the future. We believe that our procedures for estimating such amounts are reasonable and historically have not resulted in material adjustments in subsequent periods when the estimates are adjusted to the actual amounts.

Inventories: Inventories are stated at the lower of cost (first-in, first-out) or net realizable value. The process for evaluating and recording obsolete and excess inventory provisions consists of analyzing the inventory supply on hand and estimating the net realizable value of the inventory based on historical experience, current business conditions and anticipated future revenue. We believe that our procedures for estimating such amounts are reasonable and historically have not resulted in material adjustments in subsequent periods when the estimates are adjusted to actual experience.

Income Taxes: A valuation allowance is established when it is “more-likely-than-not” that all or a portion of deferred tax assets will not be realized. A review of all available positive and negative evidence must be considered, including our performance, the market environment in which we operate, length of carryforward periods, existing revenue backlog and future revenue projections. If actual factors and conditions differ materially from the estimates made by management, the actual realization of the net deferred tax assets or liabilities could vary materially from the amounts previously recorded. At January 31, 2019, the Company has provided valuation allowances for future state tax benefits resulting from certain R&D tax credits which could expire unused.

The calculation of tax liabilities involves significant judgment in estimating the impact of uncertainties in the application of complex tax laws and regulations in a multitude of jurisdictions. Although guidance on the accounting for uncertain income taxes prescribes the use of a recognition and measurement model, the determination of whether an uncertain tax position has met those thresholds will continue to require significant judgment by management. If the ultimate resolution of tax uncertainties is different from what we have estimated, our income tax expense could be materially impacted.

On December 22, 2017, the 2017 Tax Cuts and Jobs Act (“Tax Act”) was enacted into law and the new legislation contains several key tax provisions that affected us, including a one-time mandatory transition tax on accumulated foreign earnings and a reduction of the corporate income tax rate to 21% effective January 1, 2018, among others. We are required to recognize the effect of the tax law changes in the period of enactment, such as determining the transition tax, remeasuring our U.S. deferred tax assets and liabilities as well as reassessing the net realizability of our deferred tax assets and liabilities. In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act (“SAB 118”), which allows us to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. All accounting under SAB 118 was finalized during the quarter ending January 31, 2019 with no material changes from the provisional amounts previously recorded. Refer to Note 15 “Income Taxes” in the audited consolidated financial statements included elsewhere in this report for further details.

Intangible and Long-Lived Assets: Long-lived assets, such as definite-lived intangible assets and property, plant and equipment, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Determination of recoverability is based on an estimate of undiscounted future cash flows resulting from the use of the asset and its eventual disposition. If the projected undiscounted cash flows are less than the carrying value, then an impairment charge would be recorded for the excess of the carrying value over the fair value, which is determined by the discounting of future cash flows.

Goodwill: Goodwill is tested for impairment at the reporting unit. A reporting unit is an operating segment or a business unit one level below an operating segment if discrete financial information for that business is prepared and regularly reviewed by segment management. However, components within an operating segment are aggregated as a single reporting unit if they have similar economic characteristics. Management evaluates the recoverability of goodwill annually or more frequently if events or changes in circumstances, such as declines in revenue, earnings or cash flows, or material adverse changes in the business climate, indicate that the carrying value of an asset might be impaired. Goodwill is first qualitatively assessed to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. Factors that management considers in this assessment include macroeconomic conditions, industry and market considerations, overall financial performance (both current and projected), changes in management and strategy and changes in the composition or carrying amount of net assets. If this qualitative assessment indicates that it is more likely than not that the fair value of a reporting unit is less than its carrying value, then a quantitative assessment is required for the reporting unit. The quantitative assessment compares the fair value of the reporting unit with its carrying value. We estimate the fair value of our reporting units using the income approach based upon a discounted cash flow model. We believe that this approach is appropriate because it provides a fair value estimate based upon the reporting unit’s expected long-term operating cash flow performance. In addition, we use the market approach, which compares the reporting unit to publicly-traded companies and transactions involving similar business, to support the conclusions based upon the income approach. The income approach requires the use of many assumptions and estimates including future revenue, expenses, capital expenditures, and working capital, as well as discount factors and income tax rates. If the fair value of the reporting unit exceeds the carrying value of the net assets including goodwill assigned to that unit, goodwill is not impaired. If the carrying value of the reporting unit's net assets including goodwill exceeds the fair value of the reporting unit, then we record an impairment charge based on that difference.

Share-Based Compensation: Share-based compensation expense is measured based on the estimated fair value of the share-based award when granted and is recognized as an expense over the requisite service period (generally the vesting period of the equity grant). We have estimated the fair value of each option on the date of grant using the Black-Scholes option-pricing model. Our estimate of share-based compensation requires a number of complex and subjective assumptions including our stock price volatility, employee exercise patterns (expected life of the options), the risk-free interest rate and the Company's dividend yield. The stock price volatility assumption is based on the historical weekly price data of our common stock over a period equivalent to the weighted-average expected life of our options. Management evaluated whether there were factors during that period which were unusual and would distort the volatility figure if used to estimate future volatility and concluded that there were no such factors. In determining the expected life of the option grants, the Company has observed the actual terms of prior grants with similar characteristics and the actual vesting schedule of the grants and assessed the expected risk tolerance of different option groups. The risk-free interest rate used in the model is based on the actual U.S. Treasury zero coupon rates for bonds matching the expected term of the option as of the option grant date. The dividend assumption is based upon the prior year's average dividend yield. No compensation expense is recognized for options that are forfeited for which the employee does not render the requisite service. Our accounting for share-based compensation for restricted stock awards (RSA) and restricted stock units (RSU) is also based on the fair value method. The fair value of the RSUs and RSAs is based on the closing market price of the Company's common stock on the date of grant. Reductions in compensation expense associated with forfeited awards are estimated at the date of grant, and this estimated forfeiture rate is adjusted periodically based on actual forfeiture experience.

Recent Accounting Pronouncements

Reference is made to Note 1 of our audited consolidated financial statements included elsewhere in this report.

Item 7A. ***Quantitative and Qualitative Disclosures about Market Risk***

We have exposure to financial market risks, including changes in foreign currency exchange rates and interest rates.

Financial Exchange Risk

The functional currencies of our foreign subsidiaries and branches are the local currencies – the British Pound in the UK, the Canadian Dollar in Canada, the Danish Krone in Denmark, the Chinese Yuan in China, and the Euro in France and Germany. We are exposed to foreign currency exchange risk as the functional currency financial statements of foreign subsidiaries are translated to U.S. dollars. The assets and liabilities of our foreign subsidiaries having a functional currency other than the U.S. dollar are translated into U.S. dollars at the exchange rate prevailing at the balance sheet date, and at an average exchange rate for the reporting period for revenue and expense accounts. The cumulative foreign currency translation adjustment is recorded as a component of accumulated other comprehensive loss in shareholders' equity. The reported results of our foreign subsidiaries will be influenced by their translation into U.S. dollars by currency movements against the U.S. dollar. Our primary currency translation exposure is related to our subsidiaries that have functional currencies denominated in Euro. A hypothetical 10% change in the rates used to translate the results of our foreign subsidiaries would result in an increase or decrease in our consolidated net income of less than $0.1 million for the year ended January 31, 2019.

Transactional exposure arises where transactions occur in currencies other than the functional currency. Transactions in foreign currencies are recorded at the exchange rate prevailing at the date of the transaction. The resulting monetary assets and liabilities are translated into the appropriate functional currency at exchange rates prevailing at the balance sheet date and the resulting gains and losses are reported as foreign exchange gain (loss) in the consolidated statements of income. Realized and unrealized foreign exchange losses resulting from transactional exposure were $0.7 million for the year ended January 31, 2019.

Interest Rate Risk

The Company has exposure to interest rate risk from its variable rate long-term debt. We entered into interest rate swaps to hedge the interest rate exposure related to our variable rate debt. Generally, the fair market value of fixed interest rate debt will increase as interest rates fall and decrease as interest rates rise. Giving effect to our interest rate swaps, if interest rates were to decrease by 50 basis points, the fair value of the Company’s debt would increase by approximately $0.2 million. If interest rates were to increase by 50 basis points, the fair value of the Company’s debt would decrease by approximately $0.2 million.

Item 8. ***Financial Statements and Supplementary Data***

The consolidated financial statements required under this item are submitted as a separate section of this report on the pages indicated at Item 15(a)(1).

Item 9. ***Changes in and Disagreements with Accountants on Accounting and Financial Disclosure***

None.

Item 9A. ***Controls and Procedures***

Evaluation of Disclosure Controls and Procedures

Our management has evaluated, under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Annual Report on Form 10-K pursuant to Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (Exchange Act). Based on that evaluation, our Chief Executive Officer and our Chief Financial Officer have concluded that our disclosure controls and procedures were effective at January 31, 2019 to ensure that the information required to be disclosed in our Exchange Act reports is (1) recorded, processed, summarized and reported in a timely manner and (2) accumulated and communicated to our management, including our Chief Executive Officer and our Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act). The Company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of its financial reporting and the preparation of published financial statements in accordance with generally accepted accounting principles.

Because of the inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to risk that controls may become inadequate because of changes in conditions, or the degree of compliance may deteriorate.

Management conducted its evaluation of the effectiveness of its internal control over financial reporting as of January 31, 2019. In making this assessment, management used the criteria set forth in the Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this assessment, the principal executive officer and principal financial officer believe that as of January 31, 2019, the Company's internal control over financial reporting was effective based on criteria set forth by COSO in "Internal Control-Integrated Framework."

The attestation report of the Company's registered public accounting firm regarding internal control over financial reporting appears in Part IV, Item 15 of this Form 10-K and is incorporated herein by reference.

Changes in Internal Controls over Financial Reporting

There have been no changes in the Company's internal control over financial reporting during our most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. ***Other Information***

None.

PART III

Item 10. ***Directors, Executive Officers and Corporate Governance***

The information required by this item is incorporated herein by reference to the Company's definitive proxy statement for the 2019 Annual Meeting of Shareholders.

The following sets forth certain information with respect to all executive officers of the Company. All officers serve at the pleasure of the Board of Directors.

Name	Age	Position
Gregory A. Woods	60	President, Chief Executive Officer and Director
David S. Smith	62	Vice President, Chief Financial Officer and Treasurer
Michael M. Morawetz	59	Vice President—EMEA
Stephen M. Petrarca	56	Vice President—Operations
Michael J. Natalizia	55	Vice President and Chief Technology Officer

Mr. Woods has served as Chief Executive Officer of the Company since February 1, 2014. Mr. Woods joined the Company in September 2012 as Executive Vice President and Chief Operating Officer and was appointed President and Chief Operating Officer on August 29, 2013. Prior to joining the Company, Mr. Woods served from January 2010 to August 2012 as Managing Director of Medfield Advisors, LLC, an advisory firm located in Medfield, Massachusetts focused on providing corporate development and strategy guidance to technology driven manufacturing firms. From 2008 to 2010, Mr. Woods served as President of Performance Motion Devices, a specialty semiconductor and electronics manufacturer located in Lincoln, Massachusetts.

Mr. Smith was appointed Vice President, Chief Financial Officer and Treasurer of the Company effective January 22, 2018. Prior to joining the Company, Mr. Smith served as Managing Partner of S.C. Advisors LLC, a financial management consultancy firm from 2008 through January 2018. Mr. Smith has also held a variety of senior finance positions at semiconductor and manufacturing companies, including Senior Vice President and Chief Financial Officer of Standard Microsystems Corporation, a global semiconductor company, from 2005 to 2008 and Vice President, Finance and Chief Financial Officer of both Dover Corporation, a diversified global manufacturing company, from 2000 to 2002 and Crane Company, a diversified manufacturing company from 1994 to 2000.

Mr. Morawetz was appointed Vice President—EMEA in 2006. He was previously the General Manager of Branch Operations for the Company's German subsidiary, having joined the Company in 1989.

Mr. Petrarca was appointed Vice President—Operations in 1998. He has previously held positions as General Manager of Manufacturing, Manager of Grass Operations and Manager of Grass Sales. He has been with the Company since 1980.

Mr. Natalizia was appointed Vice President and Chief Technology Officer of the Company on March 9, 2012. Prior to this appointment, Mr. Natalizia held the position of Director of Product Development of the Company since 2005.

Code of Ethics

The Company has adopted a Code of Conduct which applies to all directors, officers and employees of the Company, including the Chief Executive Officer ("CEO"), Chief Financial Officer ("CFO") and principal accounting officer which meets the requirements of a "code of ethics" as defined in Item 406 of Regulation S-K. A copy of the Code of Conduct will be provided to shareholders, without charge, upon request directed to Investor Relations or can be obtained on the Company's website, *(www.astronovainc.com)* , under the heading "Investors—Corporate Governance—Governance Documents." The Company intends to disclose any amendment to, or waiver of, a provision of the Code of Conduct for the CEO, CFO, principal accounting officer, or persons performing similar functions by posting such information on its website.

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Item 11. ***Executive Compensation***

The information required by this item is incorporated herein by reference to the Company's definitive Proxy Statement for the 2019 Annual Meeting of Shareholders.

The information set forth under the heading "Compensation Committee Report" in the Company's definitive Proxy Statement is furnished and shall not be deemed filed for purposes of Section 18 of the Exchange Act, nor be incorporated by reference in any filing under the Securities Act of 1933, as amended.

Item 12. ***Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters***

The information required by this item is incorporated herein by reference to the Company's definitive Proxy Statement for the 2019 Annual Meeting of Shareholders.

Equity Compensation Plan Information

The following table sets forth information about the Company's equity compensation plans as of January 31, 2019:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans
Equity Compensation Plans Approved by Shareholders	901,664(1)	$ 14.30(2)	290,593(3)
Equity Compensation Plans Not Approved by Shareholders	—	—	—
Total	901,664(1)	$ 14.30(2)	290,593(3)

(1) Includes 417,695 shares issuable upon exercise of outstanding options granted under the Company's 2007 Equity Incentive Plan; 202,450 shares issuable upon exercise of outstanding options granted and 50,585 restricted stock units outstanding under the Company's 2015 Equity Incentive Plan; and 151,000 shares issuable upon exercise of outstanding options granted and 79,934 restricted stock units outstanding under the Company's 2018 Equity Incentive Plan

(2) Does not include restricted stock units.

(3) Represents 256,740 shares available for grant under the AstroNova, Inc. 2018 Equity Incentive Plan and 33,853 shares available for purchase under the Employee Stock Purchase Plan. This balance does not include 3,148 shares issued pursuant to outstanding unvested restricted stock awards which are subject to forfeiture.

Additional information regarding these equity compensation plans is contained in Note 14, "Share-Based Compensation," in the Company's Consolidated Financial Statements included in Item 15 hereto.

Item 13. ***Certain Relationships, Related Transactions and Director Independence***

The information required by this item is incorporated herein by reference to the Company's definitive Proxy Statement for the 2019 Annual Meeting of Shareholders.

Item 14. ***Principal Accountant Fees and Services***

The information required by this item is incorporated herein by reference to the Company's definitive Proxy Statement for the 2019 Annual Meeting of Shareholders.

PART IV

Item 15. Exhibits and Financial Statement Schedule

(a)(1) Financial Statements:

The following documents are included as part of this Annual Report filed on Form 10-K:

(a)(2) Financial Statement Schedule:

All other schedules for which provision is made in the applicable accounting regulations of the Securities and Exchange Commission are not required under the related instructions or are inapplicable, and therefore, have been omitted.

Item 16. Form 10-K Summary

Not Applicable.

(a)(3) Exhibits:

Exhibit Number	
(2.1)	Share Purchase Agreement, dated January 7, 2017, as amended, by and among ANI ApS, Trojan Holding ApS, as a Seller and as the Sellers' Representative, and Li Wei Chong filed as Exhibit 2.1 to the Company's Annual Report on Form 10-K for the year ended January 31, 2017 and incorporated by reference herein*
(3A)	Restated Articles of Incorporation of the Company and all amendments thereto filed as Exhibit 3A to the Company's Quarterly Report on Form 10-Q for the quarter ended April 30, 2016 and incorporated by reference herein.
(3B)	By-laws of the Company as amended to date filed as Exhibit 3B to the Company's Annual Report on Form 10-K for the fiscal year ended January 31, 2008 (File No. 000-13200) and incorporated by reference herein.
(4)	Specimen form of common stock certificate of the Company filed as Exhibit 4 to the Company's Quarterly Report on Form 10-Q for the quarter ended April 30, 2016 and incorporated by reference herein.
(10.1)	AstroNova, Inc. 2007 Equity Incentive Plan as filed as Appendix A to the Definitive Proxy Statement filed on April 25, 2007 on Schedule 14A (File No. 000-13200) for the 2007 annual shareholders meeting and incorporated by reference herein.**
(10.2)	AstroNova, Inc. Management Bonus Plan (Group III) filed as Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q for the period ended May 3, 2014 incorporated by reference herein.**

Exhibit Number	
(10.3)	Form of Performance-Based Restricted Stock Unit Award Agreement filed as Exhibit 10.9 to the Company's Quarterly Report on Form 10-Q for the period ended April 28, 2012 and incorporated by reference herein.**
(10.4)	Equity Incentive Award Agreement dated as of November 24, 2014 by and between the Company and Gregory A. Woods filed as Exhibit 10.12 to the Company's Annual Report on Form 10-K for the year ended January 31, 2015 and incorporated by reference herein.**
(10.5)	Change in Control Agreement dated as of November 24, 2014 by and between the Company and Gregory A. Woods filed as Exhibit 10.13 to the Company's Annual Report on Form 10-K for the year ended January 31, 2015 and incorporated by reference herein.**
(10.6)	AstroNova Inc. 2015 Equity Incentive Plan filed as Exhibit A to the Definitive Proxy Statement filed on April 21, 2015 (File No. 000-13200) for the 2015 annual shareholders meeting and incorporated by reference herein.**
(10.7)	Senior Executive Short Term Incentive Plan adopted March 27, 2015 filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the period ended May 2, 2015 and incorporated by reference herein.**
(10.8)	General Manager Employment Contract dated November 18, 2014 by and among AstroNova, Inc. and Michael Morawetz filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the period ended May 2, 2015 and incorporated by reference herein.**
(10.9)	Form of Indemnification Agreement for directors and officers filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the period ended October 31, 2015 and incorporated by reference herein.**
(10.10)	Credit Agreement dated February 28, 2017 among AstroNova, Inc., as the U.S. Borrower, ANI APS, as the Danish Borrower, Certain Subsidiaries of the U.S. Borrower, as the Guarantors and Bank of America, N.A. filed as Exhibit 10.16 to the Company's Annual Report on Form 10-K for the fiscal year ended January 31, 2017 and incorporated by reference herein.
(10.11)	Security and Pledge Agreement dated February 28, 2017 among AstroNova, Inc. as the U.S. Borrower and such other parties that become Grantors hereunder after the date hereof and Bank of America, N.A. filed as Exhibit 10.18 to the Company's Annual Report on Form 10-K for the fiscal year ended January 31, 2017 and incorporated by reference herein.
(10.12)	AstroNova, Inc. Amended and Restated Non-Employee Director Annual Compensation Program filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the period ended July 30, 2016 and incorporated by reference herein.**
(10.13)	Form of Restricted Stock Agreement granted under the Amended and Restated Non-Employee Director Annual Compensation Program filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the period ended July 30, 2016 and incorporated by reference herein.**
(10.14)	Form of Incentive Stock Option Agreement granted under the 2015 Equity Incentive Plan filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the period ended July 30, 2016 and incorporated by reference herein.**
(10.15)	Form of Non-Statutory Stock Option Agreement granted under the 2015 Equity Incentive Plan filed as Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the period ended July 30, 2016 and incorporated by reference herein.**
(10.16)	Form of Non-Employee Director Non-Statutory Stock Option Agreement granted under the 2015 Equity Incentive Plan filed as Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q for the period ended July 30, 2016 and incorporated by reference herein.**

Exhibit Number	
(10.17)	Form of Restricted Stock Agreement granted under the 2015 Equity Incentive Plan filed as Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q for the period ended July 30, 2016 and incorporated by reference herein.**
(10.18)	Form of Non-Employee Director Restricted Stock Agreement granted under the 2015 Equity Incentive Plan filed as Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q for the period ended July 30, 2016 and incorporated by reference herein.**
(10.19)	Form of Time-Based Restricted Stock Unit Agreement granted under the 2015 Equity Incentive Plan filed as Exhibit 10.8 to the Company's Quarterly Report on Form 10-Q for the period ended July 30, 2016 and incorporated by reference herein.**
(10.20)	Form of Performance Restricted Stock Unit Agreement granted under the 2015 Equity Incentive Plan filed as Exhibit 10.9 to the Company's Quarterly Report on Form 10-Q for the period ended July 30, 2016 and incorporated by reference herein.**
(10.21)	Stock Purchase Agreement, dated as of May 1, 2017, by and among AstroNova, Inc. and the trust established by Albert W. Ondis by Declaration of Trust dated December 4, 2003, as amended filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, event date May 1, 2017, filed with the SEC on May 5, 2017 and incorporated by reference herein.
(10.22)	Consent under Credit Agreement, dated as of May 1, 2017, by and among AstroNova, Inc., ANI ApS, Trojanlabel ApS, and Bank of America, N.A. filed as Exhibit 10.2 to the Company's Current Report on Form 8-K, event date May 1, 2017, filed with the SEC on May 5, 2017 and incorporated by reference herein.
(10.23)	AstroNova, Inc. Amended and Restated Non-Employee Director Annual Compensation Program, as amended filed as Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q for the period ended April 29, 2017 and incorporated by reference herein.**
(10.24)	Stock Purchase Agreement, dated as of May 1, 2017, by and among AstroNova, Inc. and the trust established by Albert W. Ondis by Declaration of Trust dated December 4, 2003, as amended filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, event date May 1, 2017, filed with the SEC on May 5, 2017 and incorporated by reference herein.
(10.25)	Consent under Credit Agreement, dated as of May 1, 2017, by and among AstroNova, Inc., ANI ApS, Trojanlabel ApS, and Bank of America, N.A. filed as Exhibit 10.2 to the Company's Current Report on Form 8-K, event date May 1, 2017, filed with the SEC on May 5, 2017 and incorporated by reference herein.
(10.26)	Asset Purchase and License Agreement, dated September 28, 2017, by and between AstroNova, Inc. and Honeywell International, Inc. filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, event date September 28, 2017, filed with the SEC on October 4, 2017 and incorporated by reference herein.
(10.27)	First Amendment to the Credit Agreement, dated September 28, 2017, by and among AstroNova, Inc., ANI ApS, Trojan Label ApS and Bank of America, N.A. filed as Exhibit 10.2 to the Company's Current Report on Form 8-K, event dated September 28, 2017, filed with the SEC on October 4, 2017 and incorporated by reference herein.
(10.28)	Second Amendment to the Credit Agreement, dated November 30, 2017, by and among AstroNova, Inc., ANI ApS, Trojan Label ApS and Bank of America, N.A. filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, event dated November 30, 2017, filed with the SEC on December 6, 2017 and incorporated by reference herein.

Exhibit Number	
(10.29)	Amended and Restated AstroNova, Inc. Employee Stock Purchase Plan filed as Exhibit 10.1 to the Company's Current Report on Form 8-K/A, event date November 20, 2017, filed with the SEC on December 28, 2017 and incorporated by reference herein.
(10.30)	Letter Agreement dated January 12, 2018 between the Company and David Smith filed as Exhibit 10.30 to the Company's Annual Report on Form 10-K for the fiscal year ended January 31, 2018 and incorporated by reference herein.**
(10.31)	Third Amendment to the Credit Agreement, dated April 17, 2018, by and among AstroNova, Inc., ANI ApS, Trojan Label ApS and Bank of America, N.A. filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the period ended April 28, 2018 and incorporated by reference herein.
(10.32)	AstroNova, Inc. 2018 Equity Incentive Plan filed as Appendix A to the Registrant's definitive proxy statement on Schedule 14A filed with the SEC on May 4, 2018 and incorporated by reference herein.**
(10.33)	Form of Performance-based Restricted Stock Unit Award Agreement filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, event date June 4, 2018, filed with the SEC on June 4, 2018 and incorporated by reference herein.**
(10.34)	Form of Restricted Stock Unit Agreement (time-based vesting) filed as Exhibit 10.2 to the Company's Current Report on Form 8-K, event date June 4, 2018, filed with the SEC on June 4, 2018 and incorporated by reference herein.**
(10.35)	Form of Incentive Stock Option filed as Exhibit 10.3 to the Company's Current Report on Form 8-K, event date June 4, 2018, filed with the SEC on June 4, 2018 and incorporated by reference herein.**
(10.36)	Form of Non-statutory Stock Option filed as Exhibit 10.4 to the Company's Current Report on Form 8-K, event date June 4, 2018, filed with the SEC on June 4, 2018 and incorporated by reference herein.**
(10.37)	Form of Non-statutory Stock Option (Non-employee Director) filed as Exhibit 10.5 to the Company's Current Report on Form 8-K, event date June 4, 2018, filed with the SEC on June 4, 2018 and incorporated by reference herein.**
(10.38)	Form of Restricted Stock Agreement filed as Exhibit 10.6 to the Company's Current Report on Form 8-K, event date June 4, 2018, filed with the SEC on June 4, 2018 and incorporated by reference herein.**
(10.39)	Form of Non-employee Director Restricted Stock Agreement filed as Exhibit 10.7 to the Company's Current Report on Form 8-K filed, event date June 4, 2018, filed with the SEC on June 4, 2018 and incorporated by reference herein.**
(10.40)	AstroNova, Inc. Amended and Restated Non-Employee Director Annual Compensation Program filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed, event date January 31, 2019, filed with the SEC on February 4, 2019 and incorporated by reference herein.**
(10.41)	AstroNova, Inc. 2018 Equity Incentive Plan Non-Employee Director Restricted Stock Agreement.**
(21)	List of Subsidiaries of the Company.
(23.1)	Consent of Wolf & Company, P.C.
(31.1)	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
(31.2)	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.

Exhibit Number	
(32.1)	Certification of 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 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)	The following materials from Registrant’s Annual Report on Form 10-K for the year ended January 31, 2019, formatted in XBRL (eXtensible Business Reporting Language): (i) the Consolidated Balance Sheets, (ii) the Consolidated Statements of Income, (iii) the Consolidated Statements of Comprehensive Income, (iv) the Consolidated Statements of Changes in Shareholders’ Equity, (v) the Consolidated Statements of Cash Flows, and (vi) the Notes to Consolidated Financial Statements. Filed electronically herein.

* Schedules to this Exhibit have been omitted in reliance on Item 601(b)(2) of Regulation S-K. The Company will furnish copies of any such schedules to the SEC upon request.

** Management contract or compensatory plan or arrangement.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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.

ASTRONOVA, INC.
(Registrant)

Date: April 10, 2019

By: /s/ Gregory A. Woods
(Gregory A. Woods, Chief Executive Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the date indicated.

Name	Title	Date
/s/ Gregory A. Woods **Gregory A. Woods**	President, Chief Executive Officer and Director (Principal Executive Officer)	April 10, 2019
/s/ David S. Smith **David S. Smith**	Vice President, Chief Financial Officer and Treasurer (Principal Accounting and Financial Officer)	April 10, 2019
/s/ Jean A. Bua **Jean A. Bua**	Director	April 10, 2019
/s/ Mitchell I. Quain **Mitchell I. Quain**	Director	April 10, 2019
/s/ Yvonne E. Schlaeppi **Yvonne E. Schlaeppi**	Director	April 10, 2019
/s/ Harold Schofield **Harold Schofield**	Director	April 10, 2019
/s/ Richard S. Warzala **Richard S. Warzala**	Director	April 10, 2019

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders of
AstroNova, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of AstroNova, Inc. (the “Company”) as of January 31, 2019 and 2018, and the related consolidated statements of income, comprehensive income, changes in shareholders’ equity and cash flows for each of the years in the three-year period ended January 31, 2019, and the related notes and the financial statement schedule listed in Item 15(a)(2)(collectively, the financial statements). We also have audited AstroNova, Inc.’s internal control over financial reporting as of January 31, 2019, based on criteria established in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of January 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended January 31, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of January 31, 2019, based on criteria established in Internal Control—Integrated Framework (2013) issued by the COSO.

Basis for Opinion

The Company’s management is responsible for these financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management’s Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company’s financial statements and an opinion on the Company’s internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the financial statements included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control Over Financial Reporting

A company’s internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Wolf & Company, P.C.
We have served as the Company's auditor since 2013.

Boston, Massachusetts
April 10, 2019

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ASTRONOVA, INC.
CONSOLIDATED BALANCE SHEETS
As of January 31
(In Thousands, Except Share Data)

	2019	2018
ASSETS		
CURRENT ASSETS		
Cash and Cash Equivalents	$ 7,534	$ 10,177
Securities Available for Sale	—	1,511
Accounts Receivable, net of reserves of $521 in 2019 and $377 in 2018	23,486	22,400
Inventories	30,161	27,609
Prepaid Expenses and Other Current Assets	1,427	1,251
Total Current Assets	62,608	62,948
Property, Plant and Equipment, net	10,380	9,752
Identifiable Intangibles, net	29,674	33,633
Goodwill	12,329	13,004
Deferred Tax Assets, net	2,928	1,829
Other	1,064	1,147
TOTAL ASSETS	$ 118,983	$ 122,313
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES		
Accounts Payable	$ 5,956	$ 11,808
Accrued Compensation	5,023	2,901
Other Accrued Expenses	2,911	2,414
Current Portion of Long-Term Debt	5,208	5,498
Current Liability —Royalty Obligation	1,875	1,625
Revolving Credit Facility	1,500	—
Current Liability —Excess Royalty Payment Due	1,265	615
Income Taxes Payable	554	684
Deferred Revenue	373	367
Total Current Liabilities	24,665	25,912
NON CURRENT LIABILITIES		
Long-Term Debt, net of current portion	12,870	17,648
Royalty Obligation, net of current portion	9,916	11,760
Deferred Tax Liabilities	40	698
Other Long Term Liabilities	1,717	2,648
TOTAL LIABILITIES	49,208	58,666
Commitments and Contingencies (See Note 20)		
SHAREHOLDERS' EQUITY		
Preferred Stock, $10 Par Value, Authorized 100,000 shares, None Issued	—	—
Common Stock, $0.05 Par Value, Authorized 13,000,000 shares; Issued 10,218,559 shares in 2019 and 9,996,120 shares in 2018	511	500
Additional Paid-in Capital	53,568	50,016
Retained Earnings	49,511	45,700
Treasury Stock, at Cost, 3,261,672 shares in 2019 and 3,227,942 shares in 2018	(32,997)	(32,397)
Accumulated Other Comprehensive Loss, Net of Tax	(818)	(172)
TOTAL SHAREHOLDERS' EQUITY	69,775	63,647
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$ 118,983	$ 122,313

See Notes to the Consolidated Financial Statements.

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ASTRONOVA, INC.

CONSOLIDATED STATEMENTS OF INCOME

For the years ended January 31

(In Thousands, Except Per Share Data)

	2019	2018	2017
Revenue	$136,657	$113,401	$98,448
Cost of Revenue	82,658	69,399	58,959
Gross Profit	53,999	44,002	39,489
Costs and Expenses:			
Selling and Marketing	26,343	22,234	18,955
Research and Development	7,813	7,453	6,314
General and Administrative	11,123	8,903	7,939
Operating Expenses	45,279	38,590	33,208
Operating Income	8,720	5,412	6,281
Other Income (Expense):			
Interest Expense	(876)	(402)	—
Investment Income	145	168	78
Other, Net	(681)	(21)	246
	(1,412)	(255)	324
Income before Income Taxes	7,308	5,157	6,605
Income Tax Provision	1,578	1,871	2,377
Net Income	$ 5,730	$ 3,286	$ 4,228
Net Income Per Common Share—Basic	$ 0.83	$ 0.48	$ 0.57
Net Income Per Common Share—Diluted	$ 0.81	$ 0.47	$ 0.56
Weighted Average Number of Common Shares Outstanding—Basic	6,881	6,911	7,421
Dilutive Effect of Common Stock Equivalents	203	104	151
Weighted Average Number of Common Shares Outstanding—Diluted	7,084	7,015	7,572

See Notes to the Consolidated Financial Statements.

ASTRONOVA, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

For the years ended January 31

(In Thousands)

	2019	2018	2017
Net Income	$5,730	$ 3,286	$4,228
Other Comprehensive Income (Loss), net of taxes and reclassification adjustments:			
Foreign Currency Translation Adjustments	(671)	867	(65)
Change in Value of Derivatives Designated as Cash Flow Hedge	622	(1,036)	—
(Gains) Losses from Cash Flow Hedges Reclassified to Income Statement	(600)	1,048	—
Unrealized Gain (Loss) on Securities Available for Sale	—	5	(16)
Realized Gain on Securities Available for Sale Reclassified to Income Statement	3	—	—
Other Comprehensive Income (Loss)	(646)	884	(81)
Comprehensive Income	$5,084	$ 4,170	$4,147

See Notes to the Consolidated Financial Statements.

ASTRONOVA, INC.

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

($ In Thousands)

	Common Stock		Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income (Loss)	Total Shareholders' Equity
	Shares	Amount					
Balance January 31, 2016	9,666,290	$ 483	$ 45,675	$42,212	$(20,022)	$ (975)	$ 67,373
Share-based compensation	—	—	1,019	—	—	—	1,019
Employee option exercises	93,483	5	834	—	(451)	—	388
Restricted stock awards vested, net	75,133	4	(4)	—	(308)	—	(308)
Common Stock – cash dividend—$0.28 per share	—	—	—	(2,082)	—	—	(2,082)
Net income	—	—	—	4,228	—	—	4,228
Other comprehensive loss	—	—	—	—	—	(81)	(81)
Balance January 31, 2017	9,834,906	$ 492	$ 47,524	$44,358	$(20,781)	$ (1,056)	$ 70,537
Share-based compensation	—	—	1,583	—	—	—	1,583
Employee option exercises	90,042	4	913	—	(275)	—	642
Restricted stock awards vested, net	71,172	4	(4)	—	(103)	—	(103)
Repurchase of Common Stock	—	—	—	—	(11,238)	—	(11,238)
Common Stock – cash dividend—$0.28 per share	—	—	—	(1,944)	—	—	(1,944)
Net income	—	—	—	3,286	—	—	3,286
Other comprehensive loss	—	—	—	—	—	884	884
Balance January 31, 2018	9,996,120	$ 500	$ 50,016	$45,700	$(32,397)	$ (172)	$ 63,647
Share-based compensation	—	—	1,886	—	—	—	1,886
Employee option exercises	150,125	7	1,669	—	(366)	—	1,310
Restricted stock awards vested, net	72,314	4	(3)	—	(234)	—	(233)
Reclassification due to adoption of ASU 2018-02	—	—	—	14	—	—	14
Common Stock – cash dividend—$0.28 per share	—	—	—	(1,933)	—	—	(1,933)
Net income	—	—	—	5,730	—	—	5,730
Other comprehensive income	—	—	—	—	—	(646)	(646)
Balance January 31, 2019	10,218,559	$ 511	$ 53,568	$49,511	$(32,997)	$ (818)	$ 69,775

See Notes to the Consolidated Financial Statements.

ASTRONOVA, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

For the years ended January 31

(In Thousands)

	2019	2018	2017
Cash Flows from Operating Activities:			
Net Income	$ 5,730	$ 3,286	$ 4,228
Adjustments to Reconcile Net Income to Net Cash Provided By Operating Activities:			
Depreciation and Amortization	6,152	3,994	2,431
Amortization of Debt Issuance Costs	51	34	—
Share-Based Compensation	1,886	1,583	1,019
Deferred Income Tax Provision (Benefit)	(1,638)	744	174
Gain on Sale of UK Property	—	—	(419)
Changes in Assets and Liabilities, Net of Impact of Acquisitions:			
Accounts Receivable	(1,493)	(4,722)	(416)
Inventories	(2,872)	(5,509)	(4,659)
Accounts Payable and Accrued Expenses	(3,967)	5,207	1,426
Income Taxes Payable	(151)	(801)	2,187
Other	(318)	(92)	982
Net Cash Provided by Operating Activities	3,380	3,724	6,953
Cash Flows from Investing Activities:			
Proceeds from Sales/Maturities of Securities Available for Sale	1,511	5,539	4,029
Purchases of Securities Available for Sale	—	(321)	(400)
Proceeds from Sale of UK Property	—	—	474
Cash Paid for TrojanLabel Acquisition, Net of Cash Acquired	—	(9,007)	—
Cash Paid for Honeywell Asset Purchase and License Agreement	(400)	(14,873)	—
Payments Received on Line of Credit and Note Receivable	—	85	256
Additions to Property, Plant and Equipment	(2,645)	(2,204)	(1,238)
Net Cash Provided (Used) by Investing Activities	(1,534)	(20,781)	3,121
Cash Flows from Financing Activities:			
Net Proceeds from Common Shares Issued Under Employee Benefit Plans and Employee Stock Option Plans, Net of Payment of Minimum Tax Withholdings	1,077	539	79
Purchase of Treasury Stock	—	(11,238)	—
Proceeds from Issuance of Long-Term Debt	—	24,200	—
Borrowings under Revolving Credit Facility	3,000	—	—
Repayments under Revolving Credit Facility	(1,500)	—	—
Change in TrojanLabel Earn Out Liability	—	(1,438)	—
Principal Payments on Long-Term Debt	(4,762)	(828)	—
Payments of Debt Issuance Costs	—	(234)	—
Dividends Paid	(1,933)	(1,944)	(2,082)
Net Cash (Used) Provided by Financing Activities	(4,118)	9,057	(2,003)
Effect of Foreign Exchange Rate Changes on Cash and Cash Equivalents	(371)	79	(16)
Net (Decrease) Increase in Cash and Cash Equivalents	(2,643)	(7,921)	8,055
Cash and Cash Equivalents, Beginning of Year	10,177	18,098	10,043
Cash and Cash Equivalents, End of Year	$ 7,534	$ 10,177	$18,098
Supplemental Information:			
Cash Paid (Received) During the Period for:			
Interest	$ 636	$ 246	$ —
Income Taxes, Net of Refunds	$ 3,472	$ 1,940	$ (84)
Schedule of non-cash financing activities:			
Value of Shares Received in Satisfaction of Option Exercise Price	$ 366	$ 275	$ 451

See Notes to the Consolidated Financial Statements.

ASTRONOVA, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
January 31, 2019, 2018 and 2017

Note 1—Summary of Significant Accounting Policies

Basis of Presentation: The accompanying financial data have been prepared by us pursuant to the rules and regulations of the U.S. Securities and Exchange Commission ("SEC") and are presented in conformity with U.S. generally accepted accounting principles ("U.S. GAAP"). Our fiscal year end is January 31. Unless otherwise stated, all years and dates refer to our fiscal year.

Principles of Consolidation: The consolidated financial statements include the accounts of AstroNova, Inc. and its subsidiaries. All material intercompany accounts and transactions are eliminated in consolidation.

Reclassification: Certain amounts in prior year's financial statements have been reclassified to conform to the current year's presentation.

Use of Estimates: The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect these financial statements and accompanying notes. Some of the more significant estimates relate to the allowances for doubtful accounts, inventory valuation, valuation and estimated lives of intangible assets, impairment of long-lived assets, goodwill, income taxes, share-based compensation and warranty reserves. Management's estimates are based on the facts and circumstances available at the time estimates are made, past historical experience, risk of loss, general economic conditions and trends, and management's assessments of the probable future outcome of these matters. Consequently, actual results could differ from those estimates.

Cash and Cash Equivalents: Highly liquid investments with an original maturity of 90 days or less are considered to be cash equivalents. Similar investments with original maturities beyond three months are classified as securities available for sale. At both January 31, 2019 and 2018, cash of $3.9 million was held in foreign bank accounts.

Securities Available for Sale: Securities available for sale are carried at fair value based on quoted market prices, where available. The difference between cost and fair value, net of related tax effects, is recorded as a component of accumulated other comprehensive income (loss) in shareholders' equity.

Inventories: Inventories are stated at the lower of cost (first-in, first-out) or net realizable value and include material, labor and manufacturing overhead.

Property, Plant and Equipment: Property, plant and equipment are stated at cost less accumulated depreciation. Depreciation is provided on the straight-line basis over the estimated useful lives of the assets (land improvements—10 to 20 years; buildings and leasehold improvements—10 to 45 years; machinery and equipment—3 to 10 years and computer equipment and software—3 to 10 years).

Revenue Recognition: On February 1, 2018 we adopted Accounting Standards Update ("ASU") 2014-09, "Revenue from Contracts with Customers ("Topic 606")," which superseded nearly all existing revenue recognition guidance under U.S. GAAP. The core principle of Topic 606 is to recognize revenue when promised goods or services are transferred to customers in an amount that reflects the consideration that is expected to be received for those goods or services. Topic 606 defines a five step process to recognize revenue and requires more judgment and estimates within the revenue recognition process than required under previous U.S. GAAP, which includes identifying contracts with customers, identifying performance obligations in the contract, determining and estimating the amount of any variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation and recognizing revenue when the entity satisfies each performance obligation.

We adopted this standard using the modified retrospective method and have applied the guidance to all contracts within the scope of Topic 606 as of the February 1, 2018 adoption date. Under Topic 606, based on the nature of our contracts and consistent with prior practice, we recognize the large majority of our revenue upon shipment, which is when the performance obligation has been satisfied. Accordingly, the adoption of this standard did not have a material impact on our revenue recognition and there was no cumulative effective adjustment as of February 1, 2018 as a result of the adoption of Topic 606.

The vast majority of our revenue is generated from the sale of distinct products. Revenue is measured as the amount of consideration we expect to receive in exchange for such products, which is generally at the contractually stated prices, and is recognized when we satisfy a performance obligation by transferring control of a product to a customer. The transfer of control generally occurs at one point in time, upon shipment, when title and risk of loss pass to the customer. Returns and customer credits are infrequent and are recorded as a reduction to revenue. Sales taxes and value added taxes collected concurrently with revenue generating activities are excluded from revenue.

Many of the contracts entered into with customers are commonly comprised of a combination of equipment, supplies, installation and/or training services. We determine performance obligations by assessing whether the products or services are distinct from other elements of the contract. In order to be distinct, the product must perform either on its own or with readily available resources and must be separate within the context of the contract.

The majority of our hardware products contain embedded operating systems and data management software which is included in the purchase price of the equipment. The software is deemed incidental to the systems as a whole, as it is not sold or marketed separately and its production costs are minor compared to those of the hardware system. Hardware and software elements are typically delivered at the same time and are accounted for as a single performance obligation for which revenue is recognized at the point in time when ownership is transferred to the customer.

Installation and training services vary based on certain factors such as the complexity of the equipment, staffing availability in a geographic location and customer preferences, and can range from a few days to a few months. The delivery of installation and training services are not assessed to determine whether they are separate performance obligations, as the amounts are not material to the contract.

Shipping and handling activities that occur after control over a product has transferred to a customer are accounted for as fulfillment activities rather than performance obligations, as allowed under a practical expedient provided by Topic 606. The shipping and handling fees charged to customers are recognized as revenue and the related costs are included in cost of revenue at the point in time when ownership of the product is transferred to the customer.

We may perform service at the request of the customer, generally for the repair and maintenance of products previously sold. These services are short in duration, typically less than one month, and total less than 9% of revenue for the year ended January 31, 2019. Revenue is recognized as services are rendered and accepted by the customer. We also provide service agreements on certain of our Product Identification equipment. Service agreements are purchased separately from the equipment and provide for the right to obtain service and maintenance on the equipment for a period of typically one to two years. Accordingly, revenue on these agreements is recognized over the term of the agreements. The portion of service agreement contracts that are uncompleted at the end of any reporting period are included in deferred revenue.

We generally provide warranties for our products. The standard warranty period is typically 12 months for most hardware products except for airborne printers, which typically have warranties that extend for 4-5 years, consistent with industry practice. Such assurance-type warranties are not deemed to be separate performance obligations from the hardware product and costs associated with providing the warranties are accrued in accordance with ASC 450, “Contingencies,” as we have the ability to ascertain the likelihood of the liability and can reasonably estimate the amount of the liability. Our estimate of costs to service the warranty obligations is based on historical experience and expectations of future conditions. To the extent that our experience in warranty claims or costs associated with servicing those claims differ from the original estimates, revisions to the estimated warranty liability are recorded at that time, with an offsetting adjustment to cost of revenue. On occasion, customers request a warranty period longer than our standard warranty. In those instances, in which extended warranty services are separately quoted to the customer, an additional performance obligation is created, and the associated revenue is deferred and recognized as service revenue ratably over the term of the extended warranty period. The portion of service contracts and extended warranty services agreements that are uncompleted at the end of any reporting period are included in deferred revenue.

We recognize an asset for the incremental direct costs of obtaining a contract with a customer if we expect the benefit of those costs to be longer than one year. There has been no change in the Company's accounting for these contracts as a result of the adoption of Topic 606. We apply the practical expedient to expense costs incurred for costs to obtain a contract when the amortization period would have been less than a year. These costs include sales commissions paid to the internal direct sales team as well as to third-party representatives and distributors. Contractual agreements with each of these parties outline commission structures and rates to be paid. Generally speaking, the contracts are all individual procurement decisions by the customers and do not include renewal provisions and as such the majority of the contracts have an economic life of significantly less than a year.

Accounts Receivables and Allowance for Doubtful Accounts: Standard payment terms are typically 30 days after shipment, but vary by type and geographic location of our customer. Credit is extended based upon an evaluation of the customer's financial condition. In circumstances where we are aware of a customer's inability to meet its financial obligations, an allowance is established. The remainder of the allowance established is based on a variety of factors, including the age of amounts outstanding relative to their contractual due date, historical write-off experience and current market assessments. Accounts receivable are stated at their estimated net realizable value.

Research and Development Costs: We charge costs to expense in the period incurred, and these expenses are presented in the consolidated statement of income. The following costs are included in research and development expense: salaries and benefits, external engineering service costs, engineering related information costs and supplies.

Foreign Currency Translation: The financial statements of foreign subsidiaries and branches are measured using the local currency as the functional currency. Foreign currency-denominated assets and liabilities are translated into U.S. dollars at year-end exchange rates with the translation adjustment recorded as a component of accumulated comprehensive income (loss) in shareholders' equity. Revenues and expenses are translated at the average monthly exchange rates in effect during the related period. We do not provide for U.S. income taxes on foreign currency translation adjustments associated with our subsidiaries in Germany, Denmark and China since their undistributed earnings are considered to be permanently invested. Our net transactional foreign exchange losses included in the consolidated statements of income were \$0.7 million in fiscal 2019 and \$0.2 million for both fiscal 2018 and 2017.

Advertising: The Company expenses advertising costs as incurred. Advertising costs including advertising production, trade shows and other activities are designed to enhance demand for our products and amounted to approximately \$1.9 million; \$1.8 million and \$1.6 million in fiscal 2019, 2018 and 2017, respectively.

Long-Lived Assets: Long-lived assets to be held and used are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Determination of recoverability is based on an estimate of undiscounted future cash flows resulting from the use of the asset and its eventual disposition. If the projected undiscounted cash flows are less than the carrying value, then an impairment charge would be recorded for the excess of the carrying value over the fair value, as determined by the discounting of future cash flows. For 2019, 2018 and 2017, there were no impairment charges for long-lived assets.

Intangible Assets: Intangible assets include the value of customer and distributor relationships, existing technology and non-competition agreements acquired in connection with business and asset acquisitions and are stated at cost (fair value at acquisition) less accumulated amortization. These intangible assets have a definite life and are amortized over the assets' useful lives using a systematic and rational basis which is representative of the assets' use. Intangible assets with a definite life are tested for impairment whenever events or circumstances indicate that the carrying amount of an asset (asset group) may not be recoverable. If necessary, an impairment loss is recognized when the carrying amount of an asset exceeds the estimated undiscounted cash flows used in determining the fair value of the asset. The amount of the impairment loss recorded is calculated by the excess of the asset's carrying value over its fair value. Fair value is generally determined using a discounted cash flow analysis. For 2019, 2018 and 2017, there were no impairment charges for intangible assets.

Goodwill: Management evaluates the recoverability of goodwill annually or more frequently if events or changes in circumstances, such as declines in revenue, earnings or cash flows, or material adverse changes in the business climate indicate that the carrying value of an asset might be impaired. Goodwill is tested for impairment at the reporting unit level. A reporting unit is an operating segment, or a business unit one level below an operating segment if discrete financial information for that business is prepared and regularly reviewed by segment management. However, components within an operating segment are aggregated as a single reporting unit if they have similar economic characteristics. We determined that each of our operating segments (Product Identification and T&M) represents a reporting unit for purposes of goodwill impairment testing.

The accounting guidance related to goodwill impairment testing allows for the performance of an optional qualitative assessment of whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. Factors that management considers in this qualitative assessment include macroeconomic conditions, industry and market considerations, overall financial performance (both current and projected), changes in management and strategy and changes in the composition or carrying amount of net assets. If this qualitative assessment indicates that it is more likely than not that the fair value of a reporting unit is less than its carrying value, then a quantitative assessment is required for the reporting unit. The quantitative assessment compares the fair value of the reporting unit with its carrying value. We estimate the fair value of our reporting units using the income approach based upon a discounted cash flow model. We believe that this approach is appropriate because it provides a fair value estimate based upon the reporting unit's expected long-term operating cash flow performance. In addition, the Company uses the market approach, which compares the reporting unit to publicly-traded companies and transactions involving similar business, to support the conclusions based upon the income approach. The income approach requires the use of many assumptions and estimates including future revenue, expenses, capital expenditures, and working capital, as well as discount factors and income tax rates. If the fair value of the reporting unit exceeds the carrying value of the net assets including goodwill assigned to that unit, goodwill is not impaired. If the carrying value of the reporting unit's net assets including goodwill exceeds the fair value of the reporting unit, then we record an impairment charge based on that difference.

We performed a qualitative assessment for our fiscal 2019 analysis of goodwill. Based on this assessment, management does not believe that it is more likely than not that the carrying values of the reporting units exceed their fair values. Accordingly, no quantitative assessment was performed, as management believes that there are no impairment issues in regards to goodwill at this time.

Income Taxes: We use the liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on the differences between the financial reporting basis and tax basis of the assets and liabilities and are measured using statutory tax rates that will be in effect when the differences are expected to reverse. The Company's deferred taxes are presented as non-current in the accompanying consolidated balance sheet. An allowance against deferred tax assets is recognized when it is more-likely-than-not that some portion or all of the deferred tax assets will not be realized. At January 31, 2019 and 2018, a valuation allowance was provided for deferred tax assets attributable to certain state R&D credit carryforwards.

AstroNova accounts for uncertain tax positions in accordance with the guidance provided in ASC 740, "Accounting for Income Taxes." This guidance describes a recognition threshold and measurement attribute for the financial statement disclosure of tax positions taken or expected to be taken in a tax return and requires recognition of tax benefits that satisfy a more-likely-than-not threshold. ASC 740 also provides guidance on de-recognition, classification, interest and penalties, accounting in interim periods and disclosure.

On December 22, 2017, the 2017 Tax Cuts and Jobs Act ("Tax Act") was enacted into law and the new legislation contains several key tax provisions that affected us, including a one-time mandatory transition tax on accumulated foreign earnings and a reduction of the corporate income tax rate to 21% effective January 1, 2018, among others. We are required to recognize the effect of the tax law changes in the period of enactment, such as determining the transition tax, remeasuring our U.S. deferred tax assets and liabilities as well as reassessing the net realizability of our deferred tax assets and liabilities. In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act ("SAB 118"), which allows us to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. All accounting under SAB 118 was finalized during the quarter ending January 31, 2019 with no material changes from the provisional amounts previously recorded. Refer to Note 15 "Income Taxes" in the audited consolidated financial statements included elsewhere in this report for further details.

Net Income Per Common Share: Basic net income per share is based on the weighted average number of shares outstanding during the period. Diluted net income per share is based on the basic weighted average number of shares and potential common equivalent shares for stock options, restricted stock awards and restricted stock units outstanding during the period using the treasury stock method. In fiscal years 2019, 2018 and 2017, there were 326,275, 675,600 and 459,700, respectively, of common equivalent shares that were not included in the computation of diluted net income per common share because their inclusion would be anti-dilutive.

Fair Value Measurement: We measure our financial assets at fair value on a recurring basis in accordance with the guidance provided in ASC 820, "Fair Value Measurement and Disclosures," which defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. In addition, ASC 820 establishes a three-tiered hierarchy for inputs used in management's determination of fair value of financial instruments that emphasizes the use of observable inputs over the use of unobservable inputs by requiring that observable inputs be used when available. Observable inputs are inputs that reflect management's belief about the assumptions market participants would use in pricing a financial instrument based on the best information available in the circumstances.

The fair value hierarchy is summarized as follows:

- Level 1—Quoted prices in active markets for identical assets or liabilities;
- Level 2—Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and
- Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities

Cash and cash equivalents, accounts receivable, accounts payable, accrued compensation, other accrued expenses and income tax payable are reflected in the consolidated balance sheet at carrying value, which approximates fair value due to the short term nature of these instruments.

Share-Based Compensation: Share-based compensation expense is measured based on the estimated fair value of the share-based award when granted and is recognized as an expense over the requisite service period (generally the vesting period of the equity grant). We have estimated the fair value of each option on the date of grant using the Black-Scholes option-pricing model. Our estimate of share-based compensation requires a number of complex and subjective assumptions including our stock price volatility, employee exercise patterns (expected life of the options), the risk-free interest rate and the Company's dividend yield. The stock price volatility assumption is based on the historical weekly price data of our common stock over a period equivalent to the weighted average expected life of our options. Management evaluated whether there were factors during that period which were unusual and would distort the volatility figure if used to estimate future volatility and concluded that there were no such factors. In determining the expected life of the option grants, the Company has observed the actual terms of prior grants with similar characteristics and the actual vesting schedule of the grant and has assessed the expected risk tolerance of different option groups. The risk-free interest rate is based on the actual U.S. Treasury zero coupon rates for bonds matching the expected term of the option as of the option grant date. The dividend assumption is based upon the prior year's average dividend yield. No compensation expense is recognized for options that are forfeited for which the employee does not render the requisite service. Our accounting for share-based compensation for restricted stock awards (RSA) and restricted stock units (RSU) is also based on the fair value method. The fair value of the RSUs and RSAs is based on the closing market price of the Company's common stock on the grant date. Reductions in compensation expense associated with forfeited awards are estimated at the date of grant, and this estimated forfeiture rate is adjusted periodically based on actual forfeiture experience.

Cash flow from tax deductions in excess of the compensation cost recognized for those options (excess tax benefits) is classified with other income tax cash flows as an operating activity.

Share-based compensation becomes deductible for determining income taxes when the related award vests, is exercised, or is forfeited depending on the type of share-based award and subject to relevant tax law.

Derivative Financial Instruments: The Company uses derivative instruments as part of its overall strategy to manage its exposure to market risks primarily associated with fluctuations in foreign currency exchange rates and interest rates. Derivative instruments are recognized as either assets or liabilities in the balance sheet at fair value. The accounting for changes in the fair value (i.e., gains or losses) of a derivative instrument depends on whether it has been designated and qualifies as part of a hedging relationship and, further, on the type of hedging relationship. For derivative instruments not designated as hedging instruments, the gain or loss is recognized in the statement of income during the current period. For those derivative instruments that are designated and qualify as hedging instruments, a company must designate the hedging instrument, based upon the exposure being hedged, as a fair value hedge, cash flow hedge, or a hedge of a net investment in a foreign operation.

For derivative instruments that are designated and qualify as a cash flow hedge, the effective portion of the gain or loss on the derivative instrument is reported as a component of other comprehensive income (OCI) and reclassified into earnings in the same line item associated with the forecasted transaction, and in the same period or periods during which the hedged transaction affects earnings (e.g., in "Interest Expense" when the hedged transactions are interest cash flows associated with floating-rate debt, or "Other, Net" for portions reclassified relating to the remeasurement of the debt). The remaining gain or loss on the derivative instrument in excess of the cumulative change in the present value of future cash flows of the hedged item, if any (i.e., the ineffectiveness portion), or hedge components excluded from the assessment of effectiveness, are recognized in the statement of income during the current period.

Recent Accounting Pronouncements

Recently Adopted:

Share-Based Compensation

In June 2018, the Financial Accounting Standards Board ("FASB") issued ASU 2018-07 "Compensation—Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting." ASU 2018-07 reduces the cost and complexity and improves financial reporting by expanding the scope of Topic 718 to include share-based payment transactions to nonemployees. ASU 2018-07 is effective for public companies for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years with early adoption permitted. The Company adopted the provisions of this guidance effective beginning in the second quarter of fiscal 2019. The adoption of this guidance did not have a material impact on the Company's consolidated financial statements.

Income Taxes

In March 2018, the FASB issued ASU 2018-05—"Income Taxes (Topic 740): Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118." ASU 2018-05 provides guidance for companies related to the U.S. government-enacted comprehensive tax legislation commonly referred to as the Tax Act. ASU 2018-05 allows for a measurement period of up to one year after the enactment date of the Tax Act to finalize the recording of the related tax impacts. This ASU is effective immediately as new information is available to adjust provisional amounts that were previously recorded. The Company adopted this standard in the first quarter of fiscal 2019 and has properly reflected the income tax effects of all aspects of the legislation for which the accounting under ASC 740 was impacted. All conclusions under SAB 118 were finalized during the fourth quarter of 2019 with no material changes to the provisional amounts. Refer to Note 15, “Income Taxes” for further details.

Comprehensive Income

In February 2018, the FASB issued ASU 2018-02, “Income Statement-Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.” ASU 2018-02 amends ASU Topic 220 and allows a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Act, to eliminate the stranded tax effects resulting from the Tax Act. This ASU is effective for fiscal years beginning after December 15, 2018 with early adoption permitted. The amendments in this update should be applied either in the period of adoption or retrospectively to each period (or periods) in which the effect of the change in the U.S. federal corporate income tax rate in the Tax Cuts and Jobs Act is recognized. The Company early adopted this amendment in the second quarter of fiscal 2019 and reclassified $14,000 from accumulated other comprehensive income to retained earnings.

Revenue Recognition

In May 2014, the FASB issued ASU 2014-09, “Revenue from Contracts with Customers (Topic 606).” ASU 2014-09 completes the joint effort by the FASB and International Accounting Standards Board to improve financial reporting by creating common revenue recognition guidance for U.S. GAAP and International Financial Reporting Standards. ASU 2014-09 applies to all companies that enter into contracts with customers to transfer goods or services. Under this guidance, revenue is recognized when a customer obtains control of promised goods or services in an amount that reflects the consideration the entity expects to receive in exchange for those goods or services. In addition, the standard requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. The Company adopted this guidance effective February 1, 2018 using the modified retrospective method. The adoption of this guidance did not have a material impact on the Company’s consolidated financial statements. Refer to the significant accounting policy discussion for “Revenue Recognition” included above for further details.

Derivatives and Hedging

In August 2017, the FASB issued ASU 2017-12, “Derivatives and Hedging: Targeted Improvements to Accounting for Hedging Activities.” The objective of this new guidance is to improve the financial reporting of hedging relationships by, among other things, eliminating the requirement to separately measure and record hedge ineffectiveness. ASU 2017-12 is effective for public companies for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years with early adoption permitted. We adopted the provisions of this guidance effective for the first quarter of fiscal 2019. The adoption of this guidance did not have a material impact on the Company’s consolidated financial statements.

Share-Based Compensation

In May 2017, the FASB issued ASU 2017-09 “Stock Compensation: Scope of Modification Accounting.” ASU 2017-09 provides guidance on the types of changes to the terms or conditions of share-based payment awards to which an entity would be required to apply modification accounting under ASC 718. The Company adopted this guidance effective February 1, 2018. The adoption of this guidance did not have a material impact on its consolidated financial statements.

Statement of Cash Flows

In August 2016, the FASB issued ASU 2016-15, “Classification of Certain Cash Receipts and Cash Payments (Topic 230).” ASU 2016-15 addresses eight specific cash flow issues with the objective of reducing the existing diversity in practice for certain cash receipts and cash payments. The Company adopted this guidance affective February 1, 2018. The adoption of this guidance did not have a material impact on the Company’s consolidated financial statements.

Recent Accounting Standards Not Yet Adopted

Internal-Use Software

In August 2018, the FASB issued ASU 2018-15, “Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract.” ASU 2018-15 reduces complexity for the accounting for costs of implementing a cloud computing service arrangement and aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal use software license). This ASU is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019 (Q1 fiscal 2021 for AstroNova), with early adoption permitted. Implementation should be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. The Company is currently evaluating the impact this new guidance will have on its consolidated financial statements.

Fair Value Measurement

In August 2018, the FASB issued ASU 2018-13, “Fair Value Measurement (Topic 820), Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement.” ASU 2018-13 modifies the disclosure requirements for fair value measurements by removing, modifying or adding certain disclosures. This ASU is effective for annual periods beginning after December 15, 2019 including interim periods within those fiscal years (Q1 fiscal 2021 for AstroNova), with early adoption permitted. The provisions of ASU 2018-13 relating to changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements, and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. The remaining provisions should be applied retrospectively to all periods presented upon their effective date. The Company is currently evaluating the impact this new guidance will have on its consolidated financial statements and related disclosures.

Leases

In February 2016, the FASB issued ASU 2016-02, “Leases (Topic 842).” ASU 2016-02 supersedes current guidance related to accounting for leases and is intended to increase transparency and comparability among organizations by requiring lessees to recognize assets and liabilities in the balance sheet for operating leases with lease terms greater than twelve months. The update also requires improved disclosures to help users of financial statements better understand the amount, timing and uncertainty of cash flows arising from leases. In July 2018, the FASB issued ASU 2018-10, “Codification Improvements to Topic 842” which includes certain clarifications to address potential narrow-scope implementation issues. Additionally in July 2018 the FASB issued ASU 2018-11, “Leases (Topic 842) Targeted Improvements,” which amends ASU 2016-02 to provide an alternative transition method to adopt the new lease standard which will not require adjustments to comparative periods nor require modified disclosure in those comparative periods. The new standard will be effective for Astronova at the beginning of fiscal 2020.

Upon the adoption of this guidance, the Company expects to recognize approximately $2.0 million of right-of-use assets and lease liabilities on its consolidated balance sheet related to its operating leases. The

Company anticipates electing the package of practical expedients, which among other things, allows the carryforward of the historical lease classification. The Company is in the process of identifying appropriate changes to its accounting policies and procedures, system processes, and related internal controls to support the requirements of this new guidance. This standard will not have a material impact on our liquidity or debt-covenant compliance under our current credit agreement, and is not expected to have any significant impact on the Company's results of operations.

No other new accounting pronouncements, issued or effective during fiscal 2019, have had or are expected to have a material impact on our consolidated financial statements.

Note 2—Revenue Recognition

We derive revenue from the sale of (i) hardware including, digital color label printers and specialty OEM printing systems, portable data acquisition systems and airborne printers used in the flight deck and in the cabin of military, commercial and business aircraft, (ii) related supplies required in the operation of the hardware, (iii) repairs and maintenance of equipment and (iv) service agreements.

Revenues disaggregated by primary geographic markets and major product types are as follows:

Primary geographical markets:

	Year Ended		
(In thousands)	**January 31, 2019**	**January 31, 2018**	**January 31, 2017**
United States	$ 83,668	$ 69,795	$ 69,850
Europe	31,574	29,948	18,848
Asia	8,207	3,808	1,664
Canada	6,692	5,373	5,008
Central and South America	4,147	3,402	3,053
Other	2,369	1,075	25
Total Revenue	$ 136,657	$ 113,401	$ 98,448

Major product types:

	Year Ended		
(In thousands)	**January 31, 2019**	**January 31, 2018**	**January 31, 2017**
Hardware	$ 53,207	$ 37,501	$ 33,797
Supplies	71,178	65,265	56,169
Service and Other	12,272	10,635	8,482
Total Revenue	$ 136,657	$ 113,401	$ 98,448

Contract Assets and Liabilities

We normally do not have contract assets, which are primarily unbilled accounts receivable that are conditional on something other than the passage of time. Our contract liabilities, which represent billings in excess of revenue recognized, are related to advanced billings for purchased service agreements and extended warranties and were $373,000 and $367,000 at January 31, 2019 and January 31, 2018, respectively, and are recorded as deferred revenue in the consolidated balance sheet. The slight increase in the deferred revenue at January 31, 2019 is primarily due to approximately $622,000 of revenue recognized during the year that was included in the deferred revenue balance of the prior year end, offset by cash payments received in advance of satisfying performance obligations.

Contract Costs

We have determined that certain costs related to obtaining sales contracts for our aerospace printer products meet the requirement to be capitalized. These costs are deferred and amortized based on the forecasted number of units sold over the estimated benefit term. The balance of these contract assets at January 31, 2018 was $832,000 which was reported in other assets in the consolidated balance sheet. In fiscal 2019, the Company incurred an additional $150,000 in incremental direct costs which were deferred. The amortization of incremental direct costs was $79,000 for the period ended January 31, 2019. The balance of the deferred incremental direct contract costs net of accumulated amortization at January 31, 2019 is $903,000, of which $109,000 was reported in other current assets and $794,000 was reported in other assets in the consolidated balance sheet. The contract costs are expected to be amortized over the estimated remaining period of benefit, which we currently estimate to be approximately 7 years.

Note 3—Acquisitions

Honeywell Asset Purchase and License Agreement

On September 28, 2017, AstroNova, Inc. entered into an Asset Purchase and License Agreement (the “Honeywell Agreement”) with Honeywell International, Inc. (“Honeywell”) to acquire an exclusive perpetual world-wide license to manufacture Honeywell’s narrow-format flight deck printers for two aircraft families along with certain inventory used in the manufacturing of the licensed printers. The purchase price consisted of an initial payment of $14.6 million in cash, paid at the closing of the transaction using borrowings from the Company’s revolving credit facility and guaranteed minimum royalty payments of $15.0 million, to be paid over the next ten years, based on gross revenues from the sales of the printers, paper and repair services of the licensed products. The royalty rates vary based on the year in which they are paid or earned and product sold or service provided, and range from single-digit to mid double-digit percentages of gross revenue.

This transaction was evaluated under ASU 2017-01, “Business Combinations (Topic 805): Clarifying the Definition of a Business,” and was accounted for as an asset acquisition.

The minimum royalty payment obligation of $15.0 million was recorded at the present value of the minimum annual royalty payments using a present value factor of 2.8%, which is based on the estimated after tax cost of debt for similar companies. During fiscal 2019, the Company paid $1.9 million of guaranteed minimum royalty payments. At January 31, 2019, the current portion of the outstanding guaranteed royalty obligation of $1.875 million is to be paid over the next twelve months and is reported as a current liability and the remainder of $9.9 million is reported as a long-term liability on the Company’s consolidated balance sheet at January 31, 2019. In addition to the guaranteed minimum royalty payments paid in fiscal 2019 and 2018, the Company incurred $2.8 million and $0.6 million, respectively, in excess royalty expense, which is included in cost of revenue in the Company’s consolidated statements of income for the years ended January 31, 2019 and 2018, respectively. A total of $1.3 million and $0.6 million of excess royalty is payable and reported as a current liability on the Company’s consolidated balance sheet at January 31, 2019 and 2018, respectively.

In connection with the Honeywell Agreement, the Company also entered into a Transition Services Agreement (“TSA”) with Honeywell related to the transfer of the manufacturing and repair of the licensed printers from their current locations to AstroNova’s plant in West Warwick, Rhode Island. During fiscal 2019, the Company paid an additional $0.4 million to acquire another repair facility revenue stream in accordance with the terms of the TSA. The additional $0.4 million payment was included as part of the Honeywell Agreement purchase price and recorded as an increase to the related intangible asset.

Under the terms of the TSA, the Company is required to pay for certain expenses incurred by Honeywell during the period in which product manufacturing is transferred to the Company’s facilities. In the first quarter of fiscal 2019, a change in accounting estimates for product costs and operating expenses related to the TSA resulted in an increase of $1.0 million in operating income ($0.8 million net of tax or $0.12 per diluted share). Additionally, in the first quarter of fiscal 2019, a change in accounting estimates for revenue subject to customer rebates under the Honeywell Agreement increased operating income by $0.4 million ($0.3 million net of tax or $0.05 per diluted share). These changes in accounting estimates were the result of actual amounts billed and received differing from initial estimates.

Transaction costs incurred for this acquisition were $0.3 million and were included as part of the purchase price.

The assets acquired in connection with the acquisition were recorded by the Company at their estimated relative fair values as of the acquisition date as follows:

(In thousands)	
Inventory	$ 1,411
Identifiable Intangible Assets	27,243*
Total Purchase Price	$28,654

* Includes additional $0.4 million related to the payment in fiscal 2019 in accordance with the terms of the TSA.

The purchase price, including the initial payment, minimum royalty payment obligation, transaction costs and subsequent additional TSA obligation payment, was allocated based on the relative fair value of the assets acquired. The fair value of the intangible assets acquired was estimated by applying the income approach. These fair value measurements are based on significant inputs that are not observable in the market and therefore represent a Level 3 measurement as defined in ASC 820, “Fair Value Measurement and Disclosure.” Key assumptions in estimating the fair value of the intangibles include (1) the remaining life of the intangibles based on the term of the Honeywell Asset Purchase and License Agreement of 10 years, (2) a range of annual earnings projections from $3.9 million – $5.4 million and (3) the Company’s internal rate of return of 21.0%.

The acquired identifiable intangible assets are as follows:

(In thousands)	Fair Value	Useful Life (Years)
Customer Contract Relationships	$27,243	10

Trojan Label

On February 1, 2017, the Company’s wholly-owned Danish subsidiary, ANI ApS, completed the acquisition of the issued and outstanding equity interests of TrojanLabel ApS (“TrojanLabel”). The acquisition of TrojanLabel was accounted for as a purchase of a business under the acquisition method in accordance with the guidance provided by FASB ASC 805, “Business Combinations.”

The purchase price of this acquisition was 62.9 million Danish Krone (approximately $9.1 million), net of cash acquired of 976,000 Danish Krone (approximately $0.1 million), of which 6.4 million Danish Krone (approximately $0.9 million) was placed in escrow to secure certain post-closing working capital adjustments and indemnification obligations of the sellers. The acquisition was funded using available cash and investment securities. In the first quarter of fiscal 2019, the Company settled the post-closing adjustment with TrojanLabel and recovered approximately 891,000 Danish Krone (approximately $145,000) of the amount held in the escrow account, which was recognized as an adjustment to the allowance account for TrojanLabel receivables. The remaining escrow balance was retained by TrojanLabel.

Part of the purchase agreement included an additional contingent consideration to be paid to the sellers of TrojanLabel if 80% of specified earnings targets were achieved by the TrojanLabel business during the seven years following the closing. However, subsequent to the acquisition, the Company restructured the operating model for the TrojanLabel business such that most of the sales and some of the expenses of the business would be transferred to other legal entities of the Company. This caused the expected earnings targets in TrojanLabel, which was the basis upon which the contingent consideration was structured, to become unlikely to be met. As a result, during fiscal 2018, the estimated fair value of the contingent consideration was reduced resulting in the Company recognizing an additional $1.4 million of income for the year which is offset in general and administrative expense on the Company's Consolidated Income Statement for the period ended January 31, 2018.

Total acquisition-related costs were approximately $0.7 million, of which $0.1 million and $0.6 million are included in the general and administrative expenses in the Company's consolidated statements of income for the years ending January 31, 2018 and January 31, 2017, respectively.

The US dollar purchase price of the acquisition has been allocated on the basis of fair value as follows:

(In thousands)	
Accounts Receivable	$ 1,322
Inventory	796
Other Current Assets	166
Property, Plant and Equipment	15
Identifiable Intangible Assets	3,264
Goodwill	7,388
Accounts Payable and Other Current Liabilities	(1,821)
Other Liability	(114)
Contingent Liability (Earnout)	(1,314)
Deferred Tax Liability	(695)
Total Purchase Price	$ 9,007

The fair value of the intangible assets acquired was estimated by applying the income approach, and the fair value of the contingent consideration liability was estimated by applying the real options method. These fair value measurements are based on significant inputs that are not observable in the market and therefore represent a Level 3 measurement as defined in ASC 820, "Fair Value Measurement and Disclosure." Key assumptions in estimating the fair value of the intangibles include (1) remaining life of existing technology acquired based on estimate of percentage of revenue from 0% – 100% for each product, (2) the Company's internal rate of return of 19.0% and (3) a range of earnings projections from $121,000 – $1,070,000. Key assumptions in estimating the fair value of the contingent consideration liability (earnout) include (1) the estimated earnout targets over the next seven years of $407,000–$1,280,000, (2) the probability of success (achievement of the various contingent events) from 1.6%–87.2% and (3) a risk-adjusted discount rate of approximately 1.77%–3.35% used to adjust the probability-weighted earnout payments to their present value. The fair value of the contingent liability is revalued every reporting period based on updated assumptions. Refer above and to Note 21 "Fair Value Measurements" for further details.

Goodwill of $7.4 million, which is not deductible for tax purposes, represents the excess of the purchase price over the estimated fair value assigned to the tangible and identifiable intangible assets acquired and liabilities assumed from TrojanLabel. The goodwill recognized is attributable to synergies which are expected to enhance and expand the Company's overall product portfolio and opportunities in new and existing markets, future technologies that have yet to be determined and TrojanLabel's assembled work force. The carrying amount of the goodwill was allocated to the Product Identification segment of the Company.

The following table reflects the fair value of the acquired identifiable intangible assets and related estimated useful lives:

(In thousands)	Fair Value	Useful Life (Years)
Existing Technology	$2,327	7
Distributor Relations	937	10
Total	$3,264	

The existing technology intangible asset acquired represents the various technologies TrojanLabel has developed related to its series of printing presses, including hardware components of the presses and the software utilized to optimize their performance.

Beginning February 1, 2017, the results of operations for TrojanLabel have been included in the Company's statement of income for the period ended January 31, 2019 and 2018 and are reported as part of the Product Identification segment. Assuming the acquisition of TrojanLabel had occurred on February 1, 2016, the impact would not have had a material effect on the Company's results for period ended January 31, 2017, as the acquisition was not considered a significant subsidiary.

Note 4—Intangible Assets

Intangible assets are as follows:

	January 31, 2019				January 31, 2018			
(In thousands)	**Gross Carrying Amount**	**Accumulated Amortization**	**Currency Translation Adjustment**	**Net Carrying Amount**	**Gross Carrying Amount**	**Accumulated Amortization**	**Currency Translation Adjustment**	**Net Carrying Amount**
Miltope:								
Customer Contract Relationships	$ 3,100	$ (1,723)	$ —	$ 1,377	$ 3,100	$ (1,438)	$ —	$ 1,662
RITEC:								
Customer Contract Relationships	2,830	(725)	—	2,105	2,830	(461)	—	2,369
Non-Competition Agreement	950	(681)	—	269	950	(491)	—	459
TrojanLabel:								
Existing Technology	2,327	(711)	140	1,756	2,327	(350)	313	2,290
Distributor Relations	937	(200)	56	793	937	(99)	130	968
Honeywell:								
Customer Contract Relationships	27,243*	(3,869)	—	23,374	26,843	(958)	—	25,885
Intangible Assets, net	$37,387	$ (7,909)	$ 196	$29,674	$36,987	$ (3,797)	$ 443	$33,633

* Includes additional $0.4 million related to the payment in fiscal 2019 in accordance with the terms of the TSA.

There were no impairments to intangible assets during the periods ended January 31, 2019, 2018 and 2017. Amortization expense of $4.1 million; $2.2 million and $0.7 million with regard to acquired intangibles has been included in the consolidated statements of income for years ended January 31, 2019, 2018 and 2017, respectively.

Estimated amortization expense for the next five years is as follows:

(In thousands)	2020	2021	2022	2023	2024
Estimated amortization expense	$4,223	$4,093	$4,005	$4,001	$3,997

Note 5—Securities Available for Sale

Pursuant to our investment policy, securities available for sale include state and municipal securities with contractual or anticipated maturity dates ranging from 1 to 13 months. These securities are carried at fair value, with unrealized gains and losses reported as a component of accumulated other comprehensive income (loss), net of taxes, in shareholders' equity until realized. Realized gains and losses from the sale of available for sale securities, if any, are determined on a specific identification basis. A decline in the fair value of any available for sale security below cost that is determined to be other than temporary will result in a write-down of its carrying amount to fair value. No such impairment charges were recorded for any period presented. All short-term investment securities have original maturities greater than 90 days.

The fair value, amortized cost and gross unrealized gains and losses of the securities are as follows:

(In thousands)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
January 31, 2019				
State and Municipal Obligations	$ —	$ —	$ —	$ —
January 31, 2018				
State and Municipal Obligations	$ 1,513	$ —	$ (2)	$1,511

The contractual maturity dates of these securities are as follows:

(In thousands)	January 31 2019	2018
Less than one year	$ —	$1,096
One to two years	—	415
	$ —	$1,511

Actual maturities may differ from contractual dates as a result of revenue or earlier issuer redemptions.

Note 6—Inventories

The components of inventories are as follows:

(In thousands)	January 31 2019	2018
Materials and Supplies	$17,517	$13,715
Work-in-Progress	1,633	1,404
Finished Goods	15,688	17,210
	34,838	32,329
Inventory Reserve	(4,677)	(4,720)
Balance at January 31	$30,161	$27,609

Finished goods inventory includes $2.1 million and $2.0 million of demonstration equipment at January 31, 2019 and 2018, respectively.

Note 7—Property, Plant and Equipment

Property, plant and equipment consist of the following:

(In thousands)	January 31 2019	2018
Land and Land Improvements	$ 967	$ 967
Buildings and Leasehold Improvements	12,165	12,056
Machinery and Equipment	22,810	22,125
Computer Equipment and Software	9,385	7,729
Gross Property, Plant and Equipment	45,327	42,877
Accumulated Depreciation	(34,947)	(33,125)
Net Property Plant and Equipment	$ 10,380	$ 9,752

Depreciation expense on property, plant and equipment was $2.0 million, $1.8 million and $1.7 million for the years ended January 31, 2019, 2018 and 2017, respectively.

Note 8—Accrued Expenses

Accrued expenses consisted of the following:

(In thousands)	January 31 2019	2018
Warranty	$ 832	$ 575
Professional Fees	403	392
Dealer Commissions	320	232
Accrued Payroll & Sales Tax	97	191
Product Replacement Cost Reserve	—	158
Other	1,259	866
	$2,911	$2,414

Note 9—Revolving Line of Credit

The Company has a $10.0 million revolving line of credit under its existing Credit Agreement with Bank of America. Revolving credit loans may be borrowed, at the Company's option, in U.S. Dollars or, subject to certain conditions, Euros, British Pounds, Canadian Dollars or Danish Krone. Amounts borrowed under the revolving credit facility bear interest at a rate *per annum* equal to, at the Company's option, either (a) the LIBOR rate (or in the case of revolving credit loans denominated in a currency other than U.S. Dollars, the applicable quoted rate), plus a margin that varies within a range of 1.0% to 1.5% based on the Company's consolidated leverage ratio, or (b) a fluctuating reference rate equal to the highest of (i) the federal funds' rate plus 0.50%, (ii) Bank of America's publicly announced prime rate or (iii) the LIBOR rate plus 1.00%, plus a margin that varies within a range of 0.0% to 0.5% based on the Company's consolidated leverage ratio.

During fiscal 2019, $3.0 million was drawn on the revolving credit facility, of which $1.5 million was repaid and $1.5 million remains outstanding as of January 31, 2019. The outstanding balance bears interest at a weighted average annual rate of 5.6% and $61,000 of interest has been accrued and paid on this obligation and included in other expense in the accompanying consolidated income statement for the period ended January 31, 2019. As of January 31, 2019, there is $8.5 million available for borrowing under the revolving credit facility.

The Company is required to pay a commitment fee on the undrawn portion of the revolving credit facility at the rate of 0.25% *per annum* .

Note 10—Debt

Long-term debt in the accompanying condensed consolidated balance sheets is as follows:

(In thousands)	January 31 2019	2018
USD Term Loan (4.02% and 2.85% as of January 31, 2019 and 2018, respectively); maturity date November 30, 2022	$11,250	$15,000
USD Term Loan (4.02% and 3.06% as of January 31, 2019 and 2018, respectively); maturity date of January 31, 2022	6,992	8,372
	18,242	23,372
Debt Issuance Costs, net of accumulated amortization	(164)	(226)
Current Portion of Term Loan	(5,208)	(5,498)
Long-Term Debt	$12,870	$17,648

The schedule of required principal payments remaining during the next five years on long-term debt outstanding as of January 31, 2019 is as follows:

(In thousands)	
Fiscal 2020	$ 5,208
Fiscal 2021	5,208
Fiscal 2022	5,576
Fiscal 2023	2,250
Fiscal 2024	—
	$18,242

On February 28, 2017, the Company and the Company's wholly owned Danish subsidiary, ANI ApS (together, the "Parties") entered into a Credit Agreement with Bank of America, N.A. (the "Lender"). The Parties also entered into a related Security and Pledge Agreement with the Lender. The Credit Agreement provided for a term loan to ANI ApS in the amount of $9.2 million. On November 30, 2017, the Parties entered into a Second Amendment to the Credit Agreement with the Lender. The Second Amendment provided for a term loan to the Company in the principal amount of $15.0 million, in addition to the revolving credit facility for the Company and the term loan previously borrowed by ANI ApS at the original closing under the Credit Agreement. The proceeds from the term loan were used to repay the entire $14.6 million principal balance of the revolving loan outstanding under the revolving credit facility as of that date.

The term loans bear interest at a rate *per annum* equal to the LIBOR rate plus a margin that varies within a range of 1.0% to 1.5% based on the Company's consolidated leverage ratio. In connection with the Credit Agreement, AstroNova and ANI ApS entered into certain hedging arrangements with the Lender to manage the variable interest rate risk and currency risk associated with its payments in respect of the $9.2 million term loan. In connection with the Second Amendment to the Credit Agreement, AstroNova entered into certain hedging arrangements with the Lender to manage the variable interest rate risk and currency exchange risk associated with its payments in respect of the $15.0 million term loan. Refer to Note 11, "Derivative Financial Instruments and Risk Management" for further information about these arrangements.

The Parties must comply with various customary financial and non-financial covenants under the Credit Agreement. The financial covenants consist of a maximum consolidated leverage ratio and a minimum consolidated fixed charge coverage ratio. The Credit Agreement contains limitations, in each case subject to various exceptions and thresholds, on the Company's and its subsidiaries' ability to incur future indebtedness, to place liens on assets, to conduct mergers or acquisitions, to sell assets, to alter their capital structure, to make investments and loans, to change the nature of their business, and to prepay subordinated indebtedness. The Credit Agreement permits the Company to pay cash dividends on and repurchase shares of its common stock, subject to certain limitations.

The Lender is entitled to accelerate repayment of the loans and to terminate its revolving credit commitment under the Credit Agreement upon the occurrence of any of various customary events of default, which include, among other events, the following: failure to pay when due any principal, interest or other amounts in respect of the loans, breach of any of the Company's covenants or representations under the loan documents, default under any other of the Company's or its subsidiaries' significant indebtedness agreements, a bankruptcy, insolvency or similar event with respect to the Company or any of its subsidiaries, a significant unsatisfied judgment against the Company or any of its subsidiaries, or a change of control of the Company.

The obligations of ANI ApS in respect of the $9.2 million term loan are guaranteed by the Company and TrojanLabel ApS. The Company's obligations in respect of the $15.0 million term loan, revolving credit facility and its guarantee in respect of the ANI ApS term loan are secured by substantially all of the assets of the Company (including a pledge of a portion of the equity interests held by the Company in ANI ApS and the Company's wholly-owned German subsidiary AstroNova GmbH), subject to certain exceptions.

As of January 31, 2019, the Company believes it is in compliance with all of the covenants in the Credit Agreement.

Note 11—Derivative Financial Instruments and Risk Management

The Company has entered into a cross-currency interest rate swap to manage the interest rate risk and foreign currency exchange risk associated with the floating-rate foreign currency-denominated term loan borrowing by our Danish Subsidiary and an interest rate swap to manage the interest rate risk associated with the variable rate term loan borrowing by the Company. In accordance with the guidance in ASC 815, both swaps have been designated as cash flow hedges of floating-rate borrowings and are recorded at fair value.

The cross-currency interest rate swap agreement utilized by the Company effectively modifies the Company's exposure to interest rate risk and foreign currency exchange rate risk by converting the Company's floating-rate debt denominated in U.S. Dollars on our Danish subsidiary's books to a fixed-rate debt denominated in Danish Krone for the term of the loan, thus reducing the impact of interest-rate and foreign currency exchange rate changes on future interest expense and principal repayments. This swap involves the receipt of floating rate amounts in U.S. Dollars in exchange for fixed-rate interest payments in Danish Krone, as well as exchanges of principal at the inception spot rate, over the life of the term loan. As of January 31, 2019 and 2018, the total notional amount of the Company's cross-currency interest rate swap was $6.3 million and $7.8 million, respectively.

The interest rate swap agreement utilized by the Company on the term loan effectively modifies the Company's exposure to interest rate risk by converting the Company's floating-rate debt to fixed-rate debt for the next five years, thus reducing the impact of interest-rate changes on future interest expense. This swap involves the receipt of floating rate amounts in U.S. dollars in exchange for fixed rate payments in U.S. dollars over the life of the term loan. As of January 31, 2019 and 2018, the total notional amount of the Company's interest rate swap was $11.3 million and $14.3 million, respectively.

The following table provides a summary of the fair values of the Company's derivatives recorded in the consolidated balance sheets:

Cash Flow Hedges (In thousands)	**Balance Sheet Classification**	**January 31, 2019**	**January 31, 2018**
Cross-currency interest rate swap	Other Long Term Liabilities	$ 600	$ 1,513
Interest rate swap	Other Assets	$ 85	$ 101

The following tables present the impact of the derivative instruments in our condensed consolidated financial statements for the years ended January 31, 2019 and 2018:

Cash Flow Hedge (In thousands)	Years Ended: Amount of Gain (Loss) Recognized in OCI on Derivative, January 31, 2019	Amount of Gain (Loss) Recognized in OCI on Derivative, January 31, 2018	Location of Gain (Loss) Reclassified from Accumulated OCI into Income	Amount of Gain (Loss) Reclassified from Accumulated OCI into Income, January 31, 2019	Amount of Gain (Loss) Reclassified from Accumulated OCI into Income, January 31, 2018
Swap contracts	$ 797	$ (1,330)	Other Income (Expense)	$ 769	$ (1,344)

At January 31, 2019, the Company expects to reclassify approximately $0.4 million of net gains on the swap contracts from accumulated other comprehensive income (loss) to earnings during the next 12 months due to changes in foreign exchange rates and the payment of variable interest associated with the floating-rate debt.

Note 12—Accumulated Other Comprehensive Loss

The changes in the balance of accumulated other comprehensive loss by component are as follows:

(In thousands)	Foreign Currency Translation Adjustments	Unrealized Holding Gain (Loss) on Available for Sale Securities	Net Unrealized Gain (Losses) on Cash Flow Hedges	Total
Balance at January 31, 2016	$ (983)	$ 8	—	$ (975)
Other Comprehensive Loss	(65)	(16)	—	(81)
Amounts Reclassified to Net Income	—	—	—	—
Net Other Comprehensive Loss	(65)	(16)	—	(81)
Balance at January 31, 2017	$ (1,048)	$ (8)	$ —	$(1,056)
Other Comprehensive Income (Loss) before reclassification	867	5	(1,036)	(164)
Amounts reclassified from AOCI to Earnings	—	—	1,048	1,048
Other Comprehensive Income	867	5	12	884
Balance at January 31, 2018	$ (181)	$ (3)	$ 12	$ (172)
Other Comprehensive Income (Loss) before reclassification	(671)	—	622	(49)
Amounts reclassified from AOCI to Earnings	—	3	(600)	(597)
Other Comprehensive Income (Loss)	(671)	3	22	(646)
Balance at January 31, 2019	$ (852)	$ —	$ 34	$ (818)

The amounts presented above in other comprehensive income (loss) are net of taxes except for translation adjustments associated with our German and Danish subsidiaries.

Note 13—Shareholders' Equity

During fiscal 2019, 2018 and 2017, certain of the Company's employees delivered a total of 33,430, 26,561 and 51,531 shares, respectively, of the Company's common stock to satisfy the exercise price and related taxes for stock options exercised and restricted stock vesting. The shares delivered were valued at a total of $0.6 million, $0.4 million and $0.8 million, respectively, and are included in treasury stock in the accompanying consolidated balance sheets at January 31, 2019, 2018 and 2017. These transactions did not impact the number of shares authorized for repurchase under the Company's current repurchase program.

On May 1, 2017, the Company entered into a stock repurchase agreement to repurchase 826,305 shares of the Company's common stock held by a trust established by Albert W. Ondis at a per share price of $13.60, for an aggregate repurchase price of $11.2 million. This stock repurchase was consummated on May 2, 2017 and was funded using existing cash on hand. Following this stock repurchase, the Ondis trust owns 36,000 shares of the Company's common stock.

April L. Ondis, who was then a director of the Company, is a beneficiary of the trust. The stock repurchase was authorized and approved by the Company's Audit Committee as a related party transaction. Prior to entering into the agreement, the Company obtained an opinion from an independent investment banking firm that the consideration to be paid by the Company to the trust pursuant to the stock repurchase agreement would be fair to the public stockholders of the Company, other than the trust, from a financial point of view.

As of January 31, 2019, the Company's Board of Directors has authorized the purchase of up to an additional 390,000 shares of the Company's common stock on the open market or in privately negotiated transactions.

Note 14—Share-Based Compensation

The Company maintains the following share-based compensation plans:

Stock Plans:

During the year ending January 31, 2019, we were authorized to grant equity awards under two equity incentive plans: the 2015 Equity Incentive Plan (the "2015 Plan") and the AstroNova, Inc. 2018 Equity Incentive Plan (the "2018 Plan").

The 2018 Plan was approved by the Company's shareholders at the Company's annual meeting of shareholders held on June 4, 2018. The 2018 Plan provides for, among other things, the issuance of awards with respect to up to 650,000 shares of the Company's common stock, plus an additional number of shares equal to the number of shares subject to awards granted under the 2018 Plan or the 2015 Plan that are, following the effectiveness of the 2018 Plan, forfeited, cancelled, satisfied without the issuance of stock, otherwise terminated (other than by exercise), or, for shares of stock issued pursuant to any unvested award, reacquired by the Company at not more than the grantee's purchase price (other than by exercise). The 2015 Plan was to expire in May 2025, however following the approval of the 2018 Plan, the Company ceased granting new equity awards pursuant to the 2015 Plan. As of January 31, 2019, 80,934 unvested shares of restricted stock granted and options to purchase an aggregate of 151,000 shares were outstanding under the 2018 Plan.

Under the 2015 Plan, the Company could grant incentive stock options, non-qualified stock options, stock appreciation rights, time or performance-based restricted stock units (RSUs), restricted stock awards (RSAs), and other stock-based awards to executives, key employees, directors and other eligible individuals. Options granted to employees under the plan vest over four years and expire after ten years. The exercise price of each stock option is established at the discretion of the Compensation Committee; however, all options granted under the 2015 Plan must be issued at an exercise price of not less than the fair market value of the Company's common stock on the date of grant. As of January 31, 2019, 50,585 unvested shares of restricted stock granted and options to purchase an aggregate of 202,450 shares were outstanding under the 2015 Plan.

Under the 2015 Plan, each non-employee director received an automatic annual grant of ten-year options to purchase 5,000 shares of stock upon the adjournment of each annual shareholders meeting. Each such option is exercisable at the fair market value of the Company's common stock as of the grant date, and vests immediately prior to the next annual shareholders' meeting. Accordingly, on May 17, 2017, 30,000 options were issued to the non-employee directors.

In addition to the 2015 Plan and the 2018 Plan, we previously granted equity awards under our 2007 Equity Incentive Plan (the "2007 Plan"). The 2007 Plan expired in May 2017 and no new awards may be issued under it, but outstanding awards will continue to be governed by it. As of January 31, 2019, 2,148 unvested shares of restricted stock granted and options to purchase an aggregate of 417,695 shares were outstanding under the 2007 Plan.

The Company had a Non-Employee Director Annual Compensation Program (the “Prior Program”) under which each non-employee director received an automatic grant of RSAs on the first business day of each fiscal quarter. Under the Program, the number of whole shares to be granted each quarter was equal to 25% of the number calculated by dividing the director compensation amount by the fair market value of the Company’s stock on such day. The director annual compensation amount was $55,000 in fiscal year 2017, $65,000 in fiscal year 2018 and $75,000 in fiscal year 2019. In addition, the Chairman of the Board received RSAs with an aggregate value of $6,000, and the Chairs of the Audit and Compensation Committees each receive RSAs with an aggregate value of $4,000, also issued in quarterly installments and calculated in the same manner as the directors’ RSA grants. RSAs granted prior to March 30, 2017 become fully vested on the first anniversary of the date of grant. RSAs granted subsequent to March 30, 2017 become vested three months after the date of grant. A total of 26,515, 28,062 and 11,379 shares were awarded to the non-employee directors as compensation under the Program in fiscal 2019, 2018 and 2017, respectively.

Refer to Note 22, “Subsequent Event” for details regarding the Amended and Restated Non-Employee Director Annual Compensation Program adopted January 31, 2019 and effective beginning on February 1, 2019.

In May 2015 (fiscal year 2016), the Company granted an aggregate of 80,000 time-based and 155,000 performance-based RSUs to certain officers of the Company. Based upon revenue in fiscal 2018, 2017 and 2016, 33,638, 9,025 and 15,810 shares of the performance based RSUs were earned in the first quarter of fiscal 2019, 2018 and 2017, respectively.

In March 2016 (fiscal year 2017), the Company granted 50,000 options and 4,030 RSAs to its Chief Executive Officer pursuant to an Equity Incentive Award Agreement dated as of November 24, 2014 (the “CEO Equity Incentive Agreement”).

In May 2016 (fiscal year 2017) the Company granted 37,000 options to certain key employees. On August 1, 2016 (fiscal year 2017) the Company granted 5,000 options to its Chief Financial Officer.

In March 2017 (fiscal year 2018), the Company granted 50,000 options to the Chief Executive Officer pursuant to the CEO Equity Incentive Agreement. In February and April 2017 the Company granted 52,189 options to certain other key employees. In December 2017, upon election to the Board, the Company granted 5,000 non-qualified options and 675 RSUs to a Board member. In January 2018, the Company granted 50,000 non-qualified options and 15,000 RSUs to the newly appointed Chief Financial Officer.

In April 2018 (fiscal year 2019), the Company granted 5,000 non-qualified options.

In May 2018 (fiscal year 2019), the Company granted 40,000 options to certain key employees.

In June 2018 (fiscal year 2019), the Company granted an aggregate of 25,000 non-qualified options to the members of the Board of Directors. Also in June 2018, the Company granted an aggregate of 126,000 options, 44,275 time-based RSUs and 38,000 performance-based RSUs to certain officers of the Company, all of which vest over three years. Of the 38,000 performance-based RSUs, 35,657 were earned based upon achievement of fiscal 2019 revenue and operating income targets.

Share-Based Compensation:

Share-based compensation expense has been recognized as follows:

(In thousands)	Years Ended January 31 2019	2018	2017
Stock Options	$ 783	$ 437	$ 321
Restricted Stock Awards and Restricted Stock Units	1,088	1,134	685
Employee Stock Purchase Plan	15	12	13
Total	$ 1,886	$ 1,583	$ 1,019

Stock Options:

Aggregated information regarding stock options granted under the plans is summarized below:

	Number of Shares	Weighted-Average Exercise Price Per Share
Options Outstanding, January 31, 2016	657,936	$ 11.00
Options Granted	122,000	14.82
Options Exercised	(87,107)	8.73
Options Forfeited	(4,250)	13.91
Options Cancelled	(3,123)	8.95
Options Outstanding, January 31, 2017	685,456	$ 11.96
Options Granted	187,189	13.57
Options Exercised	(84,025)	10.08
Options Forfeited	(18,750)	14.49
Options Cancelled	(24,600)	11.76
Options Outstanding, January 31, 2018	745,270	$ 12.52
Options Granted	196,000	18.21
Options Exercised	(150,125)	10.62
Options Forfeited	(16,300)	15.10
Options Cancelled	(3,700)	8.95
Options Outstanding, January 31, 2019	771,145	$ 14.30

Set forth below is a summary of options outstanding at January 31, 2019:

	Outstanding			Exercisable		
Range of Exercise prices	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life	Number of Shares	Weighted-Average Exercise Price	Weighted Average Remaining Contractual Life
$5.00-10.00	74,981	$ 7.72	2.6	74,981	$ 7.72	2.6
$10.01-15.00	453,164	13.65	6.8	313,347	13.66	6.3
$15.01-20.00	243,000	17.55	8.9	30,000	15.17	7.5
	771,145	$ 14.30	7.0	418,328	$ 12.70	5.7

The fair value of each stock option granted was estimated on the grant date using the Black-Scholes option-pricing model with the following weighted-average assumptions:

	Years Ended January 31		
	2019	2018	2017
Risk-Free Interest Rate	2.6%	1.9%	1.4%
Expected Life (years)	9	9	5
Expected Volatility	39.4%	39.0%	28.3%
Expected Dividend Yield	1.5%	2.0%	1.9%

The weighted-average estimated fair value of options granted during fiscal 2019, 2018 and 2017 was $7.43, $4.79 and $3.22, respectively. As of January 31, 2019, there was $1.5 million of unrecognized compensation expense related to the unvested stock options granted under the plans. This expense is expected to be recognized over a weighted-average period of 2.3 years.

As of January 31, 2019, the aggregate intrinsic value (the aggregate difference between the closing stock price of the Company's common stock on January 31, 2019, and the exercise price of the outstanding options) that would have been received by the option holders if all options had been exercised was $3.0 million for all exercisable options and $4.4 million for all options outstanding. The total aggregate intrinsic value of options exercised during 2019, 2018 and 2017 was $1.1 million, $0.4 million, and $0.6 million, respectively

Restricted Stock Units (RSUs) and Restricted Stock Awards (RSAs):

Aggregated information regarding RSUs and RSAs granted under the Plan is summarized below:

	RSAs & RSUs	Weighted-Average Grant Date Fair Value
Outstanding at January 31, 2016	293,088	$ 13.02
Granted	24,839	14.89
Vested	(75,133)	12.05
Forfeited	(28,926)	11.49
Outstanding at January 31, 2017	213,868	$ 14.08
Granted	43,737	13.78
Vested	(71,171)	14.12
Forfeited	(9,087)	14.05
Outstanding at January 31, 2018	177,347	$ 13.99
Granted	108,790	17.85
Vested	(67,447)	14.26
Forfeited	(85,023)	14.17
Outstanding at January 31, 2019	133,667	$ 16.90

As of January 31, 2019, there was $1.4 million of unrecognized compensation expense related to unvested RSUs and RSAs. This expense is expected to be recognized over a weighted average period of 1.9 years.

Employee Stock Purchase Plan (ESPP):

AstroNova's ESPP allows eligible employees to purchase shares of common stock at a 15% discount from fair market value on the date of purchase. A total of 247,500 shares were initially reserved for issuance under this plan. Summarized plan activity is as follows:

	Years Ended January 31		
	2019	2018	2017
Shares Reserved, Beginning	39,207	45,224	51,600
Shares Purchased	(5,354)	(6,017)	(6,376)
Shares Reserved, Ending	33,853	39,207	45,224

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Note 15—Income Taxes

The components of income before income taxes are as follows:

(In thousands)	2019	January 31 2018	2017
Domestic	$6,859	$2,110	$4,026
Foreign	449	3,047	2,579
	$7,308	$5,157	$6,605

The components of the provision for income taxes are as follows:

(In thousands)	2019	January 31 2018	2017
Current:			
Federal	$ 1,807	$ 592	$1,269
State	457	251	209
Foreign	952	284	725
	3,216	1,127	2,203
Deferred:			
Federal	$ (843)	$ 903	$ 150
State	(170)	(25)	37
Foreign	(625)	(134)	(13)
	(1,638)	744	174
	$ 1,578	$1,871	$2,377

On December 22, 2017, the President signed the Tax Cuts and Jobs Act of 2017 (“Tax Act”). The Tax Act, among other things, lowered the U.S. corporate income tax rate from 35% to 21% effective January 1, 2018. Consequently, we wrote down our net deferred tax assets as of January 31, 2018 by $1.0 million to reflect the impact of the Tax Act and recorded a corresponding provisional net one-time non-cash charge of $1.0 million. The Company filed its 2017 federal income tax return in November 2018, which increased the tax expense related to the one-time non-cash charge by $0.1 million as a result of certain provision to return adjustments.

The Tax Act taxes certain unrepatriated earnings and profits (E&P) of our foreign subsidiaries (“transition tax”). In order to determine the transition tax, we were required to determine, along with other information, the amount of our accumulated post-1986 E&P for our foreign subsidiaries, as well as the non-U.S. income tax paid by those subsidiaries on such E&P. We were capable of reasonably estimating the one-time deemed repatriation tax and recorded a provisional expense of $0.1 million. The U.S. Treasury issued certain notices and proposed regulations (“interpretative guidance”) during fiscal 2019 which provided additional guidance to assist companies in calculating the one-time deemed repatriation tax. The U.S. Treasury issued final regulations in January 2019. The final regulations did not impact the computation of the final income tax expense. The final one-time deemed repatriation tax remained $0.1 million.

The SEC issued Staff Accounting Bulletin 118 (“SAB 118”) in December 2017, which provides guidance on accounting for the tax effects of Tax Reform. SAB 118 provides a measurement period in which to finalize the accounting under ASC 740, Income Taxes (“ASC 740”) as it relates to the Tax Act. This measurement period should not extend beyond one year from the Tax Act enactment date. In accordance with SAB 118, the Company has properly reflected the income tax effects of all aspects of the legislation for which the accounting under ASC 740 was impacted. All conclusions under SAB 118 were finalized during the fourth quarter of 2018 with no material changes to the provisional amounts.

The Company’s effective tax rate for 2019 was 21.6% compared to 36.3% in 2018 and 36.0% in 2017. The decrease in 2019 from 2018 is primarily related to the Tax Act. This includes the reduction in the U.S. corporate income tax rate from 35% to 21%, the absence of the one-time U.S. deferred tax asset and liability remeasurement and transition tax. This decrease was offset by the absence of R&D credits from amended tax returns and the absence of the non-taxable TrojanLabel earn out liability adjustment in TrojanLabel ApS. The increase in the effective tax rate in 2018 from 2017 is primarily related to provisional Tax Act tax expenses related to the remeasurement of U.S. deferred tax assets and liabilities and the transition tax, substantially offset by increased R&D credits resulting from a completed study, a decrease in non-deductible transaction costs, the non-taxable TrojanLabel earn out liability adjustment in TrojanLabel ApS, and a decrease in unrecognized tax benefits. The increase in 2017 from 2016 is primarily related to non-deductible transaction costs and increased unrecognized tax benefits. The provision for income taxes differs from the amount computed by applying the United States federal statutory income tax rate of 21.0% (32.9% for FY18 and 34% FY17) to income before income taxes. The reasons for this difference were due to the following:

		January 31	
(In thousands)	2019	2018	2017
Income Tax Provision at Statutory Rate	$1,534	$1,697	$2,246
U.S Corporate Rate Change	52	1,010	—
State Taxes, Net of Federal Tax Effect	226	149	162
Transition Tax on Repatriated Earnings	14	104	—
Capitalized Transaction Costs	—	—	179
Unrecognized State Tax Benefits	(34)	(20)	165
Domestic Production Deduction	—	(47)	(103)
Return to Provision Adjustment	58	(122)	(75)
TrojanLabel Earn Out Liability Adjustment	—	(316)	—
R&D Credits	(218)	(537)	(168)
Foreign Deferred Intangible Income	(53)	—	—
Other	(1)	(47)	(29)
	$1,578	$1,871	$2,377

The components of deferred income tax expense arise from various temporary differences and relate to items included in the statement of income. The tax effects of temporary differences that gave rise to significant portions of the deferred tax assets and liabilities are as follows:

(In thousands)	January 31 2019	2018
Deferred Tax Assets:		
Inventory	$ 1,800	$ 1,648
Honeywell Royalty Liability	3,146	3,382
State R&D Credits	1,305	1,161
Share-Based Compensation	493	399
Compensation Accrual	155	194
Warranty Reserve	201	139
Unrecognized State Tax Benefits	133	138
Deferred Service Contract Revenue	91	84
Bad Debt	101	—
Net Operating Loss	505	—
Other	142	176
	8,072	7,321
Deferred Tax Liabilities:		
Intangibles	2,660	3,679
Accumulated Tax Depreciation in Excess of Book Depreciation	982	1,028
Other	238	322
	3,880	5,029
Subtotal	4,192	2,292
Valuation Allowance	(1,304)	(1,161)
Net Deferred Tax Assets	$ 2,888	$ 1,131

The valuation allowance of $1.3 million at January 31, 2019 and $1.2 million at January 31, 2018 related to state research and development tax credit carryforwards, which are expected to expire unused. The valuation allowance increased $0.1 million in 2019 and $0.5 million in 2018 due to the decrease in the federal tax effect of state taxes from the federal rate reduction provided for in the Tax Act and the generation of research and development credits in excess of the Company’s ability to currently utilize them. The Company has reached this conclusion after considering the availability of taxable income in prior carryback years, tax planning strategies, and the likelihood of future state taxable income and credits exclusive of reversing temporary differences and carryforwards in the relevant state jurisdiction.

We believe that it is reasonably possible that some unrecognized tax benefits, accrued interest and penalties could decrease income tax expense in the next year due to either the review of previously filed tax returns or the expiration of certain statutes of limitation. The changes in the balances of unrecognized tax benefits, excluding interest and penalties are as follows:

(In thousands)	2019	2018	2017
Balance at February 1	$665	$708	$591
Increases in prior period tax positions	—	—	75
Increases in current period tax positions	7	55	133
Reductions related to lapse of statute of limitations	(54)	(98)	(91)
Balance at January 31	$618	$665	$708

During fiscal 2019, 2018 and 2017, the Company recognized $8,000, $24,000 and $52,000, respectively, of expenses related to a change in interest and penalties, which are included as a component of income tax expense in the accompanying statements of income. The Company has accrued potential interest and penalties of $0.5 million and $0.4 million at the end of January 31, 2019 and 2018, respectively.

The Company and its subsidiaries file income tax returns in U.S. federal jurisdictions, various state jurisdictions, and various foreign jurisdictions. The Company is no longer subject to U.S. federal tax examinations for fiscal years ended prior to January 2014. The Company is currently under audit by the IRS for the tax years ended January 31, 2014, 2015, and 2016. No proposed adjustments have been raised at this time.

U.S. income taxes have not been provided on $6.6 million of undistributed earnings of the Company’s foreign subsidiaries since it is the Company’s intention to permanently reinvest such earnings offshore. If the earnings were distributed in the form of dividends, the Company would not be subject to U.S. Tax as a result of the Tax Act but could be subject to foreign income and withholding taxes. Determination of the amount of this unrecognized deferred income tax liability is not practical.

Note 16—Nature of Operations, Segment Reporting and Geographical Information

The Company’s operations consist of the design, development, manufacture and sale of specialty printers and data acquisition and analysis systems, including both hardware and software and related consumable supplies. The Company organizes and manages its business as a portfolio of products and services designed around a common theme of data acquisition and information output. The Company has two reporting segments consistent with its revenue product groups: Product Identification (PI) and Test & Measurement (T&M).

The Product Identification segment produces an array of high-technology digital color and monochrome label printers and mini presses, labeling software and consumables for a variety of commercial industries worldwide. AstroNova’s T&M segment produces data acquisition systems used worldwide for a variety of recording, monitoring and troubleshooting applications for many industries including aerospace, automotive, defense, rail, energy, industrial and general manufacturing.

Business is conducted in the United States and through foreign branch offices and subsidiaries in Canada, Europe, China, Southeast Asia and Mexico. Manufacturing activities are primarily conducted in the United States. Revenue and service activities outside the United States are conducted through wholly-owned entities and, to a lesser extent, through authorized distributors and agents. Transfer prices are intended to produce gross profit margins as would be associated with an arms-length transaction.

On September 28, 2017, AstroNova entered into the Honeywell Agreement to acquire the exclusive perpetual world-wide license to manufacture Honeywell’s narrow format flight deck printers for two aircraft families. Revenue from the sales of these printers is reported as part of our T&M segment beginning in the third quarter of fiscal 2018. Refer to Note 3, “Acquisitions,” for further details.

On February 1, 2017, AstroNova completed its acquisition of TrojanLabel. TrojanLabel is reported as part of our Product Identification segment beginning with the first quarter of fiscal 2018. Refer to Note 3, “Acquisitions,” for further details.

The accounting policies of the reporting segments are the same as those described in the summary of significant accounting policies herein. The Company evaluates segment performance based on the segment profit before corporate and financial administration expenses.

Summarized below are the revenue and segment operating profit (both in dollars and as a percentage of revenue) for each reporting segment:

($ in thousands)	Revenue			Segment Operating Profit			Segment Operating Profit as a % of Revenue		
	2019	2018	2017	2019	2018	2017	2019	2018	2017
Product Identification	$ 86,786	$ 81,681	$69,862	$ 7,910	$10,561	$ 9,821	9.1%	12.9%	14.1%
T&M	49,871	31,720	28,586	11,933	3,754	4,399	23.9%	11.8%	15.4%
Total	$136,657	$113,401	$98,448	19,843	14,315	14,220	14.5%	12.6%	14.4%
Corporate Expenses				11,123	8,903	7,939			
Operating Income				8,720	5,412	6,281			
Other Income (Expense), Net				(1,412)	(255)	324			
Income Before Income Taxes				7,308	5,157	6,605			
Income Tax Provision				1,578	1,871	2,377			
Net Income				$ 5,730	$ 3,286	$ 4,228			

No customer accounted for greater than 10% of net revenue in fiscal 2019, 2018 and 2017.

Other information by segment is presented below:

(In thousands)	Assets	
	2019	2018
Product Identification	$ 49,091	$ 49,832
T&M	62,250	60,579
Corporate*	7,642	11,902
Total	$ 118,983	$ 122,313

* Corporate assets consist principally of cash, cash equivalents and securities available for sale.

(In thousands)	Depreciation and Amortization			Capital Expenditures		
	2019	2018	2017	2019	2018	2017
Product Identification	$1,888	$1,536	$ 885	$1,935	$1,497	$ 767
T&M	4,264	2,458	1,546	710	707	471
Total	$6,152	$3,994	$2,431	$2,645	$2,204	$1,238

Geographical Data

Presented below is selected financial information by geographic area:

(In thousands)	Revenue			Long-Lived Assets*	
	2019	2018	2017	2019	2018
United States	$ 83,668	$ 69,795	$69,850	$36,750	$39,432
Europe	31,574	29,948	18,848	3,223	3,808
Asia	8,207	3,808	1,664	—	—
Canada	6,692	5,373	5,008	81	145
Central and South America	4,147	3,402	3,053	—	—
Other	2,369	1,075	25	—	—
Total	$136,657	$113,401	$98,448	$40,054	$43,385

* Long-lived assets excludes goodwill assigned to the T&M segment of $4.5 million at both January 31, 2019 and 2018 and $7.8 million assigned to the PI segment at January 31, 2019.

Note 17—Employee Benefit Plans

Employee Stock Ownership Plan (ESOP):

AstroNova had an ESOP which provided retirement benefits to all eligible employees. Annual contributions of either cash or stock in amounts determined by the Company's Board of Directors were invested by the ESOP's Trustees in shares of common stock of AstroNova. On January 23, 2017, the Compensation Committee of the Board of Directors voted to terminate the ESOP and the Company did not make contributions to the ESOP in fiscal years 2019, 2018 and 2017. AstroNova is in the process of allocating all shares owned by the ESOP to the participants; once completed, the ESOP will be terminated.

Profit-Sharing Plan:

AstroNova sponsors a Profit-Sharing Plan (the "Plan") which provides retirement benefits to all eligible domestic employees. The Plan allows participants to defer a portion of their cash compensation and contribute such deferral to the Plan through payroll deductions. The Company makes matching contributions up to specified levels. The deferrals are made within the limits prescribed by Section 401(k) of the Internal Revenue Code.

All contributions are deposited into trust funds. It is the policy of the Company to fund any contributions accrued. The Company's annual contribution amounts are determined by the Board of Directors. Contributions paid or accrued amounted to $0.5 million in fiscal years 2019, 2018 and 2017.

Note 18—Product Warranty Liability

AstroNova offers a manufacturer's warranty for the majority of its hardware products. The specific terms and conditions of warranty vary depending upon the products sold and country in which the Company does business. For products sold in the United States, the Company provides a basic limited warranty, including parts and labor. The Company estimates the warranty costs based on historical claims experience and records a liability in the amount of such estimates at the time product revenue is recognized. The Company regularly assesses the adequacy of its recorded warranty liabilities and adjusts the amounts as necessary. Activity in the product warranty liability, which is included in other accrued expenses in the accompanying consolidated balance sheet, is as follows:

		January 31	
(In thousands)	2019	2018	2017
Balance, beginning of the year	$ 575	$ 515	$ 400
Provision for Warranty Expense	1,680	1,294	971
Cost of Warranty Repairs	(1,423)	(1,234)	(856)
Balance, end of the year	$ 832	$ 575	$ 515

Note 19—Concentration of Risk

Credit is generally extended on an uncollateralized basis to almost all customers after review of credit worthiness. Concentration of credit and geographic risk with respect to accounts receivable is limited due to the large number and general dispersion of accounts which constitute the Company's customer base. The Company periodically performs on-going credit evaluations of its customers. The Company has not historically experienced significant credit losses on collection of its accounts receivable.

Excess cash is invested principally in investment grade government and state municipal securities. The Company has established guidelines relative to diversification and maturities that maintain safety of principal, liquidity and yield. These guidelines are periodically reviewed and modified to reflect changes in market conditions. The Company has not historically experienced any significant losses on its cash equivalents or investments.

During the years ended January 31, 2019, 2018 and 2017, one vendor accounted for 21.6%, 31.3% and 33.2% of purchases, and 28.7%, 26.6% and 42.7% of accounts payable, respectively.

Note 20—Commitments and Contingencies

The Company maintains leases for certain facilities and equipment and has entered into facility agreements, some of which contain provisions for future rent increases. The total amount of rental payments due over the lease term is being charged to rent expense on the straight-line method over the term of the lease. The difference between rent expense recorded and the amount paid is credited or charged to deferred rent, which is included in other liabilities in the accompanying consolidated balance sheets.

Minimum future rental commitments under all non-cancelable operating leases during the next five years as of January 31, 2019 are as follows:

(In thousands)	
2020	$ 574
2021	520
2022	387
2023	294
2024	273
Thereafter	568
	$2,616

Rental expense was $0.8 million, $0.7 million and $0.5 million in fiscal 2019, 2018 and 2017, respectively.

The Company is subject to contingencies, including legal proceedings and claims arising in the normal course of business that cover a wide range of matters including, among others, contract and employment claims; workers compensation claims; product liability; warranty and modification; and adjustment or replacement of component parts of units sold.

Direct costs associated with the estimated resolution of contingencies are accrued at the earliest date at which it is deemed probable that a liability has been incurred and the amount of such liability can be reasonably estimated. While it is impossible to ascertain the ultimate legal and financial liability with respect to contingent liabilities, including lawsuits, we believe that the aggregate amount of such liabilities, if any, in excess of amounts provided or covered by insurance, will not have a material adverse effect on the consolidated financial position or results of operations. It is possible, however, that future results of operations for any particular future period could be materially affected by changes in our assumptions or strategies related to these contingencies or changes out of the Company’s control.

Note 21—Fair Value Measurements

Assets and Liabilities Recorded at Fair Value on a Recurring Basis

Fair value is applied to our financial assets and liabilities including money market funds, available for sale securities, derivative instruments and a contingent consideration liability relating to an earnout payment on future TrojanLabel operating results.

The following tables provide a summary of the financial assets and liabilities that are measured at fair value:

Assets measured at fair value: (in thousands)	Fair value measurement at January 31, 2019				Fair value measurement at January 31, 2018			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Money Market Funds (included in Cash and Cash Equivalents)	$ —	$ —	$ —	$ —	$1,798	$ —	$ —	$1,798
State and Municipal Obligations (included in Securities Available for Sale)	—	—	—	—	—	1,511	—	1,511
Swap Contract (include in Other Assets)	—	85	—	85	—	101	—	101
Total assets	$ —	$ 85	$ —	$ 85	$1,798	$1,612	$ —	$3,410

Liabilities measured at fair value: (in thousands)	Fair value measurement at January 31, 2019				Fair value measurement at January 31, 2018			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Swap Contract (included in Other Liabilities)	$ —	$ 600	$ —	$ 600	$ —	$1,513	$ —	$1,513
Earnout Liability (included in Other Liabilities)	—	—	14	14	—	—	15	15
Total liabilities	$ —	$ 600	$ 14	$ 614	$ —	$1,513	$ 15	$1,528

For our money market funds and municipal obligations, we utilize the market approach to measure fair value. The market approach is based on using quoted prices for identical or similar assets.

We also use the market approach to measure fair value of our derivative instruments. Our derivative asset is comprised of an interest rate swap and our derivative liability is comprised of a cross-currency interest rate swap. These derivative instruments were measured at fair value using readily observable market inputs, such as quotations on interest rates and foreign exchange rates, and are classified as Level 2 because they are over-the-counter contracts with a bank counterparty that are not traded in an active market.

The following table presents the changes in fair value of our Level 3 financial liability for the years ended January 31, 2019 and 2018:

(In thousands)	Contingent Earnout Liability
Balance at January 31, 2017	$ —
Fair value of contingent consideration acquired	1,314
Change in fair value of contingent earn out liability included in earnings	(1,438)
Currency translation adjustment	139
Balance at January 31, 2018	$ 15
Change in fair value of contingent earn out liability included in earnings	—
Currency translation adjustment	(1)
Balance at January 31, 2019	$ 14

The fair value of the earn out liability incurred in connection with the Company’s acquisition of TrojanLabel was determined using the option approach methodology which includes using significant inputs that are not observable in the market and therefore classified as Level 3. Key assumptions in estimating the fair value of the contingent consideration liability included (1) the estimated earnout targets over the next seven years of $0.5 million-$1.4 million, (2) the probability of success (achievement of the various contingent events) from

0.0%-0.9% and (3) a risk-adjusted discount rate of approximately 2.68%-4.9% used to adjust the probability-weighted earnout payments to their present value. At each reporting period, the contingent consideration liability is recorded at its fair value with changes reflected in general and administrative expense in the condensed consolidated statements of operations.

Subsequent to the acquisition of Trojan Label business, the Company restructured the operating model such that most of the sales and some of the expenses of the business would be transferred to other legal entities of the Company. This caused the expected earnings targets in the Danish entity, which were the basis upon which the contingent consideration was structured, to become unlikely to be met. As a result, during fiscal 2018, the value of the contingent consideration was reduced resulting in the Company recognizing an additional $1.4 million of income for the year which is offset in general and administrative expense on the Company's consolidated income statement for the period ended January 31, 2018.

Assets and Liabilities Not Recorded at Fair Value on the Consolidated Balance Sheet

The Company's long-term debt, including the current portion of long-term debt not reflected in the financial statements at fair value, is reflected in the table below:

	Fair Value Measurement at January 31, 2019				
(In thousands)	Level 1	Level 2	Level 3	Total	Carrying Value
Long-Term Debt and Related Current Maturities	$ —	$ —	$18,857	$18,857	$18,242

	Fair Value Measurement at January 31, 2018				
(In thousands)	Level 1	Level 2	Level 3	Total	Carrying Value
Long-Term Debt and Related Current Maturities	$ —	$ —	$24,873	$24,873	$23,372

The fair value of the Company's long-term debt, including the current portion, is estimated by discounting the future cash flows using current interest rates at which similar borrowings with the same maturities would be made to borrowers with similar credit ratings and is classified as Level 3.

Note 22—Subsequent Event

On January 31, 2019, the compensation committee of the Company's board of directors adopted an Amended and Restated Non-Employee Director Annual Compensation Program (the "New Program"), which became effective as of February 1, 2019 and supersedes the Prior Program. Pursuant to the New Program, beginning with fiscal 2020, each non-employee director will automatically receive a grant of restricted stock on the date of their re-election to the Company's board of directors. The number of whole shares to be granted will be equal to the number calculated by dividing the stock component of the director compensation amount determined by the compensation committee for that year by the fair market value of our stock on that day. The value of the restricted stock award for fiscal 2020 is $60,000. To account for the partial year beginning on February 1, 2019 and continuing through the 2019 annual meeting and thereby provide for the alignment of the timing of annual grants of restricted stock under the New Program with the election of directors at the annual meeting, on February 1, 2019, each non-employee director was granted shares of restricted stock with a fair market value of $18,000. Other than the shares granted on February 1, 2019, which will vest on June 1, 2019, shares of restricted stock granted under the New Program will become vested on the first anniversary of the date of grant, conditioned upon the recipient's continued service on the Board through that date.

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SUPPLEMENTARY DATA

Quarterly Financial Information (Unaudited)

	2019				2018			
(In thousands, except per share data)	Q1 (1)	Q2	Q3	Q4 (2)	Q1	Q2	Q3	Q4 (3)
Revenue	$31,487	$33,807	$34,196	$37,167	$24,458	$27,483	$28,760	$32,699
Cost of Revenue	19,377	20,408	20,288	22,585	15,152	17,224	16,966	20,057
Gross Profit	12,110	13,399	13,908	14,582	9,306	10,259	11,794	12,642
	38.5%	39.6%	40.7%	39.2%	38.0%	37.3%	41.0%	38.7%
Operating Expenses (4):								
Selling & Marketing	$ 6,500	$ 6,397	$ 6,587	$ 6,858	$ 5,238	$ 5,187	$ 5,532	$ 6,177
Research & Development	1,692	2,029	2,123	1,969	1,505	1,803	2,033	2,112
General & Administrative	2,653	2,808	2,836	2,825	1,856	2,327	2,597	2,123
Total Operating Expenses	10,845	11,234	11,546	11,652	8,599	9,317	10,162	10,512
Operating Income	1,265	2,165	2,362	2,930	707	942	1,632	2,130
	4.0%	6.4%	6.9%	7.9%	2.9%	3.4%	5.7%	6.5%
Other Income (Expense), Net	(270)	(512)	(538)	(92)	(48)	16	(12)	(210)
Income Before Taxes	995	1,653	1,824	2,838	659	958	1,620	1,920
Income Tax Provision	181	459	407	532	147	231	201	1,292
Net income	$ 814	$ 1,194	$ 1,417	$ 2,306	$ 512	$ 727	$ 1,419	$ 628
Net Income per Common Share—Basic	$ 0.12	$ 0.17	$ 0.21	$ 0.33	$ 0.07	$ 0.11	$ 0.21	$ 0.09
Net Income per Common Share—Diluted	$ 0.12	$ 0.17	$ 0.20	$ 0.32	$ 0.07	$ 0.11	$ 0.21	$ 0.09

Annual totals may not agree to the summation of quarterly information due to insignificant rounding and the required calculation conventions.

(1) The first quarter of fiscal 2019 includes (a) income of $1.0 million ($0.8 million net of tax or $0.12 per diluted share) for a change in accounting estimate for product costs and operating expenses related to the Honeywell TSA and (b) income of $0.4 million ($0.3 million net of tax or $0.05 per diluted share) for change in accounting estimates for revenue subject to customer rebates under the Honeywell Agreement. Both of these changes in accounting estimates were the result of actual amounts billed and received differing from initial estimates.

(2) The fourth quarter of fiscal 2019 includes $0.1 million, or $0.01 per diluted share, of tax expense related to the enactment of the Tax Act.

(3) The fourth quarter of fiscal 2018 includes (a) income of $0.9 million ($0.7 million net of tax or $0.11 per diluted share) related to the change in fair value of the Company's contingent earn out liability; (b) expense of $42,000 ($36,000 net of tax or $0.1 per diluted share) related to the correction of a prior period error in the recording of the Honeywell transaction in the third quarter fiscal 2018 and (c) $1.1 million, or $0.16 per diluted share, of tax expense related to the enactment of the Tax Act.

(4) Certain amounts reported in the prior quarters have been reclassified to conform to the Company's current presentation at year-end.

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ASTRONOVA, INC.

SCHEDULE II—VALUATION AND QUALIFYING ACCOUNTS AND RESERVES

Description	Balance at Beginning of Year	Provision/ (Benefit) Charged to Operations	Deductions(2)	Balance at End of Year
Allowance for Doubtful Accounts(1):				
(In thousands)				
Year Ended January 31,				
2019	$ 377	$ 310	$ (166)	$ 521
2018	$ 266	$ 119	$ (8)	$ 377
2017	$ 404	$ (80)	$ (58)	$ 266

(1) The allowance for doubtful accounts has been netted against accounts receivable in the balance sheets as of the respective balance sheet dates.

(2) Uncollectible accounts written off, net of recoveries.

ASTRONOVA, INC.
2018 EQUITY INCENTIVE PLAN
NON-EMPLOYEE DIRECTOR
RESTRICTED STOCK AGREEMENT

This Restricted Stock Agreement ("Agreement") is made and entered into as of __________ (the "Grant Date"), by and between AstroNova, Inc. (the "Company"), and __________ (the "Recipient") pursuant to the Company's Amended and Restated Non-Employee Director Annual Compensation Program (the "Program"). This Agreement is and shall be subject in every respect to the provisions of the Company's 2018 Equity Incentive Plan, as amended from time to time (the "Plan") and the Program. The Program and the Plan are incorporated herein by reference and made a part hereof. The Recipient acknowledges that this Agreement shall be subject to all the terms and provisions of the Plan and the Program and agrees that (a) in the event of any conflict between the terms hereof and those of the Plan and/or Program, the terms of the Plan and/or Program shall prevail, and (b) all decisions under and interpretations of the Plan or Program by the Board or the Committee shall be final, binding and conclusive upon the Recipient and his or her heirs and legal representatives.

In consideration of the mutual promises and covenants contained in this Agreement, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Grant of Shares. Upon the execution of this Agreement, the Company shall issue to the Recipient, in consideration of the Recipient's Service to the Company as a member of the Board, subject to the terms and conditions set forth in this Agreement, __________ shares of common stock, $0.05 par value per share, of the Company ("Common Stock"). Such shares, together with any securities of the Company that may be issued in exchange for or in respect of the shares, whether by way of stock split, stock dividend, combination of shares, reclassification, recapitalization, reorganization or any other means, shall be referred to herein as the "Shares."

2. Vesting. The restrictions applicable to the Shares shall lapse and the Shares shall become "Vested Shares" on _______, subject to the Recipient continuing Service as a member of the Board.

3. Forfeiture of Unvested Shares. In the event that the Recipient ceases to serve as a member of the Board other than by reason of death or Disability ("Termination"), all of the Shares that have not become Vested Shares as of the date of Termination in accordance with the vesting schedule set forth in Section 2 above (any such shares, "Unvested Shares") and all rights therein shall immediately be transferred to the Company pursuant to Section 3 below, and as of the date of Termination the Recipient shall have no further rights with respect to such Shares; provided, however, in the event the Recipient ceases to serve as a member of the Board by reason of death or Disability (as defined in the Plan) or a Change in Control of the Company occurs during the Recipient's service as a member of the Board, any Unvested Shares shall be immediately vested and no longer subject to restrictions on Transfer (as defined below) hereunder.

4. Transfer of Unvested Shares to Company .

(a) The Recipient acknowledges and agrees that any certificate or other document evidencing any Shares shall be held by the Company until such Shares become Vested Shares. Promptly after any Shares become Vested Shares, the Company shall issue to the Recipient a certificate or other document evidencing such Vested Shares. The Recipient shall execute and deliver to the Company such number of stock assignments as and when the Company shall request, duly endorsed in blank, in the form requested by the Company. Upon Termination, the Unvested Shares shall be transferred to the Company, and the certificates or other documents evidencing the Unvested Shares shall be cancelled.

(b) From and after the date of Termination, the Company shall not pay any dividend to the Recipient on account of such Unvested Shares or permit the Recipient to exercise any of the privileges or rights as a stockholder with respect to the Unvested Shares, but shall, in so far as permitted by law, treat the Company as the owner of such Unvested Shares.

(c) No amount shall be payable to the Recipient with respect to Unvested Shares transferred to the Company pursuant to this Section 3.

5. Restrictions on Transfer. Except as may be permitted pursuant to a Change in Control and except in the case of economic hardship of the Recipient as determined by the Committee, the Recipient shall not sell, assign, transfer, pledge, hypothecate or otherwise dispose of, voluntarily or involuntarily, by operation of law or otherwise (collectively "Transfer") any Unvested Shares or any interest therein, except for Transfers to the Company pursuant to Section 3. In addition, the Recipient may not Transfer any of the Vested Shares unless and until the earlier of (a) the date on which the Recipient meets the ownership level of Common Stock specified for the Recipient in the Company's stock ownership and retention guidelines, as the same may be amended from time to time in the discretion of the Board and then only to the extent that such Transfer would not cause the Recipient to be out of compliance with such guidelines, and (b) the date on which Recipient is no longer subject to the Company's stock ownership and retention guidelines, as the same may be amended from time to time in the discretion of the Board. Any and all certificates representing shares of Common Stock issued hereunder shall have appropriate legends evidencing such transfer restrictions.

6. Effect of Prohibited Transfer . The Company shall not be required (a) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Agreement, or (b) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

7. Restrictive Legend . All certificates representing Shares shall bear a legend which refers to the restrictions imposed by this Agreement and the Plan and any applicable state or federal securities laws or regulations, and which legend is otherwise in such form as the Company may deem appropriate. All Shares registered in book-entry shall include stop transfer instructions consistent with such legends.

8. Adjustments for Recapitalizations and Other Transactions . The Shares issued pursuant to this Agreement shall be adjusted to reflect any recapitalizations, reorganizations or other changes in the Company's capital structure or its business, or any merger or consolidation of the Company, or any issue of stock, or any issue of bonds, debentures, preferred or prior preference stock or other capital stock ahead of or affecting the stock or the rights thereof, or the dissolution or liquidation of the Company, or any sale or transfer of all or any part of its assets or business, or any other corporate act or proceeding, whether of a similar character or otherwise pursuant to the provisions of Section 10 of the Plan.

9. Taxes. The Recipient understands and agrees that he or she will be fully liable for any federal, state or local taxes of any kind owed by him or her with regard to issuance of the Shares, whether owed at the time of transfer pursuant to the Recipient having made an election under Section 83(b) of the Internal Revenue Code of 1986, as amended (an "83(b) Election"), or at the time that the Shares vest pursuant to the vesting schedule set forth in Section 2 above.

9. 83(b) Election. The Recipient understands that it shall be his or her decision whether to make an 83(b) Election with respect to the Shares, and that if he or she chooses to make such election, it must be made within 30 days of the date of execution of this Agreement. The filing of a Section 83(b) election is solely the Recipient's responsibility, and if the Recipient chooses to make such an election with respect to issuance of the Shares, he or she must provide a copy of such election to the Company.

10. Dividends . Any dividend or Dividend Equivalents credited or payable with respect to any Unvested Shares shall be subject to the same restrictions and risk of forfeiture as the Unvested Shares and shall not be paid unless and until the such Shares become Vested Shares.

11. Miscellaneous .

(a) Severability . The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this agreement, and each other provision of this Agreement shall be severable and enforceable to the extent permitted by law.

(b) Binding Effect . This Agreement shall be binding and inure to the benefit of the Company and the Recipient and their respective heirs, executors, administrators, legal representatives, successors and assigns, subject to the restrictions on transfer set forth in Section 4 of this Agreement.

(c) Notice . Any notice to be given to the Company hereunder shall be deemed sufficient if addressed to the Company and delivered to the office of the Company 600 East Greenwich Avenue, West Warwick, Rhode Island 02893 or such other address as the Company may hereafter designate. Any notice to be given to the Holder hereunder shall be deemed sufficient if addressed to and delivered in person to the Holder at his or her address furnished to the Company or when deposited in the mail, postage prepaid, addressed to the Holder at such address.

(d) Amendment . This Agreement may be amended or modified only by a written instrument executed by both of the Company and the Recipient.

IN WITNESS WHEREOF, the parties hereto have executed this Restricted Stock Agreement as of the date first written above.

ASTRONOVA, INC.

By: ______________________________

Name:

Title:

____

Name:

Exhibit 21

LIST OF SUBSIDIARIES OF THE COMPANY

Name	Jurisdiction of Organization
AstroNova GmbH	Germany
AstroNova (Shanghai) Trading Co., Ltd	China
AstroNova Aerospace, Inc.	Delaware
ANI ApS	Denmark
TrojanLabel ApS	Denmark
AstroNova SAS	France
AstroDigital Data de México, S.A. de C.V.	Mexico

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statements (Nos. 333-143854, 333-204619, 333-225404 and 2-81081) on Form S-8 of AstroNova, Inc. of our report dated April 10, 2019, related to our audit of the consolidated financial statements, internal control over financial reporting and the financial statement schedule, which appear in this Annual Report on Form 10-K for the year ended January 31, 2019.

/s/ Wolf & Company, P.C.

Boston, Massachusetts
April 10, 2019

Exhibit 31.1

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

I, Gregory A. Woods certify that:

1. I have reviewed this annual report on Form 10-K of AstroNova, 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 annual 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 our 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 registrant's board of directors (or persons performing the equivalent function):

(a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date April 10, 2019

/s/ G REGORY A. W OODS

Gregory A. Woods
President and Chief Executive Officer
(Principal Executive Officer)

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

I, David S. Smith, certify that:

1. I have reviewed this annual report on Form 10-K of AstroNova, 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 annual 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 our 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 registrant's board of directors (or persons performing the equivalent function):

(a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date April 10, 2019

/s/ David S. Smith
David S. Smith
Vice President, Chief Financial Officer and
Treasurer (Principal Financial Officer and
Principal Accounting Officer)

Exhibit 32.1

AstroNova Inc.

**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**

In connection with the Annual Report of AstroNova, Inc. (the “Company”) on Form 10-K for the year ended January 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Gregory A. Woods, Chief Executive Officer, hereby certify, pursuant to Rule 13a-14(b) and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(a) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Dated this 10th day of April, 2019

/s/ GREGORY A. WOODS
Gregory A. Woods
President and Chief Executive Officer
(Principal Executive Officer)

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

Exhibit 32.2

AstroNova Inc.

**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**

In connection with the Annual Report of AstroNova, Inc. (the "Company") on Form 10-K for the year ended January 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, David S. Smith, Vice President, Chief Financial Officer and Treasurer, hereby certify, pursuant to Rule 13a-14(b) and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(a) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Dated this 10th day of April, 2019

/s/ David S. Smith
David S. Smith
Vice President, Chief Financial Officer and Treasurer
(Principal Financial Officer and Principal Accounting Officer)

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