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, 2020

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	Trading Symbol	Name of each exchange on which registered
Common Stock, $.05 Par Value	**ALOT**	**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 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 August 2, 2019 was approximately $158,496,000 based on the closing price on the Nasdaq Global Market on that date.

As of April 3, 2020, there were 7,097,000 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 2020 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 and related supplies sold under the brand names QuickLabel®, TrojanLabel® and GetLabels™. The T&M segment includes the Company's line of aerospace flight deck printers and test and measurement data acquisition systems sold under the AstroNova® brand name. Refer to Note 15, "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.

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 21 through 33 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.

Product Identification products sold under the QuickLabel, TrojanLabel and GetLabels brands are used in brand owner and commercial applications to provide product packaging, marketing, tracking, branding and labeling solutions to a wide array of industries. The PI segment offers a variety of digital color label tabletop printers, high-volume presses and specialty OEM printing systems, as well as a wide range of label, tag and flexible packaging material substrates and other supplies, including ink and toner, that allow customers to mark, track, protect and enhance the appearance of their products. In the T&M segment, the Company has a long history of using its technologies to provide networking systems and high-resolution light-weight flight deck and cabin printers for the aerospace market. In addition, the T&M segment includes data acquisition recorders, sold under the AstroNova brand, to 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.

Product Identification

AstroNova's PI segment includes three brands: QuickLabel, TrojanLabel, and GetLabels. Printers and supplies are sold to brand owners, manufacturers and retailers who label or mark products on a short to mid-size run basis. AstroNova PI customers benefit from the efficiency, flexibility and cost-savings of digitally printing labels in their facility, on-demand, with the ability to accommodate multiple SKUs or variable data such as bar codes, lot numbers or expiration dates. QuickLabel brand products include tabletop printers, production-ready digital color label printers and specialty OEM printing systems for either standalone output or inline integration with existing pre-processing and finishing systems. Customers use the Company's digital label printer products in a wide variety of industries, including chemical, cosmetics, food and beverage, medical products, nutraceutical, pharmaceutical, and many others. TrojanLabel expands the Company's customer market by providing a range of higher volume digital color printers, OEM printing systems and supplies that target the more demanding needs of commercial printers, label converters and packaging manufacturers, giving them the ability to digitally mark or encode products directly or to produce labels for post printing applications. GetLabels brand products include a full line of media supplies, including label materials, tags, inks, toners and thermal transfer ribbons designed for optimal performance with the Company's printing hardware. In addition, GetLabels media is compatible with a wide variety of competitive and third-party printing hardware.

Current QuickLabel models include a selection of professional tabletop digital color label printers. The high-speed QL-120X was built on AstroNova's pioneering and successful Kiaro! platform. Introduced early in 2019, the high-performance QL-300 was the first 5-color toner-based electrophotographic tabletop production label printer in the market. In addition, our QuickLabel line of printers includes the QL-850, our next-generation wide-format inkjet color label printer, the QL-30 and QL-60 series, a family of high-end monochrome printers, and the QLS-4100 XE, a unique solution with the ability to digitally print full color labels and tags using thermal transfer ribbon technology.

Our TrojanLabel portfolio includes a range of products from professional digital color label mini-presses to large-scale all-in-one inline specialty printing systems. The T2-C, a compact, digital mini-press designed for 24/7 label production, includes numerous differentiating features for several end-use market applications. The T2-L is a narrow format digital press designed specifically for flexible packaging substrates. Beyond label printing, the T3-OPX, introduced in late 2019, allows printing directly onto a range of flat products, including cardboard, paper bags, flat wood planks and many other items using pigment inks that are water-resistant and highly resistant to UV exposure. A professional label press and finishing system, the T4, enables print, die-cut, and lamination in an all-in-one machine with a much smaller footprint than others in the market. Expanding on the T4 with additional features, the T5 incorporates capabilities of a compact converter unit featuring UV varnish, lamination, rotary die-cutting, slitting and waste removal to offer an all-in-one digital print and finish inline labeling solution.

GetLabels provides a broad range of high-quality supplies for both AstroNova printers and third-party printers. Supplies include label and tag materials, inks, toner and thermal transfer material. Label materials and substrates are specifically designed and constructed for a wide variety of labeling applications. Each label material and substrate is qualified and tested in our on-site Materials Research Laboratory to ensure durability and compatibility with our QuickLabel and TrojanLabel branded products, along with a variety of third-party printers.

The PI segment additionally develops and licenses various specialized software used to design and manage labels and print images, as well as manage and operate our printers and presses and coordinate printing on an automated basis directly over networked systems. PI also provides worldwide training and support.

T&M

Products sold under AstroNova's T&M segment are designed and manufactured for airborne printing solutions and for data acquisition. AstroNova's aerospace applications include flight deck printing solutions, networking hardware and thermal paper. The Company's data acquisition systems are used in research and development, flight testing, missile/rocket telemetry production monitoring and maintenance applications. These products are sold to customers in a variety of industries, including aerospace & defense, automotive, commercial airline, energy, manufacturing and transportation, to meet the need to acquire and record data from local and networked data streams and sensors.

Airborne printers include the Company's flagship ToughWriter® series used in the flight decks and cabins 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 information, 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. In addition to the ToughWriter products, the Company manufactures other flight deck printers, including Miltope-brand and RITEC-brand airborne printers that the Company acquired in 2015 and 2014, respectively, and the PTA-45 cockpit printer. The PTA-45B is subject to the Asset Purchase and Licenses Agreement with Honeywell International, Inc. (the "Honeywell Agreement"), pursuant to which in 2017 the Company acquired an exclusive perpetual world-wide license to manufacture and support Honeywell's narrow-format flight deck printers for the Boeing 737 and Airbus 320 aircraft. Over time we expect that customers will chose to replace those printers with ToughWriter products because they have numerous technical features and functional advantages and significant weight savings.

Other T&M products include: the TMX® all-in-one high speed data acquisition system for applications requiring high channel counts and acquisition rates, the Daxus® DXS-100 distributed data acquisition platform, the SmartCorder® DDX-100, a portable all-in-one data acquisition system for facilities maintenance and field testing and the Everest® EV-5000 digital strip chart recording system used mainly in telemetry applications. The Daxus DXS-100 can be connected to the SmartCorder 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 or printing the data on hard copy, monitor or electronic storage media and (4) analyzing the data. To service data visualization, AstroNova maintains technological core competencies and trade know-how concerning the subject matter peculiar to each business unit. The technological disciplines are diverse and contain aspects of electronic, software, mechanical and industrial engineering. Additionally, AstroNova possesses engineering expertise in the areas of digital signal processing, image processing, fluidics, color theory, high-speed material handling and design for airworthiness.

Patents and Copyrights

We hold several 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. We consider our intellectual property to be important to the operation of our business. In particular, we believe that the loss of the trademarks QuickLabel, TrojanLabel, ToughWriter or ToughSwitch or the loss of the license provided under the Honeywell Agreement could have a material adverse impact 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 certain specialty printed circuit board assemblies and harnesses, and we have extensive electronic and mechanical final assembly and test operations. Many parts not manufactured in-house are standard electronic items available from multiple sources. Other printers and parts are designed or modified by us and manufactured by outside vendors according to our specifications. 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 the majority of these sole or limited source components, assembled 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. When circumstances cause us to anticipate that the Company may not be able to acquire such components, products or supplies on a timely basis, the Company's practice is to procure a sufficient quantity in advance. In the past we have made such advance purchases primarily for aerospace products and in quantities that we anticipate will suffice for the life of the aircraft program for which those printers are designed.

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, a market leader in flight deck printers, and an innovator in digital color mini-press systems. In the data acquisition area, we are one of the leaders in general-purpose portable, high-speed data acquisition systems.

Our management believes that we have a market leadership position in many of the markets we serve. We retain our leadership position by virtue of proprietary technology, product reputation, delivery, our channels to market, technical assistance and service to customers. The number of competitors varies by product line. 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 Test & Measurement products. We also have direct field sales or service centers in Canada, China, Denmark, France, Germany, Malaysia, Mexico, Singapore, and the United Kingdom staffed by our own employees and dedicated third party contractors. Additionally, we utilize over 225 independent dealers and representatives selling and marketing our products in over 60 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, 2020 and 2019 was $25.2 million and $25.6 million, respectively.

Employees

As of January 31, 2020, we employed 365 people. We are generally able to satisfy our employment requirements. No employees are represented by a union. We believe that our 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 filing 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.

The ongoing COVID-19 pandemic may adversely affect our revenues, results of operations and financial condition.

Our business could be materially adversely affected by the widespread outbreak of contagious disease, including the recent outbreak of respiratory illness caused by a novel coronavirus known as COVID-19. COVID-19 has been declared by the World Health Organization to be a "pandemic" and has spread to many of the countries in which we, our customers, our suppliers and our other business partners do business. National, state and local governments in affected regions have implemented and may continue to implement safety precautions, including quarantines, travel restrictions, business closures, cancellations of public gatherings and other measures. Other organizations and individuals are taking additional steps to avoid or reduce infection, including limiting travel and staying home from work. These measures are disrupting normal business operations both in and outside of affected areas and have had significant negative impacts on businesses and financial markets worldwide.

We continue to monitor our operations and government recommendations and have made modifications to our normal operations because of the COVID-19 outbreak, including requiring most non-production related team members to work remotely. We have maintained a substantial portion of our manufacturing operational capacity at our manufacturing facilities located in West Warwick, Rhode Island, as well as our manufacturing facilities in Canada and Germany, at this time, and we have instituted heightened cleaning and sanitization standards and several health and safety protocols and procedures to safeguard our team members.

However, the COVID-19 outbreak has caused the Company to experience a number of adverse impacts, including reductions in demand for its products, delays and cancellations of orders for its products, difficulties in obtaining raw materials and components for its products, shortages of labor to manufacture products, inefficiencies caused by remote worker's difficulties in performing their normal work outputs, closures of the facilities of some of its suppliers and customers, and delays in collecting accounts receivable.

While it is not possible at this time to estimate the entirety of the impact that COVID-19 will have on our business, customers, suppliers or other business partners, we expect that the continued spread of COVID-19, the measures taken by the governments of affected countries, actions taken to protect employees, and the impact of the pandemic on all business activities to further adversely impact our operational capacity and the efficiency of our team members and will materially adversely affect our results of operations and financial condition.

Disruptions in the capital markets as a result of the COVID-19 outbreak may also adversely affect the Company if these impacts continue for a prolonged period and the Company needs additional liquidity.

The aerospace industry, which we serve through our aerospace product line, has been significantly disrupted by the COVID-19 outbreak, both inside and outside of the United States. The impact of the decline in air travel will likely have a material adverse impact on the Company's financial results, the scope of which cannot be estimated at this time. Should one of more of our airplane OEM manufacturing customers or a significant number of airline customers fail to continue business as a going concern or declare bankruptcy, or otherwise reduce the demand for our products as a result of the impact of the COVID-19 pandemic crisis, it would have a material adverse impact on our business operations and financial results.

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. For example, the current grounding and suspension of production of the Boeing 737 MAX has reduced demand for our airborne printers that are placed on that aircraft, as well as the related repairs and supplies, and that has negatively affected our results of operations. In addition, the current worldwide COVID-19 pandemic has negatively impacted the airline industry as a whole, which could result in a reduction in orders by the airlines for new planes and reduce demand for retrofitting airplanes already in service and, therefore, a further reduction in demand for our airborne printer products. The effect of the COVID-19 pandemic and any future action relating to the 737 MAX on our business is currently unknown, but we expect any resulting changes in production schedules will likely have an adverse effect on our business, which could be material. 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 data recorder products. Failure to meet our customers' changing business needs or 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:

- Disruptions in the global supply chain as a result of the COVID-19 outbreak;
- 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 or provide these products in required volumes or fails to meet our quality standards, we will have to identify qualified alternate subcontractors or 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. For example, due to the recent outbreak of COVID-19, there has been and likely will continue to be disruption to our supply chain due to the delays of component shipments from our vendors in China and other jurisdictions in which normal business operations are disrupted. 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, especially in the markets in which we sell our PI printers and T&M data acquisition products. This competition is 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 based on 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 or services 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, our customers could seek alternative solutions from our competitors and we could lose market share, 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 reducing our labor cost-to-revenue ratio, improving process and system efficiencies and outsourcing certain 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's inability to adequately enforce and protect our intellectual property, defend against assertions of infringement or lose certain licenses could prevent or restrict our ability to compete.

We rely on patents, trademarks, licenses, and proprietary knowledge and technology, both internally developed and acquired, in order to maintain a competitive advantage. Our competitors may develop technologies that are similar or superior to the Company's proprietary technologies or design technologies around the intellectual property protections or licenses that the Company currently owns. The loss of the trademarks QuickLabel, TrojanLabel, ToughWriter and ToughSwitch or the loss of the licenses provided under the Honeywell Agreement could have a material adverse impact on our business taken as a whole. Operating outside the United States also exposes us to additional intellectual property risk. The laws and enforcement practices of certain jurisdictions in which we operate do not protect our intellectual property rights to the same extent as in the United States. Any diminution in our ability to defend against the unauthorized use of these rights and assets could have an adverse effect on our results of operations and financial condition. Litigation may be necessary to protect our intellectual property rights or defend against claims of infringement, which could result in significant costs and divert our management's focus away from operations.

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, as well as prolonged reduced demand for the Company's products due to the COVID-19 outbreak, could have an impact on the value of inventory and adversely affect 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 37% of our total revenue for fiscal year 2020, and we anticipate that international sales will continue to account for a significant portion of our revenue. In addition, we have employees, suppliers, contractors 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, war and public health disruptions, such as that caused by the current COVID-19 outbreak.

Brexit

The U.K. formally left the E.U. on January 31, 2020 and has entered a transition period until December 31, 2020. During the transition period, the U.K. and the E.U. will seek to negotiate a trade deal, and the U.K. will remain in both the E.U. customs union and single market. The announcement of Brexit caused significant volatility in global stock markets and currency exchange rate fluctuations that resulted in the strengthening of the U.S. dollar against the foreign currencies in which we conduct business. The withdrawal of the U.K. from the E.U. may also create further global economic uncertainty, which may adversely impact the economies of the U.K., the E.U. countries and other nations. Brexit could subject us to disruptions in trade and the free movement of goods, services and people to and from the UK, increased foreign exchange volatility with respect to the British pound and disruptions to our workforce and that of our suppliers and business partners.

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 we employ, and may have unknown 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 and may divert the attention of engineering personnel from product development efforts which 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 customers, 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 customers, 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.

As a global company, we are subject to taxation in numerous countries, states and other jurisdictions. As a result, our effective tax rate is based on the tax rates in effect where we operate. In preparing our financial statements, we estimate the amount of tax that will become payable in each jurisdiction. Our effective tax rate may vary as a result of numerous factors, including changes in the mix of our profitability from jurisdiction to jurisdiction, the results of examinations and audits of our tax filings, whether we secure or sustain acceptable arrangements with tax authorities, adjustments to the value of our uncertain tax positions, changes in accounting for income taxes and changes in tax laws, including the 2017 U.S. Tax Cuts and Jobs Act (the “Tax Act”). Any of these factors could cause us to experience an effective tax rate significantly different from previous periods or our current expectations.

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 effect on our business, results of operations, financial condition and cash flow.

Further changes in the tax laws of foreign jurisdictions could arise as a result of the base erosion and profit shifting (BEPS) project undertaken by the Organisation for Economic Co-operation and Development (OECD), which represents a coalition of member countries. On October 5, 2015, the OECD issued a series of reports recommending changes to numerous long-standing tax principles. Many of these recommendations or similar concepts are being adopted by various countries in which we do business and may increase our taxes in these countries. Changes to these and other areas in relation to international tax reform, including future actions taken by foreign governments in response to the Tax Act, could increase uncertainty and may adversely affect our tax rate and cash flow in future years.

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.

We may have exposure to additional tax liabilities, which could negatively impact our income tax expense, net income and cash flow.

We are subject to income and other taxes in both the U.S. and the foreign jurisdictions in which we operate. The determination of our worldwide provision for income taxes and current and deferred tax assets and liabilities requires significant judgment and estimation. In the ordinary course of our business, there are many transactions and calculations where the ultimate tax determination is uncertain. We are subject to regular review and audit by both domestic and foreign tax authorities and to the prospective and retrospective effects of changing tax regulations and legislation. Although we believe our tax estimates are reasonable, the ultimate tax outcome may materially differ from the amounts recorded in our consolidated financial statements and may materially affect our income tax benefit or expense, net loss or income, and cash flows in the period in which such determination is made. As of January 31, 2020, we did not record any liabilities for uncertain tax positions.

Deferred tax assets are recognized for the expected future tax consequences of temporary differences between the carrying amount for financial reporting purposes and the tax bases of assets and liabilities, and for net operating losses and tax credit carry forwards. In some cases, we may record a valuation allowance to reduce our deferred tax assets to estimated realizable value. We review our deferred tax assets and valuation allowance requirements quarterly. If we are unable to demonstrate that it is more likely than not that we will not be able to generate sufficient future taxable income to realize the net carrying value of deferred tax assets, we will record a valuation allowance to reduce the deferred tax assets to estimated realizable value, which could result in a material income tax charge. As part of our review, we consider positive and negative evidence, including cumulative results of recent years.

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

The credit agreement governing our credit facility with Bank of America, N.A., as amended, contains, and any future debt agreements may include, several 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.

Our credit agreement with Bank of America also requires 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 specifically because of the decline in revenue caused by the demand for aircraft cockpit printers for the 737 MAX, the anticipated decline in revenue due to the demand for aircraft due to the current COVID-19 pandemic driven decline in revenue passenger miles, as well as the likely decline in demand for some of our PI and other T&M products as a result of the COVID-19 driven slowdown in general economic activity. At this time, we expect that it is likely that we will violate the current terms of our credit agreement with Bank of America at the end of our first or second quarter of fiscal year 2021. While we expect to be able to renegotiate the terms of the credit agreement, if we are unable to do so or to secure alternative financing on acceptable terms, it will have a material adverse impact on us. 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, results of operations and financial condition could be adversely affected.

In addition, the agreement governing our credit facility permits us to elect to pay interest on our revolving line of credit based on LIBOR or a base rate as specified in the agreement. We also have term loans under our credit facility, as well as derivative instruments with variable interest rates, that are indexed to LIBOR. In July 2017, the Financial Conduct Authority, the authority that regulates LIBOR, announced that it intends to stop compelling banks to submit rates for the calculation of LIBOR after 2021. The Alternative Reference Rates Committee ("ARRC") has proposed the Secured Overnight Financing Rate (SOFR) as the preferred alternative to U.S. Dollar LIBOR ("USD-LIBOR") for use in debt instruments, derivatives and other financial contracts that are currently indexed to USD-LIBOR. ARRC has proposed a paced market transition plan to SOFR from USD-LIBOR, and organizations are currently working on an industry wide and/or company specific transition from LIBOR to an alternative that will not result in financial market disruptions, significant increases in benchmark rates or financing costs to borrowers. It is not possible to predict the effect of these changes, other reforms or the establishment of alternative reference rates in the United States or elsewhere. To the extent these changes cause the interest rates on our borrowings to increase, our interest expense will increase, which could adversely affect our financial condition, operating results and cash flows.

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. 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 an 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 2020, we had approximately $4.2 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 such as those caused by the current COVID-19 outbreak 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 security breach 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 proprietary or confidential information regarding our customers, employees, suppliers and others including personally identifiable information, credit card data, and other confidential information. 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 our operations to one global enterprise resource planning ("ERP") system. The ERP system is designed to improve the efficiency of our supply chain and financial transaction processes, improve the efficiency of how we accurately maintain our books and records and enhance the speed and quality of information provided to our management team for use in the operation and management of our business. The implementation of the ERP system will continue to require significant investment of human and financial resources. As a result of the COVID-19 outbreak, we will experience delays and increased costs as factors such as limited on-site availability of Company personnel and outside consultants due to travel restrictions and remote work conditions, as well as a redirection of personnel efforts toward responding to the COVID-19 outbreak from the implementation of the new ERP system. Significant disruption in the implementation and transition to the new ERP system as a result of the COVID-19 outbreak could negatively impact our ability to obtain the benefits that the new ERP system is intended to bring. The length of these delays and the related cost are unknown because of the uncertainty of the duration of the COVID-19 pandemic crisis. Additionally, any significant disruption or deficiency in the design, implementation and transition to the new ERP system 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 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.

As the result of the COVID-19 pandemic crisis, we have been required by U.S. federal and state governmental authorities and governmental authorities in non-U.S. jurisdictions, as well as our own desire to adhere to best health and safety practices, to implement a number of policies and procedures that have increased our costs and added complexity and inefficiency to our manufacturing operations and all administrative and office-based functions.

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 federal, state, local, and international laws and regulations 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.

We also expect that there will continue to be new laws, regulations, and industry standards concerning privacy, data protection, and information security proposed and enacted in various jurisdictions. 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. Similarly, the California Consumer Privacy Act of 2018 , which was enacted in June 2018 and came into effect on January 1, 2020, provides a new private right of action for data breaches and requires companies that process information on California residents to make new disclosures to consumers about their data collection, use and sharing practices and allow consumers to opt out of certain data sharing with third parties.

Additionally, other jurisdictions have enacted or are enacting data localization laws that require data generated in or relating to the residents of those jurisdictions to be physically stored within those jurisdictions. In many cases, these laws and regulations apply not only to transfers between unrelated third parties but also to transfers between the Company and its subsidiaries. All of these evolving compliance and operational requirements impose significant costs that are likely to increase over time.

While we continue to assess these requirements and the ways they may impact the conduct of our business, we believe that we materially comply with applicable laws and industry codes of conduct relating to privacy and data protection. 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 we are found not to be in compliance with such laws or codes of conduct.

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, whether as result of the COVID-19 outbreak, the 737 MAX grounding or otherwise, 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.

Inadequate self-insurance accruals or insurance coverage for employee health care benefits, could have an adverse effect on our business, financial results or financial condition.

In the U.S., we maintain an employee health insurance coverage plan on a self-insured basis backed by stop-loss coverage which sets a limit on our liability for both individual and aggregate claim costs. We record expenses based on actual claims incurred and estimates of the costs of expected claims, administrative costs, and stop-loss insurance premiums.

We record a liability for our estimated cost of U.S. claims incurred and unpaid as of each balance sheet date. Our estimated liability is recorded on an undiscounted basis and is based on historical trends. Our history of claims activity is closely monitored, and liabilities are adjusted as warranted based on changing circumstances. It is possible, however, that our actual liabilities may exceed our estimates of loss. We may also experience an unexpectedly large number of claims that result in costs or liabilities in excess of our projections, which could cause us to record additional expenses, which could adversely impact our business, financial condition, results of operations and cash flow. We believe, that the liabilities we have recorded to date will be sufficient to provide for losses we may incur due to increased COVID-19 related employee health care insurance costs. However, the ultimate amount of these costs cannot be estimated at this time, and a prolonged period of spread of the disease could further increase our costs and liabilities, the impact of which may be material.

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.

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, United States	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
Copenhagen, Denmark	4,800	R&D, sales and service
Brossard, Quebec, Canada	4,500	Manufacturing, sales and service
Elancourt, France	4,150	Sales and service
Schaumburg, Illinois, United States	3,428	Sales (Product Identification only)
Irvine, California, United States	3,100	Sales (Product Identification only)
Shah Alam, Selangor, Malaysia	2,067	Sales (Product Identification only)
Mexico City, Mexico	1,023	Sales (Product Identification only)
Maidenhead, England	1,021	Sales and service
Shanghai, China	461	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*

We are not a party to any pending, material legal proceedings. However, because of the nature of our business, we may be subject in the future to lawsuits or other claims, including those pertaining to product liability, patent infringement, commercial, employment, employee benefits, environmental and stockholder matters**.**

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 252 shareholders of record as of April 3, 2020, which does not reflect shareholders with beneficial ownership in shares held in nominee name.

Stock Repurchases

During the fourth quarter of fiscal 2020, 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	—	—	—	—
December 1 – December 31	—	—	—	—
January 1 – January 31	1,870(a)	12.71(a)	—	—

(a) An executive of the company delivered 1,870 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 $12.71 per share and are included with treasury stock in the consolidated balance sheet.

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

Historical Financial Summary

Income Statement Data

(In thousands, except per share data)	For the Fiscal Years Ended January 31,				
	2020	2019	2018	2017	2016
Revenue	$ 133,446	$ 136,657	$ 113,401	$ 98,448	$ 94,658
Gross profit	48,758	53,999	44,002	39,489	38,158
Operating income	2,433	8,720	5,412	6,281	5,934
Income before taxes	1,370	7,308	5,157	6,605	6,909
Net income	$ 1,759	$ 5,730	$ 3,286	$ 4,228	$ 4,525
Net Income per Common Share—Basic	$ 0.25	$ 0.83	$ 0.48	$ 0.57	$ 0.62
Net income per Common Share—Diluted	$ 0.24	$ 0.81	$ 0.47	$ 0.56	$ 0.61
Dividends Declared per Common Share	$ 0.28	$ 0.28	$ 0.28	$ 0.28	$ 0.28

Balance Sheet Data

(In thousands)	As of January 31,				
	2020	2019	2018	2017	2016
Cash and Marketable Securities	$ 4,249	$ 7,534	$ 11,688	$ 24,821	$ 20,419
Current Assets	60,151	62,608	62,948	61,423	54,514
Total assets	116,664	118,983	122,313	83,665	77,963
Revolving Credit Facility	6,500	1,500	—	—	—
Current liabilities	26,767	24,665	25,912	11,985	9,548
Debt, including short term portion	13,034	18,242	23,372	—	—
Shareholders' equity	$ 71,375	$ 69,775	$ 63,647	$ 70,537	$ 67,373

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. We market and sell our products and services through the following two segments:

- Product Identification ("PI") – offers color and monochromatic digital label printers, over-printers and custom OEM printers. PI also offers software to design, manage and print labeling and packaging images locally and across networked printing systems, as well as all related printing supplies such as pressure sensitive labels, tags, inks, toners and thermal transfer ribbons used by digital printers. PI also provides on-site and remote service, spare parts and various service contracts.
- Test and Measurement ("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 acquired data is processed and analyzed and then stored and presented in various visual output formats. The T&M segment 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, clearances, 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 2020, 2019 and 2018, revenue from customers in various geographic areas outside the United States, primarily in Western Europe, Canada and Asia, amounted to $49.8 million, $53.0 million and $43.6 million, respectively.

We maintain an active program of product research and development. During fiscal 2020, 2019 and 2018, we spent $8.1 million, $7.8 million and $7.5 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.

In fiscal 2018, AstroNova entered into an Asset Purchase and License Agreement ("Honeywell Agreement") with Honeywell International, Inc. ("Honeywell") pursuant to which, the Company acquired the exclusive perpetual world-wide license to manufacture Honeywell's narrow format flight deck printers for the Boeing 737 and Airbus 320 aircraft.

In March 2019 all major civil aviation authorities worldwide grounded the Boeing 737 MAX aircraft for safety reasons. In April 2019 Boeing reduced the number of aircraft produced per month from 52 to 42, and in January 2020, Boeing ceased production of the 737 MAX completely. AstroNova manufactures all three certified printer models in the Boeing catalog for the 737 MAX. The printer on the 737 MAX is buyer furnished equipment (BFE), which means the aircraft purchaser can choose which printer to have installed in the aircraft. Because the printer is BFE the purchaser of the aircraft purchases the printer directly from AstroNova and AstroNova delivers it to Boeing for installation on their aircraft. In some cases, a 737 MAX purchaser may choose to have the aircraft delivered without a printer. In such cases a printer can be added to the aircraft after delivery. Our records indicate that the vast majority of new 737 MAX of aircraft are delivered with one of our printers installed by Boeing. In addition to the drop off in orders for new aircraft printers, the 737 MAX grounding has negatively impacted our overall 737 printer upgrade business because operators have fewer available aircraft, so they are not in a position to take older model 737s out of service for upgrades. The grounding of the 737 MAX aircraft has also resulted in a reduced demand for aviation printer paper. These factors, in combination, had a material adverse impact on our revenues and profitability for fiscal 2020. At this time, it is not known when the Boeing 737 MAX will be certified for return to service, and it is also not known when Boeing will resume manufacturing and delivery. We expect that when manufacturing and delivery schedules are known, customers will begin to order printers from us for those aircraft. We also expect that the adverse impact on our revenue and profitability will continue until customer demand recovers. At this time, we believe that the demand for this aircraft will ultimately recover and further grow and we are making our operating decisions on that basis.

On March 11, 2020, the World Health Organization announced that COVID-19, a respiratory illness, caused by a novel coronavirus is a pandemic. COVID-19 has spread to many of the countries in which we, our customers, our suppliers and our other business partners conduct business. Governments in affected regions have implemented, and may continue to implement, safety precautions which include quarantines, travel restrictions, business closures, cancellations of public gatherings and other measures as they deem necessary. Many organizations and individuals, including the Company and its employees are taking additional steps to avoid or reduce infection, including limiting travel and staying home from work. These measures are disrupting normal business operations both in and outside of affected areas and have had significant negative impacts on businesses and financial markets worldwide.

We continue to monitor our operations and government recommendations and have made modifications to our normal operations because of the COVID-19 outbreak, including requiring most non-production related team members to work remotely. We have maintained a substantial portion of our manufacturing operational capacity at our primary manufacturing facilities located in West Warwick, Rhode Island, as well as in our manufacturing facilities in Canada and Germany, at this time, and we have instituted heightened cleaning and sanitization standards and several health and safety protocols and procedures to safeguard our team members.

The COVID-19 outbreak has caused the Company to experience a number of adverse impacts, including reductions in demand for its products, delays and cancellations of orders for its products, difficulties in obtaining raw materials and components for its products, shortages of labor to manufacture products, inefficiencies caused by remote worker's difficulties in performing their normal work outputs, closures of the facilities of some of its suppliers and customers, delays in collecting accounts receivable. Disruptions in the capital markets as a result of the COVID-19 outbreak may also adversely affect the Company if these impacts continue for a prolonged period and the Company needs additional liquidity.

The rapid development and uncertainty of the impacts of the COVID-19 pandemic precludes any prediction as to the ultimate adverse impact of the COVID-19 outbreak on the Company's business. However, COVID-19 and the measures taken to contain it present material uncertainty and risk with respect to the Company's performance and financial results. In particular, the aerospace industry, which the Company serves through its aerospace printer product line, has been significantly disrupted by the COVID-19 outbreak, both inside and outside of the United States. The decline in air travel and the impact of that decline on demand for our products from our airplane manufacturing customers, the airlines to which we sell directly and through the manufacturers, and the repair and overhaul market and the market for the paper consumed in the printers, could have a material adverse impact on the company's financial results.

We have reduced direct labor staffing levels in our aerospace manufacturing operations modestly, but the bulk of our expenses related to the aerospace product lines business will be unchanged because of the continued need to support our customers, and to provide the required sales, engineering, quality, and regulatory compliance and audit activities (among others) necessary to support the rest of the aerospace product line business.

Results of Operations

Fiscal 2020 compared to Fiscal 2019

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

($ in thousands)	2020			2019	
	Revenue	As a % of Total Revenue	% Change Over Prior Year	Revenue	As a % of Total Revenue
Product Identification	$ 88,116	66.0%	1.5%	$ 86,786	63.5%
T&M	45,330	34.0%	(9.1)%	49,871	36.5%
Total	$133,446	100.0%	(2.3)%	$136,657	100.0%

Net revenue in fiscal 2020 was $133.4 million, a 2.3% decrease compared to net revenue of $136.7 million for fiscal 2019. Current year revenue through domestic channels was $83.7 million, consistent with fiscal 2019 domestic revenue. International revenue of $49.8 million for fiscal 2020 decreased 6.1% compared to prior year international revenue of $53.0 million. Fiscal 2020 international revenue reflects an unfavorable foreign exchange rate impact of $1.4 million, compared to a favorable impact of $0.6 million in fiscal 2019. International revenue declined primarily due to lower sales of Product Identification supplies in Europe.

Hardware revenue in fiscal 2020 was $49.0 million, a $4.2 million, or 8.0%, decrease compared to fiscal 2019 revenue of $53.2 million. The current year decrease in hardware revenue is primarily related to the decline in the aerospace printer product lines as a result of the effects of the Boeing 737 MAX grounding. This decline of aerospace printer hardware sales in the T&M segment was offset by a modest increase in sales of data acquisition recorders and other aerospace printers. The overall decline in hardware revenue for the current year was also attributable to the decline in sales in the PI segment of certain older model QuickLabel printers such as the QL-120 and QL-800, tempered by the product launch of the new QL-300 and QL-850 printers and increased sales of the TrojanLabel printers.

Revenue from supplies in fiscal 2020 was $71.8 million, representing a $ 0.6 million, or 0.8%, increase compared to fiscal 2019 supplies revenue of $71.2 million. The dollar increase is primarily attributable to growth from Product Identification inkjet printer supplies. The current year increase in supplies revenue is tempered by older model lower thermal transfer and electrophotographic printer supplies revenue in the Quick Label product line, as well as a decline in revenue from the sale of specialized aerospace printer paper in the T&M segment.

Service and other revenue in fiscal 2020 was $12.6 million, a 3.1% increase compared to fiscal 2019 service and other revenue of $12.3 million. The current year increase is primarily due to the increase in parts sales and service revenue in the PI segment as a result of the increase in the installed base of printers. The current year increase in parts revenues in the AstroNova aerospace product line and increase in customer demand for parts in the data recorder product line in the T&M segment also contributed to the current year increase in service and other revenue.

Gross profit was $48.8 million for fiscal 2020, reflecting a 9.7% decline compared to fiscal 2019 gross profit of $54.0 million. The Company’s gross profit margin of 36.5% in fiscal 2020 reflects a decrease compared to fiscal 2019 gross profit margin of 39.5%. The lower gross profit for the current year compared to the prior year is primarily attributable to a decline in revenue as well as higher period costs and adverse product mix.

Operating expenses for the current year were $46.3 million, representing a 2.3% increase from the prior year’s operating expenses of $45.3 million. Specifically, selling and marketing expenses of $26.9 million in fiscal 2020 increased 2.1% from the prior year amount of $26.3 million. The increase in selling and marketing expenses for the current year is due primarily to increases in wages and outside services expense which were slightly offset by lower employee benefits and commission expenses. Selling and marketing expenses represent 20.1% and 19.3% of net revenue for fiscal 2020 and 2019, respectively. Current year general and administrative (“G&A”) expenses increased by 2.1% from the prior year to $11.4 million, primarily as a result of an increase in expenses for outside services and professional fees. The current year increase in G&A is partly offset by lower bonuses and share-based compensation. Research & development (“R&D”) costs in fiscal 2020 of $8.1 million increased 3.5% from $7.8 million in fiscal 2019 primarily due to an increase in outside service expenses which were partially offset by lower bonus expenses in fiscal 2020. The R&D spending level for fiscal 2020 represents 6.1% of net revenue, an increase compared to the prior year level of 5.7%.

Other expense in fiscal 2020 was $1.1 million compared to $1.4 million in fiscal 2019. Current year other expense includes interest expense on debt of $0.8 million and foreign exchange loss of $0.5 million, offset by investment and other income of $0.1 million. Other income in fiscal 2019 included interest expense on debt of $0.9 million and a foreign exchange loss of $0.7 million, offset by investment income and other of $0.2 million.

Net income for fiscal 2020 was $1.8 million, or $0.24 per diluted share, a decrease compared to $5.7 million, or $0.81 per diluted share in fiscal 2019. Prior year results were impacted by $0.1 million, or $0.01 per diluted share, in taxes as a result of the Company’s finalization of its accounting for the 2017 Tax Act. During fiscal 2020 the Company recognized a $0.4 million income tax benefit and had an effective tax rate of negative 28.4% compared to an income tax provision of $1.6 million, or a 21.6% effective tax rate for fiscal 2019. The decrease in the fiscal 2020 tax rate as compared to fiscal 2019 is primarily related to lower pre-tax income. Specific items decreasing the effective tax rate in fiscal 2020 include foreign derived intangible income, the release of ASC 740 liabilities, foreign tax credit utilization, and return to provision adjustments. This decrease was offset by valuation allowances recorded on unbenefited losses in China and on carryforward foreign tax credits expected to expire unused.

Fiscal 2019 compared to Fiscal 2018

For a comparison of our results of operations for the fiscal years ended January 31, 2019 and January 31, 2018, see “Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of

Operations" of our annual report on Form 10-K for the fiscal year ended January 31, 2019, filed with the SEC on April 10, 2019.

Segment Analysis

We report two segments consistent with our product revenue groups: PI and 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		
	2020	2019	2018	2020	2019	2018	2020	2019	2018
PI	$ 88,116	$ 86,786	$ 81,681	$ 7,509	$ 7,910	$10,561	8.5%	9.1%	12.9%
T&M	45,330	49,871	31,720	6,281	11,933	3,754	13.9%	23.9%	11.8%
Total	$133,446	$136,657	$113,401	13,790	19,843	14,315	10.3%	14.5%	12.6%
Corporate Expenses				11,357	11,123	8,903			
Operating Income				2,433	8,720	5,412			
Other Expense, Net				(1,063)	(1,412)	(255)			
Income Before Income Taxes				1,370	7,308	5,157			
Income Tax Provision (Benefit)				(389)	1,578	1,871			
Net Income				$ 1,759	$ 5,730	$ 3,286			

Product Identification

Revenue from the PI segment increased 1.5% in fiscal 2020 with revenue of $88.1 million compared to revenue of $86.8 million in the prior year. The current year increase is primarily attributable to growth in demand for ink jet supplies for both the QuickLabel and Trojan Label product lines. Also contributing to the increase in revenue for the current year was an increase in service and parts revenue. Hardware revenue in the PI segment declined slightly compared to the prior year; however, the segment did experience a significant revenue contribution from the introduction of QuickLabel's new QL-300, QL-120X and QL-850 printers, as well as continued growth in revenue from sales of both QuickLabel monochromatic printers and TrojanLabel brand printers. This growth was tempered by lower sales of other inkjet color printers within the QuickLabel product group, particularly the older models, QL-120 and QL-800. PI current year segment operating profit was $7.5 million with a profit margin of 8.5%, compared to the prior year segment operating profit of $7.9 million and related profit margin of 9.1%. The decrease in current year segment operating profit and margin is primarily due to higher operating costs and unfavorable product mix.

Test & Measurement

Revenue from the T&M product group was $45.3 million for fiscal 2020, a 9.1% decrease compared to revenue of $49.9 million in the prior year. The decrease in revenue for the current year is primarily attributable to the decline in the aerospace printer product lines impacted by the Boeing 737 MAX grounding. The decline was slightly offset by an increase in the hardware product line as a result of increased sales of T&M data recorders and AstroNova aerospace printers for programs other than the 737 MAX. The T&M segment also experienced an increase in parts revenue in the aerospace product line for fiscal 2020. T&M's current year segment operating profit was $6.3 million resulting in a 13.9% profit margin compared to the prior year segment operating profit of $11.9 million and related operating margin of 23.9%. The lower segment operating profit and related margin for the current year is due to lower revenue, adverse product mix and higher manufacturing and period costs.

Liquidity and Capital Resources

Overview

Generally, our primary sources of liquidity are cash generated from operating activities and borrowings under our revolving credit facility, as described below. These sources also fund a portion of our capital expenditures and contractual contingent consideration obligations. Our level of cash and short-term financing capabilities along with cash flows from operations have historically been sufficient to meet our operating and capital needs. We believe that during the next 12 months the COVID-19 pandemic is likely to impact general economic activity and demand in our end markets, especially the Aerospace sector, to an extent that we will have to rely more heavily on external financing sources to meet our operating and capital needs. As a result of the impact of the COVID-19 pandemic, our customers may also experience liquidity pressure and be unable to pay us for products and services on a timely basis. Conditions in the credit markets may also deteriorate and the availability of credit may be reduced as a result of the COVID-19 pandemic such that we would not be able to access sufficient financing to support our operations, which would have a material adverse impact on our business. At this time, we expect that it is likely that we will violate the current terms of our credit agreement with Bank of America at the end of our first or second quarter of fiscal 2021. However, based on discussions with our lender, we expect to be able to renegotiate the terms of our credit agreement prior to any violations. If we are unable to renegotiate the terms of our credit agreement or secure alternative financing on acceptable terms, it will have a material adverse impact on the Company.

During the current year, the Company borrowed an additional $5.0 million on its revolving credit facility, and at January 31, 2020 the Company had $6.5 million of borrowings outstanding under that facility. During fiscal 2019, we converted our securities available for sale to cash. Our cash and cash equivalents at January 31, 2020, were $4.2 million and we had $11.0 million remaining available for borrowing under our revolving credit facility.

In April 2020, the Company applied for a loan in the amount of approximately $4.4 million from Bank of America, N.A. pursuant to the Paycheck Protection Program administered by the United States Small Business Administration and authorized by the Keeping American Workers Employed and Paid Act, which is part of the Coronavirus Aid, Relief, and Economic Security Act, enacted on March 27, 2020. There can be no assurance that the Company will receive any or all of the requested loan proceeds under this program.

Indebtedness

The Company and the Company’s wholly owned Danish subsidiaries, ANI ApS and TrojanLabel ApS (collectively, the “Parties”), are parties to a credit agreement (“Credit Agreement”) with Bank of America, N.A. The Credit Agreement and its subsequent amendments through fiscal 2019 provided for a secured credit facility consisting of a term loan to ANI ApS in the principal amount of $9.2 million, a term loan to the Company in the principal amount of $15.0 million and a $10.0 million revolving credit facility for the Company. On December 9, 2019, the Parties entered into a Fourth Amendment (the “Fourth Amendment”) to the Credit Agreement. The Fourth Amendment amended the Credit Agreement to, among other things, (i) increase the aggregate amount available for borrowings under the revolving line of credit prior to November 1, 2020 from $10.0 million to $17.5 million through the second quarter of fiscal 2021 and (ii) modify the financial covenants with which the Company must comply thereunder by excluding certain capital expenditures from the calculation of the Company’s consolidated fixed charge coverage ratio, providing that the minimum consolidated fixed charge coverage ratio covenant will be suspended through the second quarter of fiscal 2021, and adding a minimum consolidated EBITDA covenant commencing with the fourth quarter of fiscal 2020 and continuing through the second quarter of fiscal 2021.

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 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 Kroner, 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. Additionally, the Company entered into a hedging agreement to manage the variable interest rate risk associated with its payments with 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.

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 Kroner. 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 2020 bore interest at a weighted average annual rate of 4.81% and the Company has incurred $0.5 million of interest expense for revolving credit line borrowings for the year ended January 31, 2020.

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, 2020, 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, 2020, 2019 and 2018 are included on page 49 of this Form 10-K. Net cash provided by operating activities was $3.2 million in fiscal 2020 compared to net cash provided by operating activities of $5.0 million in the previous year. The decrease in net cash provided by operations for the current year is primarily due to a decrease in net income of $4.0 million partially offset by a decrease in cash used for working capital of $2.1 million from fiscal 2019. The changes in accounts receivable, inventory, income taxes, accounts payable and accrued expenses for the current year decreased cash by $4.8 million in fiscal compared to $6.9 million the prior year.

The accounts receivable balance decreased to $19.8 million at January 31, 2020, compared to $23.5 at January 31, 2019. The $3.7 million decrease in the accounts receivable balance is directly related to the decrease in sales for the fourth quarter of the current year to $30.5 million from $37.2 million in the prior year.

The year-end inventory balance increased to $33.9 million at January 31, 2020. versus $30.2 million at January 31, 2019 and the days inventory on hand increased to 151 days at the end of fiscal 2020 as compared to 120 days at the end of the fiscal 2019. The current period increase in inventory and related days on hand is due to lower-than-forecasted sales, as well as a buildup of inventory for new product launches in our Product

Identification segment and build-up of safety stock to fulfill requirements related to the transitioning of certain aerospace customers as a result of the Honeywell Agreement. Also contributing to the inventory increase were delayed shipments to customers in both segments that were subsequently shipped after year end and last-time buy parts and safety stock increases in the T&M segment.

Net cash provided by operating activities was $5.0 million in fiscal 2019 compared to net cash provided by operating activities of $3.7 million in the previous year. The increase in net cash provided by operations for fiscal year 2019 is primarily due to an increase in net income of $2.4 million, an increase in non-cash amortization related to the Honeywell acquisition partially offset by the payment of the prior year's accrued expenses to Honeywell under the TSA agreement.

The accounts receivable balance was $23.5 million at the end of fiscal year 2019 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 the end of fiscal 2018 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 used by investing activities for fiscal 2020 was $2.9 million for capital expenditures, consisting of $0.4 million for land and building improvements; $1.9 million for information technology; $0.2 million for machinery and equipment; $0.2 million for tools and dies; and $0.2 million for furniture, fixtures and other capital expenditures.

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 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 used by financing activities for fiscal 2020 was $3.7 million, consisting primarily of principal payments on long-term debt of $5.2 million and the guaranteed royalty obligation of $1.9 million. Cash used for financing was partially offset by borrowings of $5.0 million on the Company's revolving credit facility in fiscal 2020. The Company did not repurchase any shares of its common stock in fiscal 2020. Cash provided or used by financing activities also included cash used to pay dividends of $2.0 million in fiscal 2020 and $1.9 million in both fiscal 2019 and 2018.

Net cash used by financing activities for fiscal 2019 was $6.1 million, primarily as a result of principal payments of $5.1 million on long-term debt, $1.5 million on the Company's revolving credit facility and $1.6 million on the guaranteed royalty obligations. 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.

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, 2020, 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)	$22,380	$21,216	$ 1,164	$ —	$ —
Debt	13,034	5,208	7,826	—	—
Interest on Debt (2)	2,124	586	1,295	243	—
Royalty Obligation (3)	10,012	2,000	3,402	2,643	1,967
Excess Royalty Obligation (4)	773	773	—	—	—
Operating Lease Obligations	1,905	416	658	442	389
	$50,228	$30,199	$14,345	$3,328	$ 2,356

(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 9, "Royalty Obligation" 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 9, "Royalty Obligation," 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 effect on our consolidated financial position or results of operations. It is possible, however, that results of operations for any 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 most 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 effect 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.

Allowance for Doubtful Accounts: Accounts receivable consists primarily of receivables from our customers arising from the sale of our products. We actively monitor our exposure to credit risk through the use of credit approvals and credit limits. Accounts receivable is presented net of reserves for doubtful accounts.

We estimate the collectability of our receivables and establish allowances for accounts receivable that we estimate to be uncollectible. We base these allowances on our historical collection experience, the length of time our accounts receivable are outstanding and the financial condition of individual customers. In situations where we are aware of a specific customer's inability to meet its financial obligation, such as in the case of a bankruptcy filing, we assess the need for a specific reserve for bad debts. We believe that our procedure for estimating such amounts are reasonable and historically have not resulted in material adjustments in subsequent periods. Bad debt expense was less than 1% of net sales in each of fiscal 2020 and 2019.

Warranty Claims: The Company offers warranties on some of its products. The Company establishes a reserve for estimated costs of warranties at the time the product revenue is recognized. This reserve requires us to make estimates regarding the amounts necessary to settle future and existing claims using historical data on products sold as of the balance sheet date. The length of the warranty period, the product's failure rates, and the customer's usage affect estimated warranty cost. If actual warranty costs differ from the Company's estimated amounts, future results of operations could be affected adversely. Warranty cost is recorded as cost of revenue, and the reserve balance recorded as an accrued expense. While the Company maintains product quality programs and processes, its warranty obligation is affected by product failure rates and the related corrective costs. If actual product failure rates and/or corrective costs differ from the estimates, the Company revises its estimated warranty liability accordingly.

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, 2020, the Company has provided valuation allowances for future tax benefits resulting from certain domestic R&D tax credits, foreign tax credit carryforwards, and net operating loss carryforwards in China, all of 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 in the U.S. 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.

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.

Self-Insurance Liability Accrual: We maintain self-insured group medical and dental programs for qualifying employees and maintain stop-loss coverage from a third party which limits our exposure to large claims. We record a liability associated with these benefits that includes an estimate of both claims filed and losses incurred but not yet reported based on historical claims experience. In estimating this accrual, we utilize an independent third-party broker to estimate of expected losses, which are based on analyses of historical data. Our assumptions are closely monitored and adjusted when warranted by changing circumstances. Should claims occur or medical costs increase in greater amounts than we have expected, accruals may not be sufficient, and we may record additional expenses.

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 several 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 U.K., the Canadian Dollar in Canada, the Danish Kroner 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, 2020.

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 $0.4 million for the year ended January 31, 2020.

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 $0.1 million. If interest rates were to increase by 50 basis points, the fair value of the Company's debt would decrease by approximately $0.1 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, 2020 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, 2020. 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, 2020, 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 recently completed 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 to be filed for its 2020 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	61	President, Chief Executive Officer and Director
David S. Smith	63	Vice President, Chief Financial Officer and Treasurer
Stephen M. Petrarca	57	Vice President—Operations
Michael J. Natalizia	56	Chief Technology Officer and Vice President of Strategic Technical Alliances
Tom Carll	53	Vice President and General Manager—Aerospace

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. 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.

Mr. Carll joined the Company in 1989 and has held the position of Vice President and General Manager—Aerospace since 2011. Previously, Mr. Carll was Product Manager and National Sales Manager of the AstroNova Test & Measurement product group and from its formation in 2004, the AstroNova Aerospace business group.

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

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"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.

Item 11. ***Executive Compensation***

The information required by this item is incorporated herein by reference to the Company's definitive Proxy Statement to be filed for its 2020 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 to be filed for its 2020 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, 2020:

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	801,111(1)	$ 14.46(2)	681,759(3)
Equity Compensation Plans Not Approved by Shareholders	—	—	—
Total	801,111(1)	$ 14.46(2)	681,759(3)

(1) Includes 373,345 shares issuable upon exercise of outstanding options granted under the Company's 2007 Equity Incentive Plan; 166,700 shares issuable upon exercise of outstanding options granted and 22,718 restricted stock units outstanding under the Company's 2015 Equity Incentive Plan; and 138,999 shares issuable upon exercise of outstanding options granted and 99,349 restricted stock units outstanding under the Company's 2018 Equity Incentive Plan.

(2) Does not include restricted stock units.

(3) Represents 656,785 shares available for grant under the AstroNova, Inc. 2018 Equity Incentive Plan and 24,974 shares available for purchase under the Employee Stock Purchase Plan. This balance does not include 12,567 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 13, "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 2020 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 2020 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.
(4.1)	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.
(4.2)	Description of securities registered pursuant to Section 12 of the Exchange Act.
(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.**

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Exhibit Number	
(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.**
(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)	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.**
(10.13)	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.**
(10.14)	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.**
(10.15)	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	
(10.16)	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.**
(10.17)	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.**
(10.18)	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.**
(10.19)	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.**
(10.20)	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.
(10.21)	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.
(10.22)	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.
(10.23)	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.
(10.24)	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.**
(10.25)	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.
(10.26)	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.**
(10.27)	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.**
(10.28)	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.**
(10.29)	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.**

Exhibit Number	
(10.30)	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.**
(10.31)	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.**
(10.32)	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.**
(10.33)	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.**
(10.34)	AstroNova, Inc. 2018 Equity Incentive Plan Non-Employee Director Restricted Stock Agreement filed as Exhibit 10.41 to the Company's Annual Report on Form 10-K for the fiscal year ended January 31, 2019 and incorporated by reference to herein.*
(10.35)	Amendment No. 1 to General Manager Employment Contract dated as of March 21, 2019 between AstroNova, Inc. and Michael Morawetz filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, event date March 20, 2019, filed with the SEC on March 26, 2019 and incorporated by reference herein.*
(10.36)	AstroNova, Inc. 2018 Equity Incentive Plan, as amended, filed as Appendix A to the Company's Definitive Proxy Statement filed with the SEC on May 25, 2019 on Schedule 14A and incorporated by reference herein.*
(10.37)	Fourth Amendment to Credit Agreement, dated as of December 9, 2019, 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 November 2, 2019 and incorporated by reference herein.**
(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.
(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, 2020, 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.

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, 2020

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, 2020
/s/ DAVID S. SMITH **David S. Smith**	Vice President, Chief Financial Officer and Treasurer (Principal Accounting and Financial Officer)	April 10, 2020
/s/ JEAN A. BUA **Jean A. Bua**	Director	April 10, 2020
/s/ MITCHELL I. QUAIN **Mitchell I. Quain**	Director	April 10, 2020
/s/ YVONNE E. SCHLAEPPI **Yvonne E. Schlaeppi**	Director	April 10, 2020
/s/ HAROLD SCHOFIELD **Harold Schofield**	Director	April 10, 2020
/s/ RICHARD S. WARZALA **Richard S. Warzala**	Director	April 10, 2020

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Shareholders and 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, 2020 and 2019, 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, 2020 and the related notes and the financial statement schedule listed in Item 15(a)(2)(collectively, the "financial statements"). We also have audited the Company's internal control over financial reporting as of January 31, 2020, 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, 2020 and 2019, and the results of its operations and its cash flows for each of the years in the three-year period ended January 31, 2020 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, 2020, 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, 2020

ASTRONOVA, INC.

CONSOLIDATED BALANCE SHEETS

As of January 31

(In Thousands, Except Share Data)

	2020	2019
ASSETS		
CURRENT ASSETS		
Cash and Cash Equivalents	$ 4,249	$ 7,534
Accounts Receivable, net of reserves of $856 in 2020 and $521 in 2019	19,784	23,486
Inventories	33,925	30,161
Prepaid Expenses and Other Current Assets	2,193	1,427
Total Current Assets	60,151	62,608
Property, Plant and Equipment, net	11,268	10,380
Identifiable Intangibles, net	25,383	29,674
Goodwill	12,034	12,329
Deferred Tax Assets, net	5,079	2,928
Right of Use Asset	1,661	—
Other	1,088	1,064
TOTAL ASSETS	$ 116,664	$ 118,983
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES		
Accounts Payable	$ 4,409	$ 5,956
Accrued Compensation	2,700	5,023
Other Accrued Expenses	4,711	2,911
Revolving Credit Facility	6,500	1,500
Current Portion of Long-Term Debt	5,208	5,208
Current Liability—Royalty Obligation	2,000	1,875
Current Liability—Excess Royalty Payment Due	773	1,265
Deferred Revenue	466	373
Income Taxes Payable	—	554
Total Current Liabilities	26,767	24,665
NON CURRENT LIABILITIES		
Long-Term Debt, net of current portion	7,715	12,870
Royalty Obligation, net of current portion	8,012	9,916
Lease Liabilities, net of current portion	1,279	—
Deferred Tax Liabilities	435	40
Other Long-Term Liabilities	1,081	1,717
TOTAL LIABILITIES	45,289	49,208
Commitments and Contingencies (See Note 19)		
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 10,343,610 shares in 2020 and 10,218,559 shares in 2019	517	511
Additional Paid-in Capital	56,130	53,568
Retained Earnings	49,298	49,511
Treasury Stock, at Cost, 3,281,701 shares in 2020 and 3,261,672 shares in 2019	(33,477)	(32,997)
Accumulated Other Comprehensive Loss, net of tax	(1,093)	(818)
TOTAL SHAREHOLDERS' EQUITY	71,375	69,775
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$ 116,664	$ 118,983

See Notes to the Consolidated Financial Statements.

ASTRONOVA, INC.

CONSOLIDATED STATEMENTS OF INCOME

For the years ended January 31

(In Thousands, Except Per Share Data)

	2020	2019	2018
Revenue	$133,446	$136,657	$113,401
Cost of Revenue	84,688	82,658	69,399
Gross Profit	48,758	53,999	44,002
Costs and Expenses:			
Selling and Marketing	26,884	26,343	22,234
Research and Development	8,084	7,813	7,453
General and Administrative	11,357	11,123	8,903
Operating Expenses	46,325	45,279	38,590
Operating Income	2,433	8,720	5,412
Other Expense:			
Interest Expense	(826)	(876)	(402)
Investment Income	143	145	168
Other, Net	(380)	(681)	(21)
	(1,063)	(1,412)	(255)
Income before Income Taxes	1,370	7,308	5,157
Income Tax Provision (Benefit)	(389)	1,578	1,871
Net Income	$ 1,759	$ 5,730	$ 3,286
Net Income Per Common Share—Basic	$ 0.25	$ 0.83	$ 0.48
Net Income Per Common Share—Diluted	$ 0.24	$ 0.81	$ 0.47
Weighted Average Number of Common Shares Outstanding—Basic	7,024	6,881	6,911
Dilutive Effect of Common Stock Equivalents	214	203	104
Weighted Average Number of Common Shares Outstanding—Diluted	7,238	7,084	7,015

See Notes to the Consolidated Financial Statements.

ASTRONOVA, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

For the years ended January 31

(In Thousands)

	2020	2019	2018
Net Income	$1,759	$5,730	$ 3,286
Other Comprehensive Income (Loss), net of taxes and reclassification adjustments:			
Foreign Currency Translation Adjustments	(133)	(671)	867
Change in Value of Derivatives Designated as Cash Flow Hedge	122	622	(1,036)
(Gains) Losses from Cash Flow Hedges Reclassified to Income Statement	(264)	(600)	1,048
Unrealized Gain (Loss) on Securities Available for Sale	—	—	5
Realized Gain on Securities Available for Sale Reclassified to Income Statement	—	3	—
Other Comprehensive Income (Loss)	(275)	(646)	884
Comprehensive Income	$1,484	$5,084	$ 4,170

See Notes to the Consolidated Financial Statements.

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ASTRONOVA, INC.

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

($ In Thousands)

	Common Stock						
	Shares	Amount	Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income (Loss)	Total Shareholders' Equity
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 income	—	—	—	—	—	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 loss	—	—	—	—	—	(646)	(646)
Balance January 31, 2019	10,218,559	$ 511	$ 53,568	$49,511	$(32,997)	$ (818)	$ 69,775
Share-based compensation	—	—	1,775	—	—	—	1,775
Employee option exercises	65,121	3	790	—	(11)	—	782
Restricted stock awards vested, net	59,930	3	(3)	—	(469)	—	(469)
Common Stock – cash dividend—$0.28 per share	—	—	—	(1,972)	—	—	(1,972)
Net income	—	—	—	1,759	—	—	1,759
Other comprehensive loss	—	—	—	—	—	(275)	(275)
Balance January 31, 2020	10,343,610	$ 517	$ 56,130	$49,298	$(33,477)	$ (1,093)	$ 71,375

See Notes to the Consolidated Financial Statements.

ASTRONOVA, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

For the years ended January 31

(In Thousands)

	2020	2019	2018
Cash Flows from Operating Activities:			
Net Income	$ 1,759	$ 5,730	$ 3,286
Adjustments to Reconcile Net Income to Net Cash Provided By Operating Activities:			
Depreciation and Amortization	6,284	6,152	3,994
Amortization of Debt Issuance Costs	49	51	34
Share-Based Compensation	1,775	1,886	1,583
Deferred Income Tax Provision (Benefit)	(1,638)	(1,638)	744
Changes in Assets and Liabilities, Net of Impact of Acquisitions:			
Accounts Receivable	3,594	(1,493)	(4,722)
Inventories	(3,938)	(2,872)	(5,509)
Accounts Payable and Accrued Expenses	(2,732)	(2,342)	5,207
Income Taxes Payable	(1,773)	(151)	(801)
Other	(156)	(318)	(92)
Net Cash Provided by Operating Activities	3,224	5,005	3,724
Cash Flows from Investing Activities:			
Proceeds from Sales/Maturities of Securities Available for Sale	—	1,511	5,539
Purchases of Securities Available for Sale	—	—	(321)
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
Additions to Property, Plant and Equipment	(2,906)	(2,645)	(2,204)
Net Cash Used by Investing Activities	(2,906)	(1,534)	(20,781)
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	313	1,077	539
Purchase of Treasury Stock	—	—	(11,238)
Proceeds from Issuance of Long-Term Debt	—	—	24,200
Borrowings under Revolving Credit Facility, net	5,000	1,500	—
Change in TrojanLabel Earn Out Liability	—	—	(1,438)
Payment of Minimum Guarantee Royalty Obligation	(1,875)	(1,625)	—
Principal Payments on Long-Term Debt	(5,208)	(5,130)	(828)
Payments of Debt Issuance Costs	—	—	(234)
Dividends Paid	(1,972)	(1,933)	(1,944)
Net Cash (Used) Provided by Financing Activities	(3,742)	(6,111)	9,057
Effect of Foreign Exchange Rate Changes on Cash and Cash Equivalents	139	(3)	79
Net Decrease in Cash and Cash Equivalents	(3,285)	(2,643)	(7,921)
Cash and Cash Equivalents, Beginning of Year	7,534	10,177	18,098
Cash and Cash Equivalents, End of Year	$ 4,249	$ 7,534	$ 10,177
Supplemental Information:			
Cash Paid During the Period for:			
Interest	$ 531	$ 636	$ 246
Income Taxes, Net of Refunds	$ 2,913	$ 3,472	$ 1,940
Schedule of non-cash financing activities:			
Value of Shares Received in Satisfaction of Option Exercise Price	$ 11	$ 366	$ 275

See Notes to the Consolidated Financial Statements.

ASTRONOVA, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
January 31, 2020, 2019 and 2018

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 January 31, 2020 and 2019, $3.4 million and $3.9 million, respectively, was held in foreign bank accounts.

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 most 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.

Most 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 10% of revenue for the year ended January 31, 2020. 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. Costs related to obtaining sales contracts for our aerospace printer products have been capitalized and are being amortized based on the forecasted number of units sold over the estimated benefit term. 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 $0.4 million in fiscal 2020, $0.7 million in fiscal 2019 and $0.2 million for fiscal 2018.

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 $1.8 million; $1.9 million and $1.8 million in fiscal 2020, 2019 and 2018, 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 2020, 2019 and 2018, 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 2020, 2019 and 2018, 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 2020 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 regard to goodwill at this time.

Leases: On February 1, 2019 the Company adopted ASC 842, Leases. This new guidance requires a lessee to recognize assets and liabilities on the balance sheet for all leases, with the result being the recognition of a right of use (ROU) asset and a lease liability. The lease liability is equal to the present value of the minimum lease payments for the term of the lease, including any optional renewal periods determined to be reasonably certain to be exercised, using a discount rate determined at lease commencement. This discount rate is the rate implicit in the lease, if known; otherwise, the incremental borrowing rate for the expected lease term is used. The Company's incremental borrowing rate approximates the rate the Company would have to pay to borrow on a collateralized basis over a similar term at lease inception. The value of the ROU asset is equal to the initial measurement of the lease liability plus any lease payments made to the lessor at or before the commencement date and any unamortized initial direct costs incurred by the lessee, less any unamortized lease incentives received. Several of the Company's lease contracts include options to extend the lease term and the Company includes the renewal options for these leases in the determination of the ROU asset and lease liability when the likelihood of renewal is determined to be reasonably certain.

The Company enters into lease contracts for certain of its facilities at various locations worldwide. At inception of a contract, the Company determines whether the contract is or contains a lease. If the Company has a right to obtain substantially all of the economic benefits from the use of the identified asset and the right to direct the use of the asset, then the contract contains a lease.

There are two types of leases, operating leases and finance leases. Lease classification is determined at lease commencement. The Company has made an accounting policy election to apply the short-term exception, which does not require the capitalization of leases with terms of 12 months or less. All of the Company's leases are classified as operating leases. Operating lease expense is recognized on a straight-line basis over the lease term and included in general and administrative expense on the consolidated statement of income. ROU assets are classified in other long-term assets, short-term lease liabilities are classified in other current liabilities, and long-term lease liabilities are classified in other long-term liabilities on the consolidated balance sheet at January 31, 2020. On the statement of cash flow, payments for operating leases are classified as operating activities for the year ending January 31, 2020.

In addition, several of our lease agreements include non-lease components for items such as common area maintenance and utilities which are accounted for separately from the lease component.

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, 2020 and 2019, a valuation allowance was provided for deferred tax assets attributable to certain domestic R&D credit carryforwards. In addition, during fiscal 2020, the Company provided a valuation allowance for deferred tax assets attributable to foreign tax credit carryforwards and net operating loss carryforwards in China, both of which would expire unused.

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.

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 2020, 2019 and 2018, there were 202,187, 326,275 and 675,600, 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.

Self-Insurance: We are self-insured for U.S. medical and dental benefits for qualifying employees and maintain stop-loss coverage from a third party which limits our exposure to large claims. We record a liability associated with these benefits that includes an estimate of both claims filed and losses incurred but not yet reported based on historical claims experience. In estimating this accrual, we utilize an independent third-party broker to estimate expected losses, which are based on analyses of historical data. Assumptions are closely monitored and adjusted when warranted by changing circumstances. Our liability for self-insured claims is included within accrued compensation in our consolidated balance sheets and was $0.6 million and $0.1 million, as of January 31, 2020 and 2019.

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 several 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, are recognized in the statement of income during the current period.

Recent Accounting Pronouncements

Recently Adopted:

Leases

In February 2016, the Financial Accounting Standards Board ("FASB") issued ASU2016-02, "Leases (Topic 842)." ASU 2016-02 and its subsequent amendments superseded previous guidance related to accounting for leases and are 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 updates also require improved disclosures to help users of financial statements better understand the amount, timing and uncertainty of cash flows arising from leases.

The Company applied ASU 2016-02 to all leases in effect at February 1, 2019 and adopted this standard using the non-comparative transition option, which does not require the restatement of prior years. Accordingly, comparative information has not been adjusted and continues to be reported under the previous accounting guidance. The Company has elected the package of practical expedients, which allows entities to not reassess (1) whether contracts are or contain leases, (2) lease classification and (3) initial direct costs. Also, the Company has made an accounting policy election to apply the short-term exception, which does not require the capitalization of leases with terms of 12 months or less. On February 1, 2019, the Company recognized $2.0 million of Right of Use ("ROU") assets and lease liabilities on its consolidated balance sheet and currently has $1.7 million of ROU assets as of January 31, 2020. The adoption did not have a material impact on the Company's results of operations or cash flows.

Recent Accounting Standards Not Yet Adopted:

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. This standard is not expected to have a material impact on the Company's consolidated financial statements and related disclosures.

No other new accounting pronouncements, issued or effective during fiscal 2020, 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 consumable supplies including paper, labels, tags, inks, toners and ribbons, (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, 2020**	**January 31, 2019**	**January 31, 2018**
United States	$ 83,671	$ 83,668	$ 69,795
Europe	29,617	31,574	29,948
Asia	8,316	8,207	3,808
Canada	5,719	6,692	5,373
Central and South America	4,145	4,147	3,402
Other	1,978	2,369	1,075
Total Revenue	$ 133,446	$ 136,657	$ 113,401

Major product types:

	Year Ended		
(In thousands)	**January 31, 2020**	**January 31, 2019**	**January 31, 2018**
Hardware	$ 48,959	$ 53,207	$ 37,501
Supplies	71,838	71,178	65,265
Service and Other	12,649	12,272	10,635
Total Revenue	$ 133,446	$ 136,657	$ 113,401

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. Contract liabilities were $466,000 and $373,000 at January 31, 2020 and January 31, 2019, respectively and are recorded as deferred revenue in the consolidated balance sheet. During the year ended January 31, 2020, the Company recognized $361,000 of revenue that was included in the contract liability balance at the beginning of the period.

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, 2019 was $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. In fiscal 2020, the Company incurred an additional $120,000 in incremental direct costs which were deferred. Amortization of incremental direct costs was $79,000 for the period ended January 31, 2020. The balance of the deferred incremental direct contract costs net of accumulated amortization at January 31, 2020 is $944,000, of which $59,000 was reported in other current assets and $885,000 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 6 years.

Note 3—Intangible Assets

Intangible assets are as follows:

	January 31, 2020				January 31, 2019			
(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	$ (2,021)	$ —	$ 1,079	$ 3,100	$ (1,723)	$ —	$ 1,377
RITEC:								
Customer Contract Relationships	2,830	(1,076)	—	1,754	2,830	(725)	—	2,105
Non-Competition Agreement	950	(871)	—	79	950	(681)	—	269
TrojanLabel:								
Existing Technology	2,327	(1,053)	78	1,352	2,327	(711)	140	1,756
Distributor Relations	937	(297)	27	667	937	(200)	56	793
Honeywell:								
Customer Contract Relationships	27,243	(6,791)	—	20,452	27,243	(3,869)	—	23,374
Intangible Assets, net	$37,387	$ (12,109)	$ 105	$25,383	$37,387	$ (7,909)	$ 196	$29,674

There were no impairments to intangible assets during the periods ended January 31, 2020 and 2019. Amortization expense of $4.2 million; $4.1 million and $2.2 million with regard to acquired intangibles has been included in the consolidated statements of income for years ended January 31, 2020, 2019 and 2018, respectively.

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

(In thousands)	2021	2022	2023	2024	2025
Estimated amortization expense	$4,069	$3,972	$3,966	$3,969	$3,394

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Note 4—Inventories

The components of inventories are as follows:

(In thousands)	January 31 2020	2019
Materials and Supplies	$ 20,151	$ 17,517
Work-in-Progress	1,408	1,633
Finished Goods	17,992	15,688
	39,551	34,838
Inventory Reserve	(5,626)	(4,677)
Balance at January 31	$ 33,925	$ 30,161

Finished goods inventory includes $3.4 million and $2.1 million of demonstration equipment at January 31, 2020 and 2019, respectively.

Note 5—Property, Plant and Equipment

Property, plant and equipment consist of the following:

(In thousands)	January 31 2019	2019
Land and Land Improvements	$ 967	$ 967
Buildings and Leasehold Improvements	12,524	12,165
Machinery and Equipment	23,167	22,810
Computer Equipment and Software	11,388	9,385
Gross Property, Plant and Equipment	48,046	45,327
Accumulated Depreciation	(36,778)	(34,947)
Net Property Plant and Equipment	$ 11,268	$ 10,380

Depreciation expense on property, plant and equipment was $2.0 million for both of the years ended January 31, 2020 and 2019 and $1.8 million for the year ended January 31, 2018.

Note 6—Accrued Expenses

Accrued expenses consisted of the following:

(In thousands)	January 31 2020	2019
Warranty	$ 850	$ 832
Professional Fees	697	403
Lease Liability	416	—
Dealer Commissions	236	320
Stockholder Relation Fees	194	40
Accrued Payroll & Sales Tax	193	97
Other Accrued Expenses	2,125	1,219
	$4,711	$2,911

Note 7—Long- Term Debt and Other Financing Arrangements

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

(In thousands)	January 31 2020	2019
USD Term Loan (3.03% and 4.02% as of January 31, 2020 and 2019, respectively); maturity date November 30, 2022	$ 8,250	$11,250
USD Term Loan (3.03% and 4.02% as of January 31, 2020 and 2019, respectively); maturity date of January 31, 2022	4,784	6,992
	13,034	18,242
Debt Issuance Costs, net of accumulated amortization	(111)	(164)
Current Portion of Term Loan	(5,208)	(5,208)
Long-Term Debt	$ 7,715	$12,870

The schedule of required principal payments remaining during the next five years on long-term debt outstanding as of January 31, 2020 is as follows:

(In thousands)	
Fiscal 2021	$ 5,208
Fiscal 2022	5,576
Fiscal 2023	2,250
Fiscal 2024	—
Fiscal 2025	—
	$13,034

Revolving Line of Credit

The Company has a $17.5 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 Kroner. 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.

At January 31, 2020, the Company had an outstanding balance of $6.5 million on the revolving credit line. As of January 31, 2020. the outstanding balance bore interest at a weighted average annual rate of 3.68% and $0.1 million of interest was incurred on this obligation and included in other expense in the accompanying consolidated income statement for the period ended January 31, 2020. As of January 31, 2020, there is $11.0 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*.

Credit Agreement

The Company and the Company's wholly owned Danish subsidiaries, ANI ApS and TrojanLabel ApS (collectively the "Parties"), are parties to a credit agreement (the "Credit Agreement") with Bank of America, N.A. The Credit Agreement and its subsequent amendments through fiscal 2019 provided for a secured credit facility consisting of a term loan to ANI ApS in the principal amount of $9.2 million, a term loan to the Company in the principal amount of $15.0 million and a revolving credit facility for the Company.

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 8, "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 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.

On December 9, 2019, the Parties entered into a Fourth Amendment (the "Fourth Amendment") to the Credit Agreement. The Fourth Amendment amended the Credit Agreement to, among other things, (i) increase the aggregate amount available for borrowings under the revolving line of credit from $10.0 million to $17.5 million through the second quarter of fiscal 2021 and (ii) modify the financial covenants with which the Company must comply thereunder by excluding certain capital expenditures from the calculation of the Company's consolidated fixed charge coverage ratio, providing that the minimum consolidated fixed charge coverage ratio covenant will be suspended through the second quarter of fiscal 2021, and adding a minimum consolidated EBITDA covenant commencing with the fourth quarter of fiscal 2020 and continuing through the second quarter of fiscal 2021. As of January 31, 2020, the Company believes it is in compliance with all of the covenants in the Credit Agreement.

Note 8—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. 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 Kroner 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 Kroner, as well as exchanges of principal at the inception spot rate, over the life of the term loan.

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.

The following table summarizes the notional amount and fair value of the Company's derivative instrument:

Cash Flow Hedges (In thousands)	**January 31, 2020**			**January 31, 2019**		
		Fair Value Derivatives			**Fair Value Derivatives**	
	Notional Amount	**Asset**	**Liability**	**Notional Amount**	**Asset**	**Liability**
Cross-currency Interest Rate Swap	$ 4,489	$ —	$ 250	$ 6,329	$ —	$ 600
Interest Rate Swap	$ 8,250	$ —	$ 96	$ 11,250	$ 85	$ —

The following tables present the impact of the derivative instruments in our consolidated financial statements for the years ended January 31, 2020 and 2019:

	Years Ended				
	Amount of Gain Recognized in OCI on Derivative		**Location of Gain Reclassified from Accumulated OCI into Income**	**Amount of Gain Reclassified from Accumulated OCI into Income**	
Cash Flow Hedge (In thousands)	**January 31, 2020**	**January 31, 2019**		**January 31, 2020**	**January 31, 2019**
Swap contracts	$ 159	$ 797	Other Income	$ 338	$ 769

At January 31, 2020, the Company expects to reclassify approximately $0.1 million of net gains on the swap contracts from accumulated other comprehensive 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 9—Royalty Obligation

In fiscal 2018, AstroNova, Inc. entered into an Asset Purchase and License Agreement with Honeywell International, Inc. 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 included a guaranteed minimum royalty payment of $15.0 million, to be paid in quarterly installments over a ten year period. Royalty payments are 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.

The guaranteed minimum royalty payment obligation 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. As of January 31, 2020, the Company had paid an aggregate of $3.5 million of the guaranteed minimum royalty obligation. At January 31, 2020, the current portion of the outstanding guaranteed minimum royalty obligation of $2.0 million is to be paid over the next twelve months and is reported as a current liability and the remainder of $8.0 million is reported as a long-term liability on the Company's consolidated balance sheet. In addition to the guaranteed minimum royalty payments, for the periods ended January 31, 2020 and January 31, 2019, the Company also incurred excess royalty expense of $1.2 million and $2.8 million, respectively, which is included in cost of revenue in the Company's consolidated statements of income. A total of $0.8 million of excess royalty is payable and reported as a current liability on the Company's condensed consolidated balance sheet at January 31, 2020.

Note 10—Leases

The Company enters into lease contracts for certain of its facilities at various locations worldwide. Our leases have remaining lease terms of one to eight years, some of which include options to extend the lease term for periods of up to five years when it is reasonably certain the Company will exercise such options.

The company leases office space from an affiliate. This lease is classified as an operating lease with annual rental payments of approximately $63,000 and $61,000 as of January 31, 2020 and 2019, respectively.

Balance sheet and other information related to our leases is as follows:

Operating Leases (In thousands)	Balance Sheet Classification	January 31, 2020
Lease Assets	Right of Use Assets	$ 1,661
Lease Liabilities—Current	Other Liabilities and Accrued Expenses	416
Lease Liabilities—Long Term	Lease Liabilities	$ 1,279

Lease cost information is as follows:

Operating Leases (In thousands)	Statement of Income Classification	Year Ended January 31, 2020
Operating Lease Costs	General and Administrative Expense	$ 449

Maturities of operating lease liabilities are as follows:

(In thousands)	January 31, 2020
2021	$ 416
2022	358
2023	300
2024	273
2025	169
Thereafter	389
Total Lease Payments	1,905
Less: Imputed Interest	(210)
Total Lease Liabilities	$ 1,695

As of January 31, 2020, the weighted-average remaining lease term and weighted-average discount rate for our operating leases are 5.6 years and 3.96%, respectively. We calculated the weighted-average discount rate using incremental borrowing rates, which equal the rates of interest that we would pay to borrow funds on a fully collateralized basis over a similar term.

Supplemental cash flow information related to leases is as follows:

(In thousands)	Year Ended January 31, 2020
Cash paid for operating lease liabilities	$ 406

Note 11—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, 2017	$ (1,048)	$ (8)	$ —	$(1,056)
Other Comprehensive Loss Income (Loss) before reclassification	867	5	(1,036)	(164)
Amounts Reclassified to Net Income	—	—	1,048	1,048
Net 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)
Other Comprehensive Income (Loss) before reclassification	(133)	—	122	(11)
Amounts reclassified from AOCI to Earnings	—	—	(264)	(264)
Other Comprehensive Loss	(133)	—	(142)	(275)
Balance at January 31, 2020	$ (985)	$ —	$ (108)	$(1,093)

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 12—Shareholders' Equity

During fiscal 2020, 2019 and 2018, certain of the Company's employees delivered a total of 20,329, 33,430 and 26,561 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 $0.5 million, $0.6 million and $0.4 million, respectively, and are included in treasury stock in the accompanying consolidated balance sheets at January 31, 2020, 2019 and 2018. These transactions did not impact the number of shares authorized for repurchase under the Company's current repurchase program.

Note 13—Share-Based Compensation

The Company maintains the following share-based compensation plans:

Stock Plans:

We have one equity incentive plan from which we are authorized to grant equity awards, the AstroNova, Inc. 2018 Equity Incentive Plan (the "2018 Plan"). The 2018 Plan provides for, among other things, the issuance of awards, including incentive stock options, non-qualified stock options, stock appreciation rights, time-based restricted stock units (RSUs), performance-based restricted stock units (PSUs)and restricted stock awards (RSAs). At our annual meeting of shareholders held on June 4, 2019, the 2018 Plan was amended to increase the number of shares of the Company's common stock available for issuance by 300,000, bringing the total number of shares available for issuance under the 2018 Plan from 650,000 to 950,000, plus an additional number of shares equal to the number of shares subject to awards granted under the 2018 Plan or our 2015 Equity Incentive

Plan (the "2015 Plan") that are 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). Under the 2018 Plan, all awards to employees generally have a minimum vesting period of one year. Options granted under the 2018 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 and expire after ten years. As of January 31, 2020, 110,909 unvested shares of restricted stock and options to purchase an aggregate of 138,999 shares were outstanding under the 2018 Plan.

In addition to the 2018 Plan, we previously granted equity awards under the 2015 Plan and our 2007 Equity Incentive Plan (the "2007 Plan"). No new awards may be issued under the 2015 Plan or the 2007 Plan, but outstanding awards will continue to be governed by those plans. As of January 31, 2020, 1,007 unvested shares of restricted stock and options to purchase an aggregate of 373,345 shares were outstanding under the 2007 Plan and 22,718 unvested shares of restricted stock and options to purchase an aggregate of 166,700 shares were outstanding under the 2015 Plan.

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. Pursuant to the New Program, beginning with fiscal 2020, each non-employee director automatically receives 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 equals 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 was $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 vested 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.

Share-Based Compensation:

Share-based compensation expense has been recognized as follows:

	Years Ended January 31		
(In thousands)	2020	2019	2018
Stock Options	$ 616	$ 783	$ 437
Restricted Stock Awards and Restricted Stock Units	1,136	1,088	1,134
Employee Stock Purchase Plan	23	15	12
Total	$1,775	$1,886	$1,583

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, 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
Options Granted	—	—
Options Exercised	(57,175)	11.60
Options Forfeited	(34,526)	15.73
Options Cancelled	(400)	6.22
Options Outstanding, January 31, 2020	679,044	$ 14.46

Set forth below is a summary of options outstanding at January 31, 2020:

	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	54,881	$ 7.97	2.1	54,881	$ 7.97	2.1
$10.01-15.00	396,564	13.61	5.8	322,094	13.64	5.4
$15.01-20.00	227,599	17.50	7.8	112,445	17.07	7.6
	679,044	$ 14.46	6.2	489,420	$ 13.79	5.6

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
Risk-Free Interest Rate	2.6%	1.9%
Expected Life (years)	9	9
Expected Volatility	39.4%	39.0%
Expected Dividend Yield	1.5%	2.0%

No options were granted during fiscal 2020. The weighted-average estimated fair value of options granted during fiscal 2019 and 2018 was $7.43 and $4.79, respectively. As of January 31, 2020, there was $0.8 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 1.5 years.

As of January 31, 2020, the aggregate intrinsic value (the aggregate difference between the closing stock price of the Company's common stock on January 31, 2020, and the exercise price of the outstanding options) that would have been received by the option holders if all options had been exercised was $0.3 million for all exercisable options and $0.3 million for all options outstanding. The total aggregate intrinsic value of options exercised during 2020, 2019 and 2018 was $0.5 million, $1.1 million and $0.4 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, 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
Granted	119,522	19.86
Vested	(59,930)	14.50
Forfeited	(58,625)	19.00
Outstanding at January 31, 2020	134,634	$ 16.79

As of January 31, 2020, there was $1.5 million of unrecognized compensation expense related to unvested RSUs and RSAs. This expense is expected to be recognized over a weighted average period of 1.0 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		
	2020	2019	2018
Shares Reserved, Beginning	33,853	39,207	45,224
Shares Purchased	(8,879)	(5,354)	(6,017)
Shares Reserved, Ending	24,974	33,853	39,207

Note 14—Income Taxes

The components of income (loss) before income taxes are as follows:

	January 31		
(In thousands)	2020	2019	2018
Domestic	$1,930	$6,859	$2,110
Foreign	(560)	449	3,047
	$1,370	$7,308	$5,157

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

(In thousands)	2020	January 31 2019	2018
Current:			
Federal	$ 660	$ 1,807	$ 592
State	221	457	251
Foreign	368	952	284
	1,249	3,216	1,127
Deferred:			
Federal	$(1,364)	$ (843)	$ 903
State	(282)	(170)	(25)
Foreign	8	(625)	(134)
	(1,638)	(1,638)	744
	$ (389)	$ 1,578	$1,871

Total income tax (benefit)/provision differs from the expected tax (benefit)/provision as a result of the following:

(In thousands)	2020	January 31 2019	2018
Income Tax Provision at Statutory Rate	$ 288	$1,534	$1,697
U.S. Corporate Rate Change	—	52	1,010
State Taxes, Net of Federal Tax Effect	(48)	226	149
Foreign Rate Deferential	315	558	752
Transition Tax on Repatriated Earnings	—	14	104
Meals and Entertainment	31	56	40
Share Based Compensation	(145)	(127)	24
Change in Valuation Allowance	256	—	—
Change in Reserves Related to ASC 740 Liability	(352)	(34)	(20)
Domestic Production Deduction	—	—	(47)
Return to Provision Adjustment	(207)	58	(122)
TrojanLabel Earn Out Liability Adjustment	—	—	(316)
Global Intangible Low Taxed Income	107	—	—
R&D Credits	(209)	(218)	(537)
Foreign Derived Intangible Income	(107)	(53)	—
Foreign Tax Credits	(344)	(477)	(833)
Other	26	(11)	(30)
	$(389)	$1,578	$1,871

The Company's effective tax rate for 2020 was (28.4)% compared to 21.6% in 2019 and 36.3% in 2018. The decrease in the effective tax rate in 2020 from 2019 is primarily related to lower pre-tax income in 2020 compared to 2019 and 2018. Specific items decreasing the effective tax rate include foreign derived intangible income ("FDII"), the release of ASC 740 liabilities, R&D credit utilization, and return to provision adjustments. This decrease was offset by valuation allowances recorded on unbenefited losses in China and on carryforward foreign tax credits expected to expire unused.

The decrease in the effective tax rate for 2019 as compared to 2018 is primarily related to impacts of the Tax Act including the reduction in the statutory tax rate from 35% to 21% along with the absence of the one-time U.S. deferred remeasurement and Transition Tax charges. 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 impacting the fiscal 2018 effective tax rate.

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:

	January 31	
(In thousands)	2020	2019
Deferred Tax Assets:		
Inventory	$ 2,094	$ 1,800
Honeywell Royalty Liability	2,583	3,146
State R&D Credits	1,496	1,305
Share-Based Compensation	582	493
Compensation Accrual	159	155
Warranty Reserve	205	201
Unrecognized State Tax Benefits	116	133
Deferred Service Contract Revenue	111	91
Bad Debt	165	101
Net Operating Loss	443	505
Foreign Tax Credit	113	—
Other	295	142
	8,362	8,072
Deferred Tax Liabilities:		
Intangibles	776	2,660
Accumulated Tax Depreciation in Excess of Book Depreciation	1,002	982
Other	188	238
	1,966	3,880
Subtotal	6,396	4,192
Valuation Allowance	(1,752)	(1,304)
Net Deferred Tax Assets	$ 4,644	$ 2,888

The valuation allowance of $1.8 million at January 31, 2020 and $1.3 million at January 31, 2019 related to domestic research and development tax credit carryforwards, foreign tax credit carryforwards, and net operating loss carryforwards in China, all of which are expected to expire unused. The valuation allowance increased $0.5 million in 2020 due to the generation of domestic research and development credits, and foreign tax credits in excess of the Company's ability to currently utilize them. The Company also recorded a full valuation allowance against the carryforward net operating losses in China, as the future realization is not reasonably assured. The Company has reached these conclusions after considering the availability of taxable income in prior carryback years, tax planning strategies, and the likelihood of future taxable income and credits exclusive of reversing temporary differences and carryforwards in the relevant jurisdictions.

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)	2020	2019	2018
Balance at February 1	$ 618	$ 665	$ 708
Increases in current period tax positions	2	7	55
Reductions related to lapse of statutes of limitations	(26)	(54)	(98)
Reductions related to settlement with tax authorities	(232)	—	—
Balance at January 31	$ 362	$ 618	$ 665

During fiscal 2020, the Company recognized $114,000 of income and $8,000 and $24,000 of expense in 2019 and 2018, respectively, 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 $0.3 million and $0.5 million at the end of January 31, 2020 and 2019, respectively.

The Company and its subsidiaries file income tax returns in U.S. federal jurisdictions, various state jurisdictions, and various foreign jurisdictions. The Company was previously under audit by the IRS for the tax years ended January 31, 2015, 2016, and 2017. On June 6, 2019, the Company received formal communication regarding the close of the audit with no additional changes made by the IRS. Therefore, the Company's reserves for federal uncertain tax positions relating to the years in question have been released. The Company released $232,000 relating to the federal tax exposure for the years previously under audit and $74,000 of related interest (net of federal benefit) and penalties.

The Company was also notified of an income tax audit from the state of Rhode Island, but, no significant items have been raised at this time other than information requests. No assessments have been made as of January 31, 2020.

U.S. income taxes have not been provided on $4.9 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 15—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 PI segment produces an array of high-technology digital color and monochrome label printers and mini presses, labeling software and supplies 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. The T&M segment also includes the Company's line of aerospace flight deck and cockpit printers.

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.

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		
	2020	2019	2018	2020	2019	2018	2020	2019	2018
Product Identification	$ 88,116	$ 86,786	$ 81,681	$ 7,509	$ 7,910	$10,561	8.5%	9.1%	12.9%
T&M	45,330	49,871	31,720	6,281	11,933	3,754	13.9%	23.9%	11.8%
Total	$133,446	$136,657	$113,401	13,790	19,843	14,315	10.3%	14.5%	12.6%
Corporate Expenses				11,357	11,123	8,903			
Operating Income				2,433	8,720	5,412			
Other Expense, Net				(1,063)	(1,412)	(255)			
Income Before Income Taxes				1,370	7,308	5,157			
Income Tax Provision (Benefit)				(389)	1,578	1,871			
Net Income				$ 1,759	$ 5,730	$ 3,286			

No customer accounted for greater than 10% of net revenue in fiscal 2020, 2019 or 2018.

Other information by segment is presented below:

(In thousands)	Assets	
	2020	2019
Product Identification	$ 55,427	$ 51,639
T&M	56,988	59,702
Corporate*	4,249	7,642
Total	$ 116,664	$ 118,983

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

(In thousands)	Depreciation and Amortization			Capital Expenditures		
	2020	2019	2018	2020	2019	2018
Product Identification	$1,928	$1,888	$1,536	$2,001	$1,935	$1,497
T&M	4,356	4,264	2,458	905	710	707
Total	$6,284	$6,152	$3,994	$2,906	$2,645	$2,204

Geographical Data

Presented below is selected financial information by geographic area:

(In thousands)	Revenue 2020	Revenue 2019	Revenue 2018	Long-Lived Assets* 2020	Long-Lived Assets* 2019
United States	$ 83,671	$ 83,668	$ 69,795	$ 34,072	$ 36,750
Europe	29,617	31,574	29,948	2,544	3,223
Asia	8,316	8,207	3,808	—	—
Canada	5,719	6,692	5,373	35	81
Central and South America	4,145	4,147	3,402	—	—
Other	1,978	2,369	1,075	—	—
Total	$ 133,446	$ 136,657	$ 113,401	$ 36,651	$ 40,054

* Long-lived assets exclude goodwill assigned to the T&M segment of $4.5 million at both January 31, 2020 and 2019 and $7.5 million and $7.8 million assigned to the PI segment at January 31, 2020 and 2019, respectively.

Note 16—Employee Benefit Plans

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 each year in fiscal 2020, 2019 and 2018.

Note 17—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. 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)	2020	2019	2018
Balance, beginning of the year	$ 832	$ 575	$ 515
Provision for Warranty Expense	1,733	1,680	1,294
Cost of Warranty Repairs	(1,715)	(1,423)	(1,234)
Balance, end of the year	$ 850	$ 832	$ 575

Note 18—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.

During the years ended January 31, 2020, 2019 and 2018, one vendor accounted for 21.2%, 21.6% and 31.3% of purchases, and 28.0%, 28.7% and 26.6% of accounts payable, respectively, as of January 31, 2020, 2019 and 2018.

Note 19—Commitments and Contingencies

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 20—Fair Value Measurements

Assets and Liabilities Recorded at Fair Value on a Recurring Basis

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

Assets measured at fair value:	Fair value measurement at January 31, 2020				Fair value measurement at January 31, 2019			
(in thousands)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Interest Rate Swap Contract (included in Other Assets)	$ —	$ —	$ —	$ —	$ —	$ 85	$ —	$ 85
Total assets	$ —	$ —	$ —	$ —	$ —	$ 85	$ —	$ 85

Liabilities measured at fair value:	Fair value measurement at January 31, 2020				Fair value measurement at January 31, 2019			
(in thousands)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cross-Currency Interest Rate Swap Contract (included in Other Long-Term Liabilities)	$ —	$ 250	$ —	$ 250	$ —	$ 600	$ —	$ 600
Interest Rate Swap Contract (included in Other Long-Term Liabilities)	—	96	—	96	—	—	—	—
Earnout Liability (included in Other Liabilities)	—	—	14	14	—	—	14	14
Total liabilities	$ —	$ 346	$ 14	$ 360	$ —	$ 600	$ 14	$ 614

We use the market approach to measure fair value of our derivative instruments. 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 fair value of the earn out liability incurred in connection with the Company's 2017 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 initial 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.

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, 2020				
(In thousands)	Level 1	Level 2	Level 3	Total	Carrying Value
Long-Term Debt and Related Current Maturities	$ —	$ —	$13,258	$13,258	$13,034

	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

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 21—Subsequent Event

On March 11, 2020, the World Health Organization announced that COVID-19, a respiratory illness, caused by a novel coronavirus first identified in China, is a pandemic. COVID-19 has spread to many of the countries in which we, our customers, our suppliers and our other business partners conduct business. Governments in affected regions have implemented, and may continue to implement, safety precautions which include quarantines, travel restrictions, business closures, cancellations of public gatherings and other measures as they deem necessary. Many organizations and individuals, including the Company and its employees are taking additional steps to avoid or reduce infection, including limiting travel and staying home from work. These measures are disrupting normal business operations both in and outside of affected areas and have had significant negative impacts on businesses and financial markets worldwide.

The Company continues to monitor its operations and government recommendations and has made modifications to its normal operations because of the COVID-19 outbreak, including requiring most of its non-production related team members to work remotely. The Company has maintained a substantial portion of its manufacturing operational capacity at its primary manufacturing facility located at West Warwick, Rhode Island, as well as its manufacturing facilities in Canada and Germany, at this time, and has instituted heightened cleaning and sanitization standards and several health and safety protocols and procedures to safeguard its team members.

The COVID-19 outbreak has caused the Company to experience a number of adverse impacts, including reductions in demand for its products, delays and cancellations of orders for its products, difficulties in obtaining raw materials and components for its products, shortages of labor to manufacture products, inefficiencies caused by remote worker's difficulties in performing their normal work outputs, closures of the facilities of some of its suppliers and customers, and delays in collecting accounts receivable. Disruptions in the capital markets as a result of the COVID-19 outbreak may also adversely affect the Company if these impacts continue for a prolonged period and the Company needs additional liquidity.

The rapid development and uncertainty of the impacts of the COVID-19 pandemic precludes any prediction as to the ultimate adverse impact of the COVID-19 outbreak on the Company's business. However, COVID-19 and the measures taken to contain it present material uncertainty and risk with respect to the Company's performance and financial results. In particular, the aerospace industry, which the Company serves through its aerospace printer product line, has been significantly disrupted by the COVID-19 outbreak, both inside and outside of the United States. The decline in air travel and the impact of that decline on demand for the Company's products from its airplane manufacturing customers, the airlines to which it sells directly and through the manufacturers, and the repair and overhaul market and the market for the paper consumed in the printers, could have a material adverse impact on the Company's financial results.

In April 2020, the Company applied for a loan in the amount of approximately $4.4 million from Bank of America, N.A. pursuant to the Paycheck Protection Program administered by the United States Small Business Administration and authorized by the Keeping American Workers Employed and Paid Act, which is part of the Coronavirus Aid, Relief, and Economic Security Act, enacted on March 27, 2020. There can be no assurance that the Company will receive any or all of the requested loan proceeds under this program.

SUPPLEMENTARY DATA

Quarterly Financial Information (Unaudited)

	2020				2019			
(In thousands, except per share data)	Q1	Q2	Q3	Q4	Q1 (1)	Q2	Q3	Q4 (2)
Revenue	$36,181	$33,468	$33,318	$30,479	$31,487	$33,807	$34,196	$37,167
Cost of Revenue	21,942	21,491	21,021	20,234	19,377	20,408	20,288	22,585
Gross Profit	14,239	11,977	12,297	10,245	12,110	13,399	13,908	14,582
	39.4%	35.8%	36.9%	33.6%	38.5%	39.6%	40.7%	39.2%
Operating Expenses (3):								
Selling & Marketing	$ 6,765	$ 6,413	$ 6,944	$ 6,762	$ 6,500	$ 6,397	$ 6,587	$ 6,858
Research & Development	2,007	1,785	2,076	2,216	1,692	2,029	2,123	1,969
General & Administrative	2,999	2,616	2,830	2,912	2,653	2,808	2,836	2,825
Total Operating Expenses	11,771	10,814	11,850	11,890	10,845	11,234	11,546	11,652
Operating Income	2,468	1,163	447	(1,645)	1,265	2,165	2,362	2,930
	6.8%	3.5%	1.3%	(5.4)%	4.0%	6.4%	6.9%	7.9%
Other Expense, Net	(368)	(183)	(238)	(275)	(270)	(512)	(538)	(92)
Income (Loss) Before Taxes	2,100	980	209	(1,920)	995	1,653	1,824	2,838
Income Tax (Benefit) Provision	400	29	(247)	(572)	181	459	407	532
Net Income (Loss)	$ 1,700	$ 951	$ 456	$ (1,348)	$ 814	$ 1,194	$ 1,417	$ 2,306
Net Income (Loss) per Common Share—Basic	$ 0.24	$ 0.14	$ 0.06	$ (0.19)	$ 0.12	$ 0.17	$ 0.21	$ 0.33
Net Income (Loss) per Common Share—Diluted	$ 0.23	$ 0.13	$ 0.06	$ (0.19)	$ 0.12	$ 0.17	$ 0.20	$ 0.32

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 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) 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,				
2020	$ 521	$ 546	$ (211)	$ 856
2019	$ 377	$ 310	$ (166)	$ 521
2018	$ 266	$ 119	$ (8)	$ 377

(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.

Exhibit 4.2

DESCRIPTION OF SECURITIES REGISTERED UNDER SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

The following description of our common stock is intended as a summary only and, therefore, is not a complete description of our common stock. This description is based upon, and is qualified by reference to, our restated articles of incorporation, our by-laws and applicable provisions of Rhode Island Business Corporation Act. We refer you to the applicable provisions of our restated articles of incorporation, our by-laws and the Rhode Island Business Corporation Act for a complete statement of the terms and rights of our capital stock. This description shall be deemed to be updated by any report or amendment thereto that we file with the Securities and Exchange Commission for the purpose of updating this description.

Our authorized common stock consists of 13,000,000 shares of common stock, par value $0.05 per share. We also have 100,000 shares of authorized, undesignated preferred stock, par value $10.00 per share.

Common Stock

Voting Rights.

The holders of our common stock are entitled to voting rights for the election of directors and for other purposes, subject to any voting rights which may in the future be granted to subsequently created series of preferred stock. Each holder of common stock is entitled to one vote for each share held on all matters to be voted upon by our shareholders.

Dividend Rights.

The holders of outstanding shares of our common stock are entitled to receive dividends when and if declared by our Board of Directors out of any funds legally available.

Liquidation Rights.

Subject to the payment of liabilities and obligations, any remaining assets or proceeds are to be distributed to holders of our common stock according to their respective rights and interests in the event of our liquidation, dissolution or winding up.

Preemptive Rights.

Holders of our common stock do not have preemptive or any other right to subscribe for or acquire any capital stock of any class which may be issued, sold or otherwise disposed of by the us.

Preferred Stock

We are authorized to issue 100,000 shares of preferred stock. As of December 31, 2019, we did not have any outstanding shares of preferred stock.

Our board of directors may issue shares of preferred stock in one or more series and may establish from time to time the number of shares to be included in each series and the designation, preferences and relative, participating, optional or other special rights, and qualifications, limitations or restrictions of each series, and any qualifications, limitations or restrictions thereof. These matters will be fixed by a certificate of designations relating to the series.

An issuance of preferred stock may have the effect of delaying or preventing a change in control. An issuance of preferred stock could decrease the amount of earnings and assets available for distribution to the holders of common stock or diminish the relative rights and powers, including voting rights, of the holders of common stock. The issuance of preferred stock could have the effect of decreasing the market price of our common stock.

Provisions of Our By-laws That May Have Anti-Takeover Effects

Shareholders wishing to nominate persons for election to our Board of Directors at an annual meeting or to propose any business to be considered by our shareholders at an annual meeting must comply with certain advance notice and other requirements set forth in our by-laws.

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. 333-231953, 333-143854, 333-204619, 333-225404 and 2-81081) on Form S-8 of AstroNova, Inc. of our report dated April 10, 2020, 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, 2020.

/s/ Wolf & Company, P.C.

Boston, Massachusetts
April 10, 2020

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, 2020

/s/ GREGORY A. WOODS

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

Exhibit 31.2

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, 2020

/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, 2020, 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, 2020

/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, 2020, 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, 2020

/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.