



SemiLEDs Corporation
2022 Annual Report

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

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended August 31, 2022

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: 001-34992

SemiLEDs Corporation

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

3F, No.11 Ke Jung Rd., Chu-Nan Site,
Hsinchu Science Park, Chu-Nan 350,
Miao-Li County, Taiwan, R.O.C.
(Address of principal executive offices)

20-2735523

(I.R.S. Employer
Identification Number)

350

(Zip Code)

Registrant's telephone number including area code: +886-37-586788

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.0000056	LEDS	The Nasdaq Stock 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 electronically 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, 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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

Indicate by check mark whether the Registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

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

The aggregate market value of voting stock held by non-affiliates of the registrant as of February 28, 2022 (the last business day of the registrant's most recently completed second fiscal quarter), based upon the closing price of the common stock reported by the NASDAQ Capital Market on such date, was approximately \$10 million. Shares of common stock held by each executive officer and director of the registrant and by each person who owns 10% or more of the registrant's outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

Number of shares outstanding of the registrant's Common Stock, par value \$0.0000056 per share, as of October 31, 2022: 4,832,346

SemiLEDs Corporation
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Smaller Reporting Company— Scaled Disclosure

Pursuant to Item 10(f) of Regulation S-K promulgated under the Securities Act of 1933, as amended, as indicated herein, we have elected to comply with the scaled disclosure requirements applicable to “smaller reporting companies.”

PART I.

Forward-looking Statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements other than statements of historical facts contained in this Form 10-K, including statements regarding the future results of operations of SemiLEDs Corporation, or “we,” “our” or the “Company,” and financial position, strategy and plans, and our expectations for future operations, are forward-looking statements. Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking statements. The words “believe,” “may,” “should,” “plan,” “potential,” “project,” “will,” “estimate,” “continue,” “anticipate,” “design,” “intend,” “expect” and similar expressions are intended to identify forward-looking statements. We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, strategy, short-term and long-term business operations and objectives, and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in Item 1A, Risk Factors. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this Form 10-K may not occur, and actual results and the timing of certain events could differ materially and adversely from those anticipated or implied in the forward-looking statements as a result of many factors.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. We have not assumed any obligation to, and you should not expect us to, update or revise these statements because of new information, future events or otherwise.

Item 1. Business

Company Overview

We develop, manufacture and sell light emitting diode (LED) chips and LED components, LED modules and systems. Our products are used for general lighting and specialty industrial applications, including ultraviolet, or UV, curing of polymers, LED light therapy in medical/cosmetic applications, counterfeit detection, germicidal and viricidal devices LED lighting for horticulture applications, architectural lighting and entertainment lighting.

Utilizing our patented and proprietary technology, our manufacturing process begins by growing upon the surface of a sapphire wafer, or substrate, several very thin separate semiconductive crystalline layers of gallium nitride, or GaN, a process known as epitaxial growth, on top of which a mirror-like reflective silver layer is then deposited. After the subsequent addition of a copper alloy layer and finally the removal of the sapphire substrate, we further process this multiple-layered material to create individual vertical LED chips.

We package our LED chips into LED components, which we sell to distributors and a customer base that is heavily concentrated in a few select markets, including Taiwan, the United States, the Netherlands, Germany and India. We also sell our “Enhanced Vertical,” or EV, LED product series in blue, white, green and UV in selected markets. We sell our LED chips to packagers or to distributors, who in turn sell to packagers. Our lighting products customers are primarily original design manufacturers, or ODMs, of lighting products and the end-users of lighting devices. We also contract other manufacturers to produce for our sale certain LED products, and for certain aspects of our product fabrication, assembly and packaging processes, based on our design and technology requirements and under our quality control specifications and final inspection process.

We have developed advanced capabilities and proprietary know-how in:

- reusing sapphire substrate in subsequent production runs;
- optimizing our epitaxial growth processes to create layers that efficiently convert electrical current into light;
- employing a copper alloy base manufacturing technology to improve our chip’s thermal and electrical performance;
- utilizing nanoscale surface engineering to improve usable light extraction;
- manufacturing extremely small footprint LEDs with optimized yield, ideal for Mini LED applications;
- developing a LED structure that generally consists of multiple epitaxial layers which are vertically-stacked on top of a copper alloy base;
- developing low cost Chip Scaled Packaging (CSP) technology; and
- developing multi-pixel Mini LED packages for commercial displays.

These technical capabilities enable us to produce LED chips, LED component, LED modules and System products. We believe these capabilities and know-how should also allow us to reduce our manufacturing costs and our dependence on sapphire, a costly raw material used in the production of sapphire-based LED devices.

We were incorporated in the State of Delaware on January 4, 2005. We are a holding company for various wholly owned subsidiaries. SemiLEDs Optoelectronics Co., Ltd., or Taiwan SemiLEDs, is our wholly owned operating subsidiary, where a substantial portion of our assets are held and located, and where a portion of our research, development, manufacturing and sales activities take place. Taiwan SemiLEDs owns a 97.37% equity interest in Taiwan Bandaoti Zhaoming Co., Ltd., formerly known as Silicon Base Development, Inc., which is engaged in the research, development, manufacture and a substantial portion of marketing and sale of LED products, including lighting fixtures and systems, and is where most of our employees are based.

Our Technology

Our proprietary technology integrates copper alloy in a vertical LED structure. We first grow epitaxial layers on a sapphire wafer. The epitaxial layers are multiple doped GaN layers. At this point in the process, our structure has the following order: (i)sapphire; (ii)n-doped GaN (N-GaN); (iii)multi-quantum well layers (MQWs); and (iv)p-doped GaN (P-GaN). Next, we deposit and define (by patterning and etching) multiple metal layers on the P-GaN layer. These metal layers consist of several different mirror layers and copper alloy layers, which are deposited on top of the mirror layers by electroplating. The copper alloy metal layers, which are collectively called the P-Contact Metal Layer, create low resistance contact with the P-GaN layer.

We then remove the sapphire wafer from the N-GaN layer through laser radiation, and the sapphire wafer is removed from the production line and recycled. The remaining device structure—consisting of the P-Contact Metal Layer on top of the epitaxial layers—is then ready for further processing. To complete our LED device structure, we then deposit and define additional metal layers on top of the N-GaN layers to achieve low resistance contact with the N-GaN layers. These additional metal layers are collectively called the N-Contact Metal Layer. After this process, our final LED chip structure is: (i)copper alloy metal layer; (ii)P-GaN; (iii)MQWs; (iv)N-GaN; and (v) N-contact Metal layer. Our final LED chip structure is diced into individual LED chips and then separated, tested and binned according to customer specifications, such as wavelength (color) and brightness. When a constant electrical current flows from our P-Contact Metal Layer to our N-contact Metal layer, light is generated in the MQWs and emitted through the surface of the N-GaN.

We believe that most conventional GaN LEDs grown on sapphire wafers are based on a lateral design. However, we believe a superior combination of both light output efficiency and heat removal is realized in a vertical LED chip design with a copper alloy metal structure. Among pure metals at room temperature, copper has the second highest electrical and thermal conductivity, after silver. Heat is generated by passing electrical current through resistive materials. In our vertical LED chips, electrical current flows from the low resistance copper alloy base to the epitaxial layers also with low electrical resistance, thereby resulting in lower heat generation. Furthermore, due to the high thermal conductivity of the copper alloy layer, the heat generated in our device is effectively conducted to the packaging materials, where it can be dissipated through a heat sink. The resulting lower operating temperature helps to maintain LED device performance and reliability.

Once light is generated in the MQWs of our LED chips, the light is emitted out of the N-GaN surface. Our chip uses a high reflectivity metal between the copper alloy layer and the P-GaN surface that acts as a mirror to reflect light more effectively out of the internal structure of the device. In contrast, in conventional sapphire-based LED devices, leakage can occur when light escapes through the sides of the substrate or is converted to heat due to the higher internal resistance of the device. Furthermore, by optimizing the internal structure and surface of our epitaxial layers through our proprietary nanosurface engineering, a greater portion of light is extracted after generation within the device, whereas conventional sapphire-based LED devices have a semi-transparent contact layer (STCL) which absorbs and reduces the amount of light that can be emitted vertically from the chip. We are also developing various packaging technologies, such as component cost reducing Advanced Packaging Technology called CSP, Multi-Channel Emitters (MCE) and Chip-On-Board (COB).

Our Products

LED Chips

We produce and purchase a wide variety of blue, white, green and UV LED chips, including our EV LED product series, currently ranging from chip sizes of 380 microns, or μm , by $380\mu\text{m}$ to $1520\mu\text{m}$ by $1520\mu\text{m}$. We sell our LED chips to packaging customers or to distributors, who in turn sell to packagers. Our LED chips are used primarily for applications in the specialty lighting market, including commercial, and industrial sectors. Our LED chips may be used in specialty industrial applications, such as UV curing of polymers, LED light therapy in medical/cosmetic applications, counterfeit detection, LED lighting for horticulture applications, and architectural lighting. Currently, we focus mostly on UV LED applications.

LED Components

We currently package a portion of our LED chips into LED components for sale to distributors and end-customers in selected markets. The majority of our LED components use chips that are greater than 860µm by 860µm, focusing on high wattage (>3W) applications. Our packaged products can be categorized into three different groups: UV, Multi-Channel Emitter (MCE), automotive and Specialty lighting. Besides the standard products, we provide customization service for all market segments. Our UV LED product portfolio ranges from two to 260 electrical watts, and are designed for industrial applications such as printing, coating, curing, and medical/cosmetic uses. The MCE packages target entertainment, architectural, aquarium and horticultural lighting sectors. Variations of four, seven, 12, 16 channel LEDs allow users to control each LEDs separately to produce all colors in the visible light spectrum. We use specialized chip bonding technology to ensure minimal chip-to-chip distance in order to deliver optimized color mixing capability in compact packages. Specialty lighting is mainly in the infrared spectrum with options of 30, 60, 90 and 120 degree view angles. These are used in surveillance, IP cameras and night vision applications.

To differentiate ourselves from other LED package manufacturers, we are putting more resources towards module and system design. Along with our technical know-how in the chip and package sectors, we are able to further integrate electrical, thermal and mechanical manufacturing resources to provide customers with one-stop system services. Services include design, prototyping, OEM and ODM. Key markets that we set to target at the system end include different types of UV LED industrial printers, aquarium lighting, medical applications, niche imaging light engines, horticultural lighting and high standard commercial lighting. Recently, we introduced multi-pixel Mini-LED package (16 RGB pixels in one package) for fine pitch Mini-LED display market. In 2019, we expanded our UVC portfolio to disinfection markets.

Our packaging process includes chip bonding, wire bonding, phosphor coating, encapsulation, scribing, dicing and testing. We may, from time to time, establish packaging operations in selected markets for sale to distributors and end-customers in such markets. We also contract with other manufacturers to produce for our LED components based on our design and technology requirements and under our quality control specifications and final inspection process.

Lighting Products

We design, assemble and sell lighting fixtures and systems for general lighting applications, including commercial, residential and industrial lighting. Our lighting products consist primarily of LED luminaires and LED retrofits. Our lighting product customers are primarily ODMs of lighting products and the end-users of lighting devices. Revenues from sales of our lighting products represented 8% and 15% of our revenues for the years ended August 31, 2022 and 2021, respectively.

OEM/ODM Services

We provide design and manufacturing services at the modular and system level. Currently, most of the design projects involve high power UV LED lamps to be incorporated/retrofitted into large scale press equipment. Besides hardware, we also provide software development to lamp control and equipment-to-lamp signal communication. With our design capability and high precision packaging capabilities, Taiwan Bandaoti Zhaoming Co., Ltd., formerly known as Silicon Base Development, Inc., assisted in the design and manufacturing of transceiver modules to be used for ADAS (Advanced Driver Assistance Systems) applications.

Manufacturing

Our manufacturing operations are located in Taiwan. Since late 2011, we have suffered from the underutilization of our manufacturing capacity, primarily for our LED chips. Consequently, a portion of our manufacturing equipment was idled, resulting in significant excess capacity charges. We also use contract manufacturers to produce certain LED products, and for certain aspects of our product fabrication, assembly and packaging processes, based on our design and technology requirements and under our quality control specifications and final inspection process. We have moved toward a fabless business model in which we would utilize foundry fabs to ODM our chips using our developed technology. As part of the restructuring, we continue to explore opportunities to sell our chip manufacturing equipment, which will help us to reduce the idle capacity costs. As part of our cost reduction efforts, we moved and consolidated our LED packaging facility to our headquarters in Chunan, Taiwan in February 2018. While we intend to focus on managing our costs and expenses. Over the long term, we expect to be required to invest substantially in LED component products development and production equipment if we are to grow.

Raw Materials and Components

We use the following raw materials in our LED chip manufacturing: metal organics, sapphire, copper alloy, gold slugs, sodium gold sulfite, aluminum granules and electrolytic nickel, among others. We use the following assembly materials in the production of our LED component products: gold bond wire, lead frame, ceramic substrate, phosphor, silicon zener-diode, silicone rubber, eutectic (AuSn) bonding material and silver paste, among others. We also purchase industrial and general chemicals and gases for the manufacture of both our LED chips and LED components. We do not manufacture our lighting products from the raw materials, but we assemble our lighting products from individual components, such as LED emitters, electronic components, printed circuit boards, heat-sink, lenses and other metal and plastic components.

We purchase raw materials and components from a wide range of suppliers around the world. The raw materials and components we use are readily available. We have two or more suppliers for a majority of the raw materials we use. Historically, we have never experienced any significant delay or shortage in the supply of our raw materials and components. While the COVID-19 pandemic did not have a material impact on our supply chain, it has the potential to have a meaningful impact on our supply chain if the factories that produce our raw materials and components are disrupted, temporarily closed or experience worker shortages. We may also see disruptions or delays in shipments and negative impacts to pricing of certain products as a result of such disruptions.

Quality Management

We have implemented quality control measures at each stage of our operations, including obtaining supplier qualifications, inspecting incoming raw materials and random testing during our production process, to ensure consistent product yield and reliability. We test all new processes and new products prior to commercial production. We also inspect all final products prior to deliver to our customers to ensure that production standards are met. If we encounter defects, we conduct an analysis in an effort to identify the cause of the defect and take appropriate corrective and preventative measures. We provide standard product warranties on our products, which generally range from three months to two years. Our manufacturing facility located in Hsinchu Science Park, Taiwan, are certified in compliance with ISO 9001:2015. The facility is subject to periodic inspection by the relevant governmental authorities for safety, environmental and other regulatory compliance.

We require all of our employees involved in the manufacturing and engineering process to receive quality control training, according to a certification system depending on the level of skills and knowledge required. The training program is designed to ensure consistent and effective application of our quality control procedures.

Sales and Marketing

We market and sell our products through both our direct sales force and distributors. We primarily sell our LED components to distributors and end-customers in selected markets. Our packaging customers package our LED chips and sell the packaged product to distributors or end-customers. Our distributors resell our LED chips either to packagers or to end-customers. We sell our LED chips to packagers and distributors. Our lighting product customers consist primarily of ODMs of lighting products and the end-users of lighting devices with the sales made by our direct sales force. For modules and systems, we mainly deal with end-customers directly.

Our direct sales force is primarily based in Taiwan. We assign our sales personnel to different geographic regions so that they can keep abreast of trends in specific markets. We plan to continue expanding our sales coverage in Asia as we grow our business. In addition, we may enter into strategic relationships with companies in Taiwan or other countries that we believe may provide strategic value to us.

We focus our marketing efforts on brand awareness, product advantages and qualified lead generation. We rely on a variety of marketing strategies, including participation in industry conferences and trade shows, to share our technical message with customers, as well as public relations, industry research and online advertising.

Customers

We package our LED chips into LED components, which we sell to distributors and end-customers in selected markets. In addition, we sell a portion of our LED chips products to packaging customers and LED chip distributors.

We have historically derived a significant portion of our revenues from a limited number of customers. For the years ended August 31, 2022 and 2021, our top ten customers collectively accounted for 88% and 82%, respectively, of our revenues. Some of our largest customers and what we produce, or have produced, for them have changed from quarter to quarter primarily as a result of the timing of discrete, large project-based purchases and broadening customer base, among other things. For the years ended August 31, 2022 and 2021, sales to our three largest customers, in the aggregate, accounted for 59% and 52% of our revenues, respectively. For the year ended August 31, 2022, sales to Revlon, Inc. and INDEL Distribution B.V. accounted for 28% and 18% of our total revenues, respectively. For the year ended August 31,

2021, sales to Revlon, Inc. and INDEL Distribution B.V. accounted for 15% and 27% of our total revenues, respectively. In the same periods, Cepton Inc., an U.S. company focusing on LiDAR products, is a top ten customer.

Our revenues are concentrated in a few select markets. We expect that our revenues will continue to be substantially derived from these countries for the foreseeable future. Given that we are operating in a rapidly changing industry, our sales in specific markets may fluctuate from quarter to quarter. Therefore, our financial results will be impacted by general economic and political conditions in these markets.

Intellectual Property

Our ability to compete successfully depends upon our ability to protect our proprietary technologies and other confidential information. We rely, and expect to continue to rely, on a combination of confidentiality and license agreements with our employees, licensees and third parties with whom we have relationships, and trademark, copyright, patent and trade secret protection laws, to protect our intellectual property, including our proprietary technologies and trade secrets.

As of August 31, 2022, we had 104 patents issued and 13 patents pending with the United States Patent and Trademark Office covering various aspects of our core technologies. As of August 31, 2022, we also had 118 patents issued and 12 patents pending before patent and trademark offices outside the United States. Of these 222 issued patents, 122 expire between 2023 and 2027, 84 expire between 2028 and 2032, 14 expire between 2033 and 2039, and two expire after 2039. Forty-seven of our issued patents are design patents and one of our pending patents is a design patent. We believe that factors such as the technological and innovative abilities of our personnel, the success of our ongoing product development efforts and our efforts to maintain trade secret protection are more important than patents in maintaining our competitive position. We pursue the registration of certain of our trademarks in the United States, Taiwan and China and have been granted trademarks with respect to “SemiLEDs” in the United States, and “MvpLED” in China.

Our industry is characterized by frequent intellectual property litigation involving patents, trade secrets, copyrights, mask designs, among others. From time to time, third parties may allege that our products infringe on their intellectual property rights. Defending against any intellectual property infringement claims would likely result in costly litigation and ultimately may lead to our not being able to manufacture, use or sell products found to be infringing. Furthermore, other third parties may also assert infringement claims against our customers with respect to our products, or our customers’ products that incorporate our technologies or products. Any such legal action or the threat of legal action against us, or our customers, could impair such customers’ continued demand for our products. This could prevent us from growing or even maintaining our revenues, or cause us to incur additional costs and expenses, and adversely affect our financial condition and results of operations. See “Risk Factors— Risks Related to Our Business— Intellectual property claims against us or our customers could subject us to significant costs and materially damage our business and reputation.”

Research and Development

We focus our research and development efforts on our design methodology and process technology for our LED products. We also focus on improving our production yields and increasing wafer sizes to lower our production costs. Our research and development team work closely with our manufacturing team. We conduct our research and development activities at our manufacturing facilities in Taiwan. Our future research and development strategy will primarily focus on developing new products in collaboration with our ODM partners utilizing our vertical technology and our expertise in the manufacturing of LED components. We expect to be continually engineering new products and systems, as well as enhancements to existing products, to meet the needs of our customers. By leveraging the fabless business model, we expect to be able to minimize our own research and development costs associated with chip products, increase the scale of our business without increasing overhead and diversify our business risk among many sales channels.

Competition

We believe that our advanced technology helps us to compete in the innovative, intensely competitive and rapidly changing market of LED design and manufacturing. To succeed, however, we must continue to manufacture products that meet the demanding requirements of high performance at low costs. We do not account for a significant percentage of the total market volume today, and we face significant competition from other more established providers of similar products as well as from new entrants into our markets.

We compete with many LED chip manufacturers and LED packaging manufacturers. With respect to our LED chips and LED components, we primarily compete with Cree, Seoul Viosys Co., Ltd. or SVC, Everlight, LiteOn, LED Engin, Nichia Corporation, or Nichia, Philips (Lumileds), Osram-OS GmbH and Edison Opto Corporation, or Edison. We have a number of competitors that compete directly with us and are much larger than us, including, among others, Cree, Nichia, Philips (Lumileds) and Osram-OS GmbH. Several substantially larger companies, such as Philips (Lumileds) and Osram-OS GmbH, compete against us with a relatively small segment of their overall business. In addition, several large and well-capitalized semiconductor companies, such as Samsung Electronics Co., Ltd., or Samsung, LG Innotek Co., Ltd., or LG Innotek, have entered into the LED chip and UV market. These potential competitors have extensive experience in developing semiconductor chips, which is similar to the manufacturing process for LED chips and LED packaging. We are also aware of a number of well-funded private companies that are developing competing products. We will also compete with numerous smaller companies entering the market, some of whom may receive significant government incentives and subsidies pursuant to government programs designed to encourage the use of LED lighting and to establish LED-sector companies.

Some of our existing and potential competitors possess significant advantages, including longer operating histories, greater financial, technical, managerial, marketing, distribution and other resources, more long-standing and established relationships with our existing and potential customers, greater name recognition, larger customer bases and greater government incentives and support.

We believe that the key competitive factors in our markets are:

- consistently producing high-quality LED chips with high efficacy;
- providing a low total cost of ownership (i.e., cost, efficacy and lifespan) for end-customers;
- producing UVA LED for niche markets where customers value quality and performance more than cost;
- providing unique and high performance UV LED systems to replace mercury lamp;
- providing high precision packaging solutions to automotive industries to enable high accuracy demands for LiDAR applications, and
- our sales channels.

Competition in the markets for LED products is intense, and we expect that competition will continue to increase, thereby creating a highly aggressive pricing environment. Some of our competitors have in the past reduced their average selling prices, and the resulting competitive pricing pressures have caused us to similarly reduce our prices, accelerating the decline in the gross margin of our products. When prices decline, we must also write down the value of our inventory.

Government Regulation

In our research and development and manufacturing processes, we use a variety of hazardous materials and industrial chemicals. In each of the jurisdictions in which we operate, we are subject to a variety of laws and regulations governing the exposure to and storage, handling, emission, discharge and disposal of these materials or otherwise relating to the protection of the environment. Environmental laws and regulations are complex and subject to constant change, with a tendency to become more stringent over time. Failure to comply with any new or existing laws, whether intentional or inadvertent, could subject us to fines, penalties and other material liabilities to the government

or third parties, injunctions requiring the suspension of operations, redemption costs or other remedies, and the need for additional capital, equipment or other process requirements, any of which could have a material adverse effect on our business and reputation.

Human Capital Resources

Talent is the catalyst for our success. We are fortunate to have talented and outstanding employees. To retain talented people who share our goals and interests, we work hard to cultivate a dynamic and enjoyable work environment full of opportunities to learn new skills.

To that end, we aim to foster open communication between employees and management to create a sense of community and a shared purpose. We stress teamwork, and we believe that high-performing teams are crucial to our success. We encourage our employees to brainstorm, develop and refine new ideas to help us innovate and achieve our goals.

We award each employee according to their contributions. We use performance-based awards, including cash and equity such as stock options and restricted share units. We believe these equity awards create a sense of ownership for the employee and furthers employee commitment to the company's long-term vision, while simultaneously helping to retain talented employees.

As of August 31, 2022, we had approximately 126 employees. All of our employees are based in Taiwan. None of our employees are represented by a labor union. We consider relations with our employees to be good.

Financial Information about Geographic Areas

We derive a substantial portion of our revenue from product sales to international customers. For information concerning geographic areas of our customers and geographic information concerning our long-lived assets, see Note 11, "Product and Geographic Information," of the Notes to Consolidated Financial Statements in Item 8, Financial Statements and Supplementary Data, of this Annual Report. International operations expose us to risks that are different from operating in the United States, including foreign currency translation and transaction risk, risk of changes in tax laws, application of import/export laws and regulations and other risks described further in Item 1A, Risk Factors, of this Annual Report.

Available Information

Our website is www.semileds.com. We make available free of charge through our website our Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to those reports filed or furnished pursuant to Section 13 or 15(d) of the Exchange Act as soon as reasonably practicable after such materials are electronically filed with or furnished to the SEC. Our SEC reports can be accessed through the "Investors" section of our website. The information found on our website is not part of this or any other report we file with or furnish to the SEC. A copy of our Annual Report on Form 10-K is available without charge to stockholders upon written request to: Investor Relations, SemiLEDs Corporation, 3F, No.11 Ke Jung Rd., Chu-Nan Site, Hsinchu Science Park, Chu-Nan 350, Miao-Li County, Taiwan, R.O.C.

Item 1A. Risk Factors

A wide range of factors could materially affect our business, operating results and financial condition. The following factors and other information included in this Annual Report should be carefully considered. Although the risk factors described below are the ones management deems significant, additional risks and uncertainties not presently known to us or that we presently deem less significant may also impair our business operations. If any of the following risks actually occur, our business, operating results, and financial condition could be adversely affected. In that event, the trading price of our common stock could decline and you could lose part or all of your investment.

Risks Related to Our Business

We have incurred net losses in recent periods and may require additional financing. If financing is not available, we may be required to further downsize or discontinue operations.

We incurred net losses attributable to SemiLEDs stockholders of \$2.7 million and \$2.9 million for the years ended August 31, 2022 and 2021, respectively. We can give no assurance that we will not continue to incur net losses in future periods. Our revenue and operating results may continue to decline for a variety of reasons, some of which are described elsewhere in this “Risk Factors” section and are beyond our control. As of August 31, 2022, we had an accumulated deficit of \$184 million. And our cash and cash equivalents decreased to \$4.3 million at August 31, 2022, these facts and conditions raise substantial doubt about our ability to continue as a going concern, and our independent registered public accounting firm has included an explanatory paragraph regarding going concern qualification in its audit report. However, our management believes it has liquidity plan, as further described in elsewhere in this annual report that if executed successfully should provide sufficient liquidity to meet our obligations as they become due for a reasonable period of time. While we believe that these liquidity plan measures will be adequate to satisfy our liquidity requirements for the twelve months ending August 31, 2023, there is no assurance that the liquidity plan will be successfully implemented. Failure to successfully implement the liquidity plan, including issuing convertible notes to certain of our directors, may have a material adverse effect on our business, results of operations and financial position, and may adversely affect our ability to continue as a going concern. If we do not become consistently profitable, our accumulated deficit will grow larger and our cash balances will decline further, and we will require additional financing to continue operations. Any such financing may not be accessible on acceptable terms, if at all. If we cannot generate sufficient cash or obtain additional financing, we may be required to downsize our business further or discontinue our operations altogether.

We depend on contract manufacturing for portions of our supply chain. The inability of our contract manufacturers to produce products that satisfy our requirements may have a material adverse effect on our business.

From time to time, we may use contract manufacturers to produce products or some parts of our products. Our reliance on such contract manufacturers exposes us to a number of significant risks, including:

- reduced control over delivery schedules, quality assurance, manufacturing yields and production costs;
- lack of guaranteed production capacity or product supply; and
- the possible breach of the manufacturing agreement by the contract manufacturers because of factors beyond our control.

While the COVID-19 pandemic has not had a material impact on our supply chain to date, it could have a meaningful impact on our supply chain if the factories that produce our raw materials and components are disrupted, or production becomes delayed due to worker shortages. We may also see disruptions or delays in shipments and negative impacts to pricing of certain products as a result of such disruptions.

If these contract manufacturers fail to deliver products on time and at a satisfactory level of quality, we could have difficulties fulfilling our customer orders and our net revenues could decline. If our contract manufacturers were to become unable or unwilling to continue to manufacture our products at requested quality, quantity, yields and costs, or in a timely manner, our business and reputation could be seriously harmed. As a result, we would have to attempt to identify and qualify substitute manufacturers, which could be time consuming and difficult, and might result in unforeseen manufacturing and operations problems. In such events, our customer relationships, business, financial condition and results of operations would be adversely affected.

Our success depends on the successful development, introduction, commercialization and acceptance of new products and enhancements to existing product lines.

Rapid change and technical innovation characterize the LED chips and components market. Our success depends on the successful development, introduction, commercialization and acceptance of new products and enhancements to existing product lines. We have made and continue to make significant investments in growth initiatives. For example, beginning in 2017, we moved down the supply chain, supplying customers with full UV LED lamp systems. We expect to continue our efforts at further research and development of innovative products. We may need to spend more time and money than we expect to develop and introduce new products or enhancements and, even if we succeed, these new products or enhancements may not be sufficiently profitable for us to recover all or a meaningful part of our investment. In addition, our new products or enhancements may need certifications or require qualifications by our customers or potential customers. However, both of the certification and qualification processes are lengthy and uncertain and may negatively impact our sales and marketing efforts to sell or transition our customers to such new products or enhancements. Furthermore, once introduced, new products may adversely impact sales of our older generation products, or make them less desirable or even obsolete, and could adversely impact our revenues and operating results.

Our ability to successfully develop and introduce new products and product enhancements, and the revenues and costs associated with these efforts, are affected by our ability to (i) properly identify customer needs, (ii) prove the feasibility of new products, (iii) price our products competitively and profitably, (iv) accurately predict and control costs and yields associated with manufacturing the products, (v) manufacture and deliver new products timely and in sufficient volume, (vi) assist the customers in qualifying or adopting the new products

in a timely manner and (vii) anticipate and compete successfully with competitors. Even if we are successful, if a customer requires certain certifications for or new qualification process of our new products, the time when that customer will actually purchase our products and we will be able to receive revenue from that customer will be significantly delayed.

We derive a significant portion of our revenues from a limited number of customers, including distributor customers, and generally do not enter into long-term customer contracts. The loss of, or a significant reduction in purchases by, one or more of these customers, or the failure by one of these customers to pay, could adversely affect our operating results and financial condition.

We have historically derived a significant portion of our revenues from a limited number of customers, including distributor customers. For the years ended August 31, 2022 and 2021, our top ten customers collectively accounted for approximately 88% and 82%, respectively, of our revenues. Some of our largest customers and what we produce/have produced for them have changed from quarter to quarter primarily as a result of the timing of discrete, large project-based purchases and broadening customer base, among other things. For the years ended August 31, 2022 and 2021, sales to our three largest customers, in the aggregate, accounted for approximately 59% and 52% of our revenues, respectively. Revlon, our largest customer in 2021 and 2022 recently filed for Chapter 11 bankruptcy. If they are not able to successfully reorganize their business, our revenue and results could be adversely impacted.

The sales cycle from initial contact to confirmed orders with our customers is typically long and unpredictable. We typically enter into individual purchase orders with large customers, which can be altered, reduced or cancelled with little or no notice to us. We do not generally enter into long-term commitment contracts with our customers. As such, these customers may alter their purchasing behavior and reduce or cancel orders with little or no notice to us. Consequently, any one of the following events may cause material fluctuations or declines in our revenues:

- reduction, delay or cancellation of orders from one or more of our major customers;
- loss of one or more of our major customers and our failure to identify additional or replacement customers; and
- failure of any of our major customers to make timely payment for our products.

We may not be able to effectively develop, maintain and expand our sales and distribution channels, which could negatively affect our ability to expand our sales and business and damage our brand reputation.

As part of our strategy, we market and sell our products through third-party distributors in certain markets. We rely on these distributors to service end-customers, and our failure to maintain strong working relationships with such distributors could have a material adverse impact on our operating results and revenues from such jurisdictions and damage our brand reputation. If we are unable to effectively develop and expand our distribution channels, or do so in a timely manner, to ensure our products are reaching the appropriate customer base, our sales and results of operations may be adversely impacted. In addition, if we successfully develop these channels, we cannot guarantee that customers will accept our products or that we will be able to manufacture and deliver products in the timeline established by our customers. We have attempted to direct our efforts to areas of business where we see the best opportunity for the most profitable sales of our LED products, which includes primarily a focus on the UV LED market segment and placing a greater emphasis on the sale of LED components in selected markets where pricing pressure is significant, and pursuing new market opportunities that leverage our core competencies. We are now focused on developing as an end-to-end LED module solution supplier by providing our customers with high quality, flexible and more complete LED system solution, customer technical support and LED module/system design, as opposed to just providing customers with individual components. Continual introductions of new products and solutions, services, and enhancement of existing products and services, and effective servicing of customers are key to our competitive strategy. We also work to develop relationships with a select number of our customers to develop relationships which would continue to enhance our component product growth and profitability to complement our strategic focus. Our primary business objective is to provide our customers with a convenient, full-service, one-stop shopping solution for their needs by offering customized design services and high-quality products at good value. These strategies may negatively impact our revenues as we may not be able to develop and expand our customer base and distribution channels in a timely manner, among other reasons.

We do not control the activities of our distributors with respect to the marketing and sales of and customer service support for our products. Therefore, the reputation and performance of our distributors and the ability and willingness of our distributors to sell our products, uphold our brand reputation for quality, by providing, for example, high quality service and pre- and post-sales support, and their ability to expand their businesses and their sales channels are essential to the future growth of our business and has a direct and material impact on our sales and profitability in such jurisdictions. Also, as with our individual customers, we do not have long-term purchase commitments from our distributor customers, and they can therefore generally cancel, modify or reduce orders with little or no advance notice to us. As a result, any reductions or delays in, or cancellations of, orders from any of our distributors may have a negative impact on our sales and budgeting process.

In addition, we have entered and may from time to time enter into exclusivity or other restrictions or arrangements of a similar nature as part of our agreements with our distributors. Such restrictions or arrangements may significantly hinder our ability to sell additional products, or enter into agreements with new or existing customers or distributors that plan to sell our products, in certain markets, which may have a material adverse effect on our business, financial condition and results of operations.

Moreover, we may not be able to compete successfully against those of our competitors who have greater financial resources and are able to provide better incentives to distributors, which may result in reduced sales of our products or the loss of our distributors. The loss of any key distributor may force us to seek replacement distributors, and any resulting delay may be disruptive and costly.

We operate in highly competitive markets that are characterized by rapid technological changes and declining average selling prices. Competitive pressures from existing and new companies and/or damage to our brand may harm our business and operating results.

Competition in the markets for LED products is intense, and we expect that competition will continue to increase. Increased competition could result in increased pricing pressure, reduced profit margins, increased sales and marketing expenses, and failure to increase, or the loss of, market share, any of which would likely seriously harm our business, operating results and financial condition. Competitors may reduce

average selling prices faster than our ability to reduce costs, and competitive pricing pressures may accelerate the rate of decline of our average selling prices. To address increased pricing pressure, we have improved and increased our production yields to reduce the per-unit cost of production for our products. However, such cost savings currently have a limited impact on our gross profit, as we have suffered from the underutilization of manufacturing capacity and must absorb a high level of fixed costs, such as depreciation.

We compete with many LED chip manufacturers and LED packaging manufacturers. With respect to our LED chips and LED components, we primarily compete with Cree, SVC, Everlight, LiteOn, LED Engin, Nichia, Philips (Lumileds), Osram-OS GmbH and Edison. We have a number of competitors that compete directly with us and are much larger than us, including, among others, Cree, Nichia, Philips (Lumileds) and Osram-OS GmbH. Several substantially larger companies, such as Philips (Lumileds) and Osram-OS GmbH, compete against us with a relatively small segment of their overall business. In addition, several large and well-capitalized semiconductor companies, such as Samsung and LG Innotek, have entered into the LED chip and UV market. These potential competitors have extensive experience in developing semiconductor chips, which is similar to the manufacturing process for LED chips and LED packaging. We are also aware of a number of well-funded private companies that are developing competing products. We will also compete with numerous smaller companies entering the market, some of whom may receive significant government incentives and subsidies pursuant to government programs designed to encourage the use of LED lighting and to establish LED-sector companies. For example, the Chinese government subsidizes equipment costs, which enables manufacturers in China to remain price competitive and make it very difficult for foreign companies to compete.

Our existing and potential competitors may have a number of significant advantages over us, including greater financial, technical, managerial, marketing, distribution and other resources, more long-standing and established relationships with our existing and potential customers, greater name recognition, larger customer bases and greater government incentives and support. In addition, some of our competitors have been in operation much longer than we have and therefore may have more long-standing and established relationships with our current and potential customers.

We compete primarily on the basis of our products' performance, price, quality, and reliability and on our ability to customize products to meet customer needs. However, our competitors may be able to develop more competitive products, respond more quickly to new or emerging technologies, offer comparable products at more competitive prices or bring new products to the market earlier. Any failure to respond to increased competition in a timely or cost-effective manner could have a material adverse effect on our business, financial condition, results of operations and prospects. Furthermore, intellectual property claims against us, including pending claims and litigation, regardless of the outcome, could be used by our competitors to damage our brand reputation and our relationships with existing and potential customers.

We derive our revenues mainly from the sales of our LED components. Our inability to grow our revenues generated from the sales of LED components would have a negative impact on our financial condition and results of operation.

LED components are the core products from which we derive our revenues. Revenues attributable to the sales of our LED components represented approximately 69% of our revenues for both years ended August 31, 2022 and 2021. We expect to continue to generate our revenues mainly from the sales of LED components for the foreseeable future. As such, the continued market acceptance of our LED components is critical to our continued success. Our inability to grow our revenues generated from the sales of LED components would have a negative impact on our business, financial condition and results of operations.

The market for LEDs has historically been, and we expect will continue to be, highly volatile, which could harm our business and result in significant fluctuations in the market price of our common stock.

Fluctuations in supply and demand for LEDs pose serious risks to our prospects, business, financial condition and results of operations. Our industry, akin to the semiconductor industry, is highly cyclical and characterized by rapid technological change, rapid product obsolescence, declining average selling prices and wide fluctuations in supply and demand. Our industry's cyclicality results from a complex set of factors, including, but not limited to:

- fluctuations in demand for end-products that incorporate LED chips and LED components;
- ongoing reductions in the number of LED chips and LED components required per application due to performance improvements; and
- fluctuations in the unutilized manufacturing capacity available to produce LED chips and LED components.

If market demand increases and we are not able to increase our capacity or if we experience delays or unforeseen costs in increasing our capacity levels, we may not be able to achieve our financial targets. Alternatively, as market demand decreases or as market supply surpasses demand, we may not be able to reduce manufacturing expenses or overhead costs proportionately. If an increase in supply outpaces the increase in market demand, or if demand decreases, the resulting oversupply could adversely impact our sales and result in the underutilization of manufacturing capacity, high inventory levels, changes in revenue mix and rapid price erosion, which would lower our margins and adversely impact our financial results. For example, over the past few years, we recorded significant excess capacity charges as we suffered from underutilization of our manufacturing capacity as a result of a decrease in customer demand, and significant write-downs of inventories as a result of a decline in their average selling prices. We may experience similar problems in the future, and we cannot predict when they may occur or the severity of such difficulties and the impact on our margins and operating results.

Our ongoing cost and capital expenditure reduction efforts may not be effective, might have unintended consequences, and could negatively impact our business.

We have implemented certain actions to accelerate operating cost reductions and improve operational efficiencies in response to changes in the economic environment, our industry and demand. In connection with the implementation of our cost and capital expenditure reduction programs, we developed a strategic plan to address areas of business where we see the best opportunity for the most profitable sales of our LED products, which includes primarily a focus on the UV LED market segment and placing a greater emphasis on the sale of LED components in selected markets where pricing pressure is less significant, and pursuing new market opportunities that leverage our core competencies. We continue to monitor prices and, consistent with our existing contractual commitments, may decrease our activity level and

capital expenditures further. This plan reflects our strategy of controlling capital costs and maintaining financial flexibility. We also disposed of a certain level of our idle equipment to reduce the excess capacity charges that we have suffered for many years. In addition, to provide sufficient liquidity to meet our obligations as they become due for a reasonable period of time, we reduced our capital expenditures as appropriate. The cost reduction plan is further enhanced through the fabless business model in which we implemented certain workforce reductions and have sold certain patents that we were no longer actively developing and are exploring the opportunities to consign or sell certain equipment related to the manufacturing of vertical LED chips, in order to reduce the idle capacity charges, minimize our research and development activities associated with chips manufacturing operation.

Despite our planning, some cost-cutting and capital expenditure reduction measures could have unexpected negative consequences. As part of our ongoing cost reduction efforts, we may reduce our work force further and experience additional attrition, which may expose us to legal claims against us and loss of necessary human resources. If we face costly employee or contract termination claims, our operations and prospects could be harmed. Furthermore, capital expenditure reduction could adversely impact our future sales. While our cost and capital expenditure reduction efforts reduced, or are expected to reduce, our operating costs as well as capital expenditure, we cannot be certain that all efforts will be successful or that we will not be required to implement additional actions to structure our business to operate in a cost-effective manner in the future.

If we are unable to implement our product innovation strategy effectively, our business and financial results could be materially and adversely affected.

As part of our growth strategy, we plan to continue to be innovative in product design, to deliver new products and improve our manufacturing efficiencies. In particular, as the LED industry develops and technical specifications and market standards change, we must continue to innovate and develop competitive products that are accepted by the marketplace. Our existing or potential customers could develop, or acquire companies that develop, products or technologies that may render our products or technologies obsolete or noncompetitive. Our future success depends on our ability to develop and introduce new, technologically advanced and lower cost products, such as high quality, flexible and more complete LED system solution. If we are unable to achieve technological breakthroughs, introduce new products that are commercially viable and meet rapidly evolving customer requirements, and keep pace with evolving technological standards and market development, we may experience reduced market share and our ability to compete may be adversely impacted. If we are unable to execute our product innovation strategy effectively, we may not be able to take advantage of market opportunities as they arise, execute our business plan or respond to competition.

If LEDs fail to achieve widespread adoption in the UV lighting market, or if alternative technologies gain market acceptance, our prospects will be materially and adversely impacted and we may be unable to achieve and maintain our profitability.

SemiLEDs had moved away from general lighting markets due to extreme price erosion led by companies in China. We have moved on to focus on industrial UV applications. If UVLED does not achieve widespread acceptance and adoption, or if demand for UVLED products does not grow as we anticipate, our revenues may decline and our prospects for growth and profitability will be limited. Moreover, if existing sources of light other than LED devices, such as mercury lamp, remain popular, or if new sources of light are developed, our current products and technologies could become less competitive or obsolete.

Potential customers for UVLED systems may not adopt UVLED as an alternative to mercury lamp technology because of UVLEDs' higher upfront cost. In addition, manufacturers of mercury lamp systems may have substantial investments and know-how related to their existing technologies, and may perceive risks relating to the complexity, reliability, quality, usefulness and cost-effectiveness of UVLED products. Even if UVLED continues to achieve performance improvements and cost reductions, limited customer awareness of the benefits of UVLEDs, lack of widely accepted standards governing UVLED systems, and customer unwillingness to adopt UVLEDs in favor of entrenched solutions could significantly limit the demand for UVLED products. Additional factors that may limit the adoption of UVLEDs for mercury lamps include, among others:

- a significant reduction in or discontinuation of government regulations and economic incentives to promote the development of the UVLED industry or government regulations that discourage the use of mercury;
- changes in economic and market conditions that affect the use of mercury, for example declining environmental awareness of the damage caused by mercury; and
- capital expenditures for new and replacement systems by end-users of UVLED products, which may decline during economic downturns.

Our gross margins could fluctuate as a result of changes in our product mix, decreases in the average selling prices of our products, underutilization of our manufacturing capacity, and other factors, which may adversely impact our operating results.

Our gross margins have fluctuated and may continue to fluctuate from period to period as a result of the mix of products that we sell and the utilization of our manufacturing capacity in any given period, among other things. For example, as a strategic plan, we placed greater emphasis on the sales of LED components rather than the sales of LED chips where we have been forced to cut prices on older inventory. In 2021, sales and gross margin both increased due to other revenues rather than LED components compared to 2020. In 2022, sales increased but sales margin slightly decreased due to more volumes sold in LED components and lighting products compared to 2021. We intend to continue to pursue opportunities for profitable growth in areas of business where we see the best opportunity for our UV market, focus on product enhancement and developing our UV LED into many other applications or devices. As we expand and diversify our product offerings and with varying average selling prices, or execute new business initiatives, a change in the mix of products that we sell in any given period may increase volatility in our revenues and gross margin from period to period.

Increased competition and the adoption of alternatives to our products, more complex engineering requirements, lower demand, over-capacity in the market and other factors has led to price erosion and, as a result, lower product margins and lower revenues. For example, some of our competitors have in the past reduced their average selling prices, and the resulting competitive pricing pressures have caused us

to similarly reduce our prices, accelerating the decline in the gross margin of our products. We anticipate our competitors will continue to implement such competitive strategies from time to time in the future. Our introduction of new LED component products, such as the LED components that incorporate EV or UV LED chips may further reduce the selling prices of our older generation products or render them obsolete.

We rely on a limited number of key suppliers for certain key raw materials and equipment. The loss of key suppliers may have a material adverse effect on our business.

There are a limited number of companies which supply certain of the specialized raw materials that are important to the manufacture of our products as well as a very limited number of manufacturers of equipment that are critical to our operations. We generally enter into spot purchase orders with our suppliers and do not have long-term or guaranteed supply arrangements with any of them. For example, we purchase Red or IR LED chips, the key material used in the manufacture of our LED components, from a limited number of suppliers. A major shortage of these key raw materials would impair our ability to meet our production needs resulting in increased costs.

We also purchase gases, photo chemicals and other materials from various suppliers on the spot market. Although supply constraints do not currently have an impact on our ability to procure supply, supply constraints have occurred in the past and may occur again from time to time in the future. Additionally, we use metals such as copper alloy and other commodities in our manufacturing process. The price volatility of such materials may make our procurement planning challenging. If the prices of materials increase it may adversely affect our operating margins. Although these materials are generally available and are not considered to be specialty chemicals, our inability to procure such materials in volumes and at commercially reasonable prices could result in a material adverse effect on our business, financial condition and results of operations.

If any of our key raw material suppliers fails to meet our needs on time or at all, we may not be able to procure replacement supplies from other sources on a timely basis or on commercially reasonable terms and our production may be delayed or interrupted, which could impair our ability to meet our customers' needs and damage our customer relationships.

We may not be able to effectively expand our production capacity or upgrade our production facilities or do so in a timely or cost-effective manner, which could prevent us from growing our sales, margins and market share.

While we intend to focus on managing our costs and expenses in the short term, over the long term we expect to be required to invest substantially if we are to grow. This will mean having to continually expand our production capacity or upgrade our production facilities as we deem appropriate under future market conditions and future customer demand. Such investment could take time to become fully operational, and could otherwise increase our costs, and we may not be able to execute quickly to take advantage of market opportunities as they arise.

Upgrading or expanding existing facilities could result in manufacturing problems that may reduce our yields and utilization rates below our target levels. For example, we have experienced difficulties in the past in achieving acceptable yields when we moved our manufacturing facilities to a new location and when we introduced new products or new manufacturing processes, which has adversely affected our operating results.

Upgrading or expanding production facilities or capacity requires a significant amount of fixed cost since it requires us to add and purchase manufacturing lines, equipment and additional raw materials and other supplies. If we are not able to recoup these costs through increased sales and profits, our business, financial condition and results of operations could be materially and adversely affected.

Sales of our products are concentrated in a few select markets. Adverse developments in these markets could have a material and disproportionate impact on us.

Our revenues are highly concentrated in a few select markets, including the Netherlands, Taiwan, the United States, Germany, and Japan. Net revenues generated from sales to customers in the Netherlands, Taiwan, the United States, Germany, and Japan, in the aggregate, accounted for approximately 91% and 82% of our net revenues for the years ended August 31, 2022 and 2021, respectively. As a result of the concentration of our revenues in these markets, economic downturns, changes in governmental policies and increased competition in these markets could have a material and disproportionate impact on our revenues, operating results, business and prospects. Any unfavorable economic or market conditions in such jurisdictions could have a negative impact on our sales and profitability.

Variations in our production yields and limitations in the amount of process improvements we can implement could impact our ability to reduce costs and could cause our margins to decline and our operating results could suffer.

Our products are manufactured using technologies that are highly complex. The number of saleable products, or yield, from our production processes may fluctuate as a result of many factors, including but not limited to the following:

- variability in our process repeatability and control;
- contamination of the manufacturing environment;
- equipment failure, variations in the manufacturing process, or power outages;
- lack of consistency and adequate quality and quantity of components and raw materials;
- losses from broken wafers, inventory damage or human errors;
- defects in packaging either within our facilities or at our subcontractors; and
- any transitions or changes in our production process, planned or unplanned.

Introduction of new products and manufacturing processes are often characterized by lower yields in the initial commercialization stage. LED chip and component manufacturing is complicated and consists of many layers of complex materials that must interact with each other. In addition, when we introduce new products and processes, we often use new chemical solutions and chemical compounds with which we have less experience. We must analyze how the various solutions, compounds and layers of materials interact with each other and perform as parts of the LED chip structure. It takes time for us to analyze the data from our initial manufacturing runs and optimize our processes, and over time we generally achieve higher yield rates as we gain more experience with the product or processes. We have continuously improved and increased our production yields to reduce the per-unit cost of production for our new LED components that incorporate EV or UV LED chips; however, such cost savings currently have limited impact on our gross profit, as we currently suffer from the underutilization of manufacturing capacity and must absorb a high level of fixed costs, such as depreciation. In the past, we have experienced difficulties in achieving acceptable yields when introducing new products or new manufacturing processes, which has adversely affected our operating results. We may experience similar problems in the future, and we cannot predict when they may occur or the severity of such difficulties and the impact on our business.

In some instances, we may offer products for future delivery at prices based on planned yield improvements or increased cost efficiencies from other production advances. Failure to achieve these planned improvements or advances could significantly affect our margins and operating results.

We may face challenges further expanding our LED components business. In addition, our strategy of marketing our LED components in jurisdictions with limited intellectual property enforcement regimes may limit the markets where we can sell our LED components and may subject our intellectual property rights to infringement.

We face challenges in further expanding our LED components business, which has been our core product now and onward, because it involves processes and technologies that are significantly different from our manufacturing processes for LED chips. For example, we are developing advanced-level LED component manufacturing techniques, such as processes that allow us to manufacture wafer-level packaging. If we are not able to further develop our LED components business or if competitors create or adopt more advanced packaging technologies than ours, then our business, financial condition and results of operations could be materially and adversely affected.

Our distribution strategy limits the sales of our LED components as we are selling only in countries that may not necessarily have the highest demand or market potential. The intellectual property rights related to LED components are particularly complex and characterized by aggressive enforcement of those rights. To minimize the likelihood that one of our competitors or another third party will assert a claim related to our LED components, we have sought to market these products only in countries in which we believe enforcement of intellectual property rights has historically been more limited as identified below and to ensure the new line of LED products are not subject to any effective injunction in the United States, because we believe that it is important for us to consciously manage our exposure to litigation. Any such litigation, whether with or without merit, could divert our management, financial and other resources away from our business and thereby have a negative impact on our continued development and growth. We do not currently sell our LED components in all countries that meet, what we believe to be, an acceptable litigation risk profile. We review profiles of different countries and may determine from time to time that we should sell our products in one or more additional countries that meet our litigation risk profile for sale of our LED components. However, we may not be able to identify additional countries that we find to be suitable markets for these products. We have considered the potential loss of revenues and income that we may suffer as a result of our strategy to sell only in certain select countries and have concluded that, on balance, the potential loss of such revenues and income is not outweighed by the potential litigation risks. Also, there can be no guarantee that, by selling our LED components in these countries, we have not exposed our intellectual property rights, including our patents, to infringement by others. With respect to any potential infringement of our patents and other intellectual property rights by others in countries where we currently sell our LED components, we have considered the potential loss of revenues and income that we may suffer associated with such sales and have made a business judgment that the benefits outweigh any potential loss. In addition, if the countries in which we currently sell our LED components increase their enforcement of intellectual property rights, the risk of litigation would materially increase and our ability to continue to sell our LED components in these markets may be materially and adversely affected. Sales of our LED components and our other products may also be limited in the event that they are subsequently shipped or otherwise resold in a country and a claim is brought against us or our customer pursuant to the intellectual property laws of the country of final destination.

As we continue to operate in the lighting fixtures market, we may face additional competition and our existing customers may reduce orders.

As we continue to operate in the lighting fixtures market and seek to increase our sales of lighting products in the future, we may face competition from fixtures and bulbs manufactured and marketed by other LED lighting fixture companies and from lighting products incorporating incandescent, fluorescent, halogen, ceramic metal halide or other lighting technology. In addition, many of our existing customers who purchase our LED chips and LED components develop and manufacture lighting fixtures using those chips and components. As we continue to operate in that market, our customers may respond by reducing or discontinuing their orders for our products. This could prevent us from growing or even maintaining our revenues from the sale of LED chips and LED components, which would negatively impact our business, financial condition and results of operations.

As with our LED components, to minimize the likelihood that one of our lighting fixture competitors or another third party will assert an intellectual property right related to our lighting fixtures, we have sought to market these products only in countries in which we believe enforcement of intellectual property rights has been more limited. Our sales of lighting products to customers in the United States decreased significantly in recent years. This distribution strategy may limit our sales to countries that do not have the highest demand or market potential, and raise similar issues and risks to those raised with respect to our use of this strategy in connection with marketing our LED components.

We are highly dependent on our customers' ability to produce and sell products incorporating our LED products. If our customers are not successful, our operating results could be materially and adversely affected.

Our customers incorporate our LED products into their products. As such, demand for our products is dependent on demand for our customers' end-products that incorporate our LED products and our customers' ability to sell these products. The general lighting market has

only recently begun to develop and adopt standards for fixtures that incorporate LED devices. If the end-customers for our products are unable to manufacture fixtures that meet these standards, our customers' sales, and consequently our sales, will suffer.

With respect to the sale of our LED components, a substantial portion of which is used in specialty industrial applications, such as UV curing of polymers, LED light therapy in medical/cosmetic applications, counterfeit detection, LED lighting for horticulture applications, and architectural lighting. A majority of our sales are to such end-customers in selected markets. Sales by end-customers of our products are generally dependent on their ability to develop high quality and highly efficient lighting products and require complex designs and processes, including thermal design, optical design and power conversion. We are making a transition to develop as an end-to-end LED module solution supplier by providing our customers with high quality, flexible and more complete LED system solution, customer technical support and LED module/system design, as opposed to just providing customers with individual components. Our customer's timely and successful product development, the success of our customers' new product introductions and market acceptance could be materially and adversely affected our operating results.

Any undetected defects in our products may harm our sales and reputation and adversely affect our manufacturing yields.

The manufacture of LED chips and components is highly complex, requiring precise processes in a highly controlled and sterile environment using specialized equipment. We manufacture our LED products to meet customer requirements with respect to quality, performance and reliability. Although we utilize quality control procedures at each stage of our manufacturing process, our products may still contain defects that are undetected until after they are shipped or inspected by our customers, or on operation of the device. For example, there could be sub-micron defects that would not be detected by our quality control procedures; such sub-micron defects may increase the current leakage in the device and could negatively affect the product performance over time. Unsatisfactory performance of or defects in our products may cause us to incur additional expenses, including costs in relation to product warranties, cancellation and rescheduling of orders and shipments, and product returns or recalls. Failure to detect and rectify defects in our products before delivery could subject us to product liability claims and harm our credibility and market reputation, which could materially adversely affect our business and results of operations.

In addition, we do not currently have fully automated manufacturing processes, which could potentially introduce contaminants to the production processes through human error. Defects or other difficulties in the manufacturing process can prevent us from achieving maximum capacity utilization, which is the actual number of wafers that we are able to produce in relation to our capacity, and also can prevent acceptable yields of quality LED chips from those wafers.

Our operations involve the use of hazardous materials and we must comply with environmental laws, which can result in significant costs, and may affect our business and operating results.

Our research and development and manufacturing activities involve the use of hazardous materials, including acids, adhesives and other industrial chemicals. As a result, we are subject to a variety of environmental, health and safety laws and regulations governing the use, storage, handling, transportation, emission, discharge, exposure to, and disposal of such hazardous materials. Compliance with applicable environmental laws and regulations in each of the jurisdictions in which we operate can be costly, and there can be no assurance that violations of these laws will not occur in the future as a result of human error, accident, equipment failure, or other causes. Liability under environmental and health and safety laws can be joint and several, and without regard to fault or negligence. The failure to comply with past, present, or future laws could subject us to increased costs and significant fines and penalties, damages, legal liabilities, suspension of production or operations, alteration of our manufacturing facilities or processes, curtailment of our sales and adverse publicity. Any of these events could harm our business and financial condition.

Furthermore, environmental protection and workplace safety regulations may become more stringent in the future, and although we cannot predict the ultimate impact of any such new laws, they may impose greater compliance costs or result in increased risks or penalties, which could harm our business. Existing and future environmental laws and regulations could also require us to acquire pollution abatement or remediation equipment, modify our product designs or incur other expenses associated with such laws and regulations. As our industry continues to evolve, we may be required to evaluate and use new materials in our manufacturing process that may be subject to regulation under existing or future environmental laws and regulations, and our use of such new materials may be restricted. Any such restriction could require us to alter our manufacturing processes or increase our expenses. If we fail to comply with current and future environmental laws and regulations, whether intentional or inadvertent, we may be required to pay fines and other liabilities to the government or third parties, suspend production or even cease operation.

The effects of the COVID-19 pandemic have adversely affected how we and our customers are operating our businesses, and the duration and extent to which this will impact our future results of operations and overall financial performance remains uncertain.

The coronavirus ("COVID-19") pandemic has resulted in a widespread health crisis that has adversely affected businesses, economies and financial markets worldwide, and has caused significant volatility in U.S. and international debt and equity markets.

Our business, financial condition, liquidity and operating results have been adversely affected by COVID-19 pandemic and related restrictions. The conditions caused by the COVID-19 pandemic have adversely affected our customers' ability or willingness to purchase our products or services, delayed prospective customers' purchasing decisions, adversely impacted our ability to provide or deliver products and on-site services to our customers, delayed the provisioning of our offerings, and lengthened payment terms, which has adversely affected and could continue to affect, our sales, operating results and overall financial performance. Our operations have also been negatively affected by a range of external factors related to the COVID-19 pandemic that are not within our control.

The future impact of the COVID-19 pandemic and subsequent variants on our operational and financial performance is uncertain and will depend on many factors beyond our control, including, without limitation, the timing, extent, trajectory and duration of the pandemic; the effectiveness of vaccines; the spread of new variants of COVID-19; the continued and renewed imposition of protective public safety measures; the continuing global disruption in supply chains in our industry and the impact of the pandemic on the global economy, inflation and demand for consumer products. Even though the pandemic has largely subsided and economic activities have gradually increased, we

may continue to experience adverse impacts to our business, operating results, and financial condition as a result of the pandemic's lasting global economic impact, including any recession that may occur in the future in our industry or continuing inflationary impacts.

Risks Relating to Our Holding Company Structure

Our ability to receive dividends and other payments from Taiwan SemiLEDs may be restricted by commercial and legal restrictions, which may materially and adversely affect our ability to grow, fund investments, make acquisitions, pay dividends and otherwise fund and conduct our business.

We are a holding company with one material asset, which is our ownership interest in Taiwan SemiLEDs.

Dividends and interest on intercompany loans we receive from our subsidiaries in Taiwan, if any, will be subject to withholding tax under Taiwan law. The ability of our subsidiaries in Taiwan to pay dividends, repay intercompany loans from us or make other distributions to us is restricted by, among other things, the availability of funds, the terms of various credit arrangements entered into by our subsidiaries, as well as statutory and other legal restrictions. In addition, although there are currently no foreign exchange control regulations that restrict the ability of our subsidiaries located in Taiwan to distribute dividends to us, we cannot assure you that the relevant regulations will not be changed and that the ability of our subsidiaries to distribute dividends to us will not be restricted in the future. A Taiwan company is generally not permitted to distribute dividends or to make any other distributions to stockholders for any year in which it did not have either earnings or retained earnings (excluding reserves). In addition, before distributing a dividend to stockholders following the end of a fiscal year, the company must recover any past losses, pay all outstanding taxes and set aside 5% of its annual net income (less prior years' losses and outstanding taxes) as a legal reserve until the accumulated legal reserve equals its paid-in capital, and may set aside a special reserve.

Our ability to operate our holding company in the U.S. is dependent on Taiwan SemiLEDs' ability to repay its obligations to SemiLEDs Corporation.

SemiLEDs Corporation has substantial intercompany receivables from Taiwan SemiLEDs. However, we are dependent on Taiwan SemiLEDs' ability to raise money through the sale of a portion of its subsidiary and the restructuring of its chip operation to pay back SemiLEDs Corporation. On July 5, 2019, Taiwan SemiLEDs entered into two new loan agreements to refinance existing real estate loans of Taiwan SemiLEDs and provide for operating capital.

Our ability to make further investments in Taiwan SemiLEDs may be dependent on regulatory approvals in Taiwan.

Taiwan SemiLEDs depends on us to meet its equity financing requirements. Any capital contribution by us to Taiwan SemiLEDs requires the approval of the relevant Taiwan authorities, such as the Hsinchu Science Park Administration. We may not be able to obtain any such approval in the future in a timely manner, or at all. We cannot assure you that we will be able to complete these government registrations or obtain the government approvals on a timely basis, if at all, with respect to future loans or capital contributions by us to our subsidiaries or any of their respective subsidiaries. If we fail to complete these registrations or obtain the approvals, our ability to capitalize Taiwan SemiLEDs may be negatively affected, which could adversely and materially affect our liquidity and our ability to fund and expand our business.

The rights of stockholders may be limited as we conduct a substantial portion of our operations in Taiwan and a substantial portion of our assets and substantially all of our directors and officers reside outside the United States.

Although we are incorporated in Delaware, a substantial portion of our operations are conducted in Taiwan through Taiwan SemiLEDs and its subsidiaries. As such, a substantial portion of our assets are located in Taiwan. In addition, substantially all of our directors and officers reside outside the United States, and a substantial portion of the assets of those persons are located outside of the United States. Therefore, it may be difficult or impossible for you to bring an action against us or against these individuals in the United States in the event that you believe that your rights have been infringed under applicable securities laws or otherwise. Even if you are successful in bringing an action, the laws of Taiwan may render you unable to enforce a United States judgment against our assets or the assets of our directors and officers.

For judgments obtained in courts outside of Taiwan to be recognized and enforceable in Taiwan without review of the merits, the Taiwan court in which the enforcement is sought must be satisfied that: the foreign court rendering such judgment has jurisdiction over the subject matter in accordance with the Taiwan law; the judgment and the court procedure resulting in the judgment are not contrary to the public order or good morals of Taiwan; the judgment is a final judgment for which the period for appeal has expired or from which no appeal can be taken; if the judgment was rendered by default by the foreign court, the defendant was duly served in the jurisdiction of such court within a reasonable period of time in accordance with the laws and regulations of such jurisdiction, or process was served on the defendant with the Taiwan judicial assistance; and judgment of Taiwan courts is recognized and enforceable in the foreign court rendering the judgment on a reciprocal basis.

Risks Related to Owning Our Common Stock

We may fail to qualify for continued listing on Nasdaq which could make it more difficult for investors to sell their shares.

In December 2010, our common stock was initially approved for listing on the Nasdaq Global Select Market and was transferred to the Nasdaq Capital Market effective November 5, 2015. To maintain that listing, we must satisfy the continued listing requirements of Nasdaq for inclusion in the Nasdaq Capital Market, including among other things, a minimum stockholders' equity of \$2.5 million and a minimum bid price for our common stock of \$1.00 per share, that a majority of the members of our board of directors are independent under the Nasdaq Listing Rules and that our audit committee consist of three independent directors who satisfy additional requirements under the Exchange Act. On January 21, 2021, we received a notice from The Nasdaq Stock Market indicating that we did not meet the minimum of \$2,500,000

in stockholders' equity required by Listing Rule 5550(b)(1) for continued listing. On June 23, 2021, Nasdaq sent a notice stating that we were gained compliance with Listing Rule 5550(b)(1) following 20 consecutive business days where our market value of listed securities was at least \$35,000,000.

Even though we are currently in compliance with Nasdaq's continued listing requirements, there can be no assurance that we will maintain compliance these requirements if we continue to incur losses or that our common stock will not be delisted from Nasdaq in the future. If our common stock is delisted by Nasdaq, we expect prices for our common stock to be quoted one of the OTC Markets or the OTC Bulletin Board. Under such circumstances, stockholders may find it more difficult to sell, or to obtain accurate quotations, for our common stock, and our common stock would become substantially less attractive to certain purchasers such as financial institutions, hedge funds and other similar investors. There is no assurance, however, that prices for our common stock would be quoted on one of these other trading systems or that an active trading market for our common stock would thereafter exist, which would materially and adversely impact the market value of our common stock and your ability to sell our common stock.

We may seek additional capital that may result in stockholder dilution.

We expect to require additional capital due to continuing losses, deteriorating business conditions or other future developments. If our current sources of capital are insufficient to satisfy our cash requirements, we may seek to sell additional equity or debt securities, including through our at-the-market equity program, or obtain bank loans and credit facilities. The sale of convertible debt securities or additional equity securities could result in dilution to our stockholders. The incurrence of further indebtedness, whether in the form of public debt or bonds or bank financing, would result in increased debt service obligations and could result in operating and financing covenants that would restrict our operations and liquidity.

Our ability to obtain external financing is subject to a number of uncertainties, including:

- our future financial condition, results of operations and cash flows and the trading price of our common stock;
- the state of global credit markets and our creditworthiness;
- raising additional cash through potential equity offerings, including sales through an at-the-market, or ATM program, sales of assets and/or issuance of debt as considered necessary and looking at other potential business opportunities;
- general market conditions for financing activities by companies in our industry; and
- economic, political and other conditions in Taiwan, China and elsewhere.

We cannot assure you that financing, if needed, would be available in amounts or on terms acceptable to us, if at all.

Our directors, executive officers and principal stockholders have substantial control over us and will be able to influence corporate matters.

As of October 31, 2022, our directors and executive officers, together with their affiliates, beneficially owned, in the aggregate, approximately 40.2% of our outstanding common stock. As a result, certain of these stockholders acting alone or these stockholders, acting together, would have the ability to practically control the outcome of matters submitted to our stockholders for approval, including the election of our directors and any merger, consolidation or sale of all or substantially all of our assets. In addition, these stockholders, acting together, would have the ability to control the management and affairs of our company. Accordingly, this concentration of ownership might harm the market price of our common stock by:

- limiting stockholders' ability to influence corporate matters;
- delaying, deferring or preventing a change in corporate control;
- impeding a merger, consolidation, takeover or other business combination involving us; or
- discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us.

There can be no assurance that our interests will not conflict with those of these stockholders, who may also take actions that are not in line, or may conflict, with our other stockholders' best interests.

Delaware law and our certificate of incorporation and bylaws will contain anti-takeover provisions that could delay or discourage takeover attempts that stockholders may consider favorable.

Certain provisions in our certificate of incorporation and bylaws may have the effect of delaying or preventing a change of control or changes in our management. As long as our major stockholder, Simplot Taiwan, Inc., which is beneficially owned by Scott R. Simplot, one of our directors, continues to hold 25% or more of the total voting power of all outstanding shares of our stock entitled to vote generally in the election of directors, shareholders holding at least 25% of the total voting power of all outstanding shares of our stock entitled to vote generally in the election of directors are able to call a special meeting in accordance with our bylaws; provided, however, at such time when the ownership interest of Simplot Taiwan, Inc. first falls below 25% of our total voting power, our amended and restated certificate of incorporation requires that a special meeting may be called only by a majority of our board of directors. Our amended and restated certificate of incorporation precludes stockholder action by written consent. In addition, our amended and restated bylaws require that any stockholder proposals or nominations for election to our board of directors must meet specific advance notice requirements and procedures, which may make it more difficult for our stockholders to make proposals or director nominations. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

Furthermore, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law. These provisions may prohibit or restrict large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us. These provisions in our certificate of incorporation and bylaws and under Delaware law could discourage potential takeover attempts and could reduce the price that investors might be willing to pay for shares of our common stock in the future and result in our market price being lower than it would be without these provisions.

Risks Related to Taxation

The non-U.S. activities of our non-U.S. subsidiaries may be subject to U.S. taxation.

On December 22, 2017, the U.S. Tax Cuts and Jobs Act was adopted, which among other effects, reduced the U.S. federal corporate income tax rate to 21% from 34% (or 35% in certain cases) beginning in 2018, requires companies to pay a one-time transition tax on certain unrepatriated earnings from non-U.S. subsidiaries that is payable over eight years, makes the receipt of future non-U.S. sourced income of non-U.S. subsidiaries tax-free to U.S. companies and creates a new minimum tax on the earnings of non-U.S. subsidiaries relating to the parent's deductions for payments to the subsidiaries. Our provisional estimate is that no tax will be due under this provision. However, there can be no assurance as to accuracy of the estimation. If the ultimate determination of the Company's taxes owed is for an amount in excess of amounts previously accrued, the Company's financial condition, operating results and cash flows could be materially adversely affected.

General Risks

Our operating results may fluctuate from quarter to quarter, which could make our future performance difficult to predict and could cause our operating results for a particular period to fall below expectations, resulting in a severe decline in the price of our common stock.

Our quarterly operating results are difficult to predict and may fluctuate significantly in the future. We have experienced seasonal and quarterly fluctuations in the past. As such, our past quarterly operating results may not be good indicators of future performance.

The following factors could cause our operating results to fluctuate:

- our ability to retain existing customers, attract new customers and successfully enter new geographic markets;
- changes in supply and demand and other competitive market conditions, including pricing actions by our competitors and our customers' competitors;
- timing of orders from and shipments to major customers and end-customers, including as part of LED project-based orders, and our ability to forecast demand and manage lead times for the manufacturing of our products; and
- seasonal fluctuations in our customers' purchasing patterns.

For these or other reasons, the results of any prior quarterly or annual periods should not be relied upon as indications of our future performance, and our actual revenue and operating results in future quarters may fall short of the expectations of investors and financial analysts, which could have a severe adverse effect on the trading price of our common stock.

Our stock price has been and may continue to be volatile and you may be unable to resell shares of our common stock at or above the price you paid.

The trading price of our common stock has been and may continue to be subject to broad fluctuations. The market price of shares of our common stock could be subject to wide fluctuations in response to various risk factors listed in this section and others beyond our control, including:

- actual or anticipated fluctuations in our key operating metrics, financial condition and operating results;
- changes in the composition of and the orders received from our customers;
- actual or anticipated changes in our growth rate;

- issuance of new or updated research or reports by securities analysts that have a change in outlook regarding the performance of our business or the future trading price of our common stock;
- our announcement of actual results for a fiscal period that are higher or lower than projected or expected results or our announcement of revenue or earnings guidance that is higher or lower than expected;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- sales or expected sales of additional common stock;
- announcements from, or operating results of, our competitors; and
- general economic and market conditions.

Furthermore, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions, such as recessions, interest rate changes or international currency fluctuations, may cause the market price of shares of our common stock to decline. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We had ever been a defendant in two filed actions and may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

We do not anticipate paying any cash dividends on our common stock and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We have never declared or paid any cash dividends on our common stock or convertible preferred stock and do not intend to do so for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth. Therefore, you are not likely to receive any dividends on your common stock for the foreseeable future and the success of an investment in shares of our common stock will depend upon future appreciation in their value. There is no guarantee that shares of our common stock will appreciate in value or maintain the price at which our stockholders purchased their shares.

We may be exposed to litigation, which could adversely affect our financial condition and results of operations.

In the ordinary course of our business, we may be exposed to general commercial claims related to the conduct of our business, class action lawsuits, employment claims and other litigation claims. Any such litigation, whether with or without merit, could result in significant costs. In addition, members of our senior management may be required to divert significant attention and resources to these matters, reducing the time, attention and resources they have available to devote to managing our business. These additional expenses and diversion of attention and resources, along with any reputational issues raised by these lawsuits, may have a material negative impact on our business, financial condition and results of operations.

We are required to assess our internal control over financial reporting on an annual basis and any future adverse findings from such assessment could result in a loss of investor confidence in our financial reports, significant expenses to remediate any internal control deficiencies and ultimately have an adverse effect on our share price.

Section 404 of the Sarbanes-Oxley Act of 2002 requires that we include a management report that assesses the effectiveness of our internal control over financial reporting in our annual report on Form 10-K. Our testing may reveal deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses, which we will be required to disclose. Our compliance with Section 404 requires that we incur substantial accounting expenses and expend significant management resources and time on compliance related issues. If we are unable to comply with the requirements of Section 404 in a timely manner, or if we identify deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses, we may be subject to sanctions or investigations by regulatory agencies such as the SEC. In addition, failure to meet the requirements of Section 404 or to disclose any material weakness may cause investors to lose confidence in our financial statements and the trading price of our common stock may decline. Moreover, if we fail to remedy any material weakness, our financial statements may be inaccurate, our ability to report our financial results on a timely and accurate basis may be adversely affected, our access to the capital markets may be restricted, we may be subject to sanctions or investigation by regulatory authorities, including the SEC and The Nasdaq Stock Market, or Nasdaq, and our stated results of operations and reputation may be materially and adversely affected.

Cost-method investments could reduce our earnings.

Some of our investments are accounted for under the equity method of accounting, which we record our proportionate share of their net income or loss, or using the cost method. However, they must also be tested for impairment. For the investments we account for under the equity method or the cost method, the impairment test considers whether the fair value of the equity investment as a whole, not the underlying net assets, has declined and whether that decline is other than temporary. If we determine that impairment is indicated, we would be required to take an immediate non-cash charge to earnings, which could adversely impact our operating results.

We may undertake joint ventures, investments, acquisitions, joint projects, and other strategic alliances and such undertakings, as well as our existing joint ventures, may be unsuccessful and may have an adverse effect on our business.

We have grown our business in part through strategic alliances and acquisitions. We continually evaluate and explore strategic opportunities as they arise, including product, technology, business or asset transactions, such as acquisitions or divestitures. Such

undertakings may not be successful or may take a substantially longer period than initially expected to become successful, and we may never recover our investments or achieve desired synergies or economies from these undertakings.

This notwithstanding, we may in the future continue to seek to grow our operations in part by entering into joint ventures, undertaking acquisitions or establishing other strategic alliances with third parties in the LED and LED-related industries. These activities involve challenges and risks in negotiation, execution, valuation and integration, and closing of the transactions could be delayed or prevented by regulatory approval requirements, including antitrust review, or other conditions.

Any future agreements that we may enter into also could expose us to new operational, regulatory, market, litigation and geographical risks as well as risks associated with significant capital requirements, the diversion of management and financial resources, unforeseen operating difficulties and expenditures, sharing of proprietary information, loss of control over day-to-day operations, non-performance by a counterparty and potential competition and conflicts of interest. In addition, we may not be successful in finding suitable targets on terms that are favorable to us, or at all. Even if successfully negotiated and closed, expected synergies from a joint venture, acquisition or other strategic alliance may not materialize or may not advance our business strategy, may fall short of expected return-on-investment targets or may not prove successful or effective for our business. We may also encounter difficulty integrating the operations, personnel and financial and operating systems of an acquired business into our current business.

We may need to raise additional debt funding or sell additional equity securities to enter into such joint ventures or make such acquisitions. However, we may not be able to obtain such debt funding or sell equity securities on terms that are favorable to us, or at all. The raising of additional debt funding by us, if required and available, would result in increased debt service obligations and could result in additional operating and financing covenants, or liens on our assets, that would restrict our operations. The sale of additional equity securities, if required and available, could result in dilution to our stockholders.

We are also exposed to liquidity risk in the event of non-performance by the counterparty to the convertible note in the purchase agreement.

Risks Related to Human Capital

We rely on certain key personnel. The loss of any of our key personnel, or our failure to attract, assimilate and retain other highly qualified personnel in the future, could harm our business.

Our future success depends on the continued service and performance of our key personnel, including in particular Trung T. Doan, our chief executive officer, and members of our executive team. We do not maintain key man insurance on any of our officers or key employees.

If Mr. Doan or other key personnel were unable or unwilling to continue in their present positions, we may not be able to replace them readily or on terms that are reasonable, if at all. As such, the loss of Mr. Doan or other key personnel, including other key members of our management team and certain of our key marketing, sales, product development or technology personnel, could significantly disrupt our operations and prevent the timely achievement of our development strategies and growth, which would likely have an adverse effect on our financial condition, operating results and prospects. Moreover, we may lose some of our customers if any of our officers or key employees were to join a competitor or form a competing company. The loss of the services of our senior management for any reason could adversely affect our business, operating results and financial condition.

In addition, competition for experienced employees in our industry can be intense, and we may not be successful in recruiting, motivating or retaining sufficiently qualified personnel on terms that are reasonable, or at all. Cyclical volatility in our industry and in our business may aggravate this problem. For example, the challenges we faced in recent years relating to loss of market share and a sustained decrease in the market price of our common stock, among others, could impact our ability to attract and retain employees. When consumer demand for our products is reduced or delayed, we expect lower net revenue and reduced profitability. When our stock price declines, our equity incentive awards may lose retention value. In response to such downturns, we may further implement cost reduction actions, including spending controls, forced holidays and company shutdowns, employee layoffs, shortened workweeks and involuntary salary reductions. Layoffs during an industry downturn could make it more difficult for us to retain key talent and staff members, or to rehire employees should business improve.

Risks Relating to Intellectual Property

We may be exposed to intellectual property infringement or misappropriation claims by third parties, which could adversely affect our financial condition and results of operations.

Trademark, patent, copyright and other intellectual property rights are critical to our business and the business of our competitors. Our industry is characterized by frequent intellectual property litigation involving patents, trade secrets, copyrights, and mask designs among others. Competitors of ours and other third parties have in the past and will likely from time to time in the future allege that our products infringe on their intellectual property rights.

Litigation to determine the validity and scope of any claim against us for infringement, misappropriation, misuse or other violation of third-party intellectual property rights can be highly uncertain because of the complex scientific, legal and factual questions and analyses involved. Defending against any intellectual property infringement claims would likely result in costly litigation, diversion of the attention and efforts of our technical and management personnel and ultimately may lead to our not being able to manufacture, use or sell products found to be infringing. As a result of any such dispute, we may be required to develop non-infringing technology, pay substantial damages, enter into royalty or licensing agreements to use third-party technology, cease selling certain products, adjust our marketing and advertising activities or take other actions to resolve the claims. These actions, if required, may be costly or unavailable on terms acceptable to us. If we are unable to obtain sufficient rights or develop non-infringing intellectual property or otherwise alter our business practices on a timely basis, our business and competitive position may be adversely affected.

The intellectual property rights related to packaging LEDs with phosphors to make white light LED components are particularly complex and characterized by aggressive enforcement of those rights. Many of our competitors and other third parties hold patents or licenses or cross-licenses that relate to phosphors and the use of phosphors in LED packages to make white light LED components. We have sought to minimize the risk that one of our competitors or another third party will assert a claim related to our packaged LED components by marketing these products only in certain countries in which we believe enforcement of intellectual property rights has historically been more limited. We cannot assure you that our belief with respect to the enforcement of rights within those markets is accurate. In addition, if the products we sell in a particular country are subsequently shipped or resold to another country, the intellectual property laws of the country of final destination may also apply to our products. Further, we may be subject to claims if our packaging customers for our LED chips lack sufficient intellectual property rights with respect to their packaging process and related packaging materials. We cannot assure you that our competitors or others will not claim that our LED chips or our LED components infringe their intellectual property rights or that, if such claims are made, we will be able to successfully dispute such claims.

If our intellectual property, including our proprietary technologies and trade secrets, are not adequately protected to prevent misuse or misappropriation by our competitors, the value of our brand and other intangible assets may be diminished, and our business may be materially and adversely affected. In addition, the sale of certain patents increases our business risk.

Our future success and competitive position depends in part on our ability to protect our intellectual property, including proprietary technologies and trade secrets. In particular, we have developed advanced capabilities and proprietary know-how in sapphire reclamation, gallium nitride, or GaN, epitaxial growth, copper alloy technology, nanoscale surface engineering and vertical LED structure technology that are critical to our business. We rely, and expect to continue to rely, on a combination of confidentiality and license agreements with our employees, licensees, partner and third parties with whom we have relationships, and trademark, copyright, patent and trade secret protection laws, to protect our intellectual property, including our proprietary technologies and trade secrets.

There can be no assurance that the steps we have taken or plan to take in the future are adequate to protect our intellectual property, including our proprietary technologies and trade secrets. We expect to continue to seek patent and trademark protection for our technologies and know-how. However, we will only be able to protect such technologies and know-how from unauthorized use by third parties to the extent that valid, protectable and enforceable rights cover them. We cannot be certain that our patent and trademark applications will lead to patents being issued and registered trademarks being granted in a timely manner, or at all. Even if we are successful in obtaining such rights, the intellectual property laws of other countries in which our products are sold or may in the future be sold may not protect our products and intellectual property rights to the same extent as the laws of the United States. For example, China currently is thought to afford less protection to intellectual property rights generally than some other jurisdictions. As such, the lack of strong patent and other intellectual property protection in China may significantly increase our vulnerability as regards unauthorized disclosure or use of our intellectual property and undermine our competitive position. The legal standards relating to the validity, enforceability and scope of protection of intellectual property rights in LED-related industries are uncertain and still evolving, both in the United States and in other countries. Moreover, the contractual agreements that we enter into with employees, licensees and third parties to protect our intellectual property and proprietary rights afford only limited protection and may not be enforceable.

We also expect that the more successful we are, the more likely it will be that competitors will try to develop or patent similar or superior technologies, products and services. In the event that our competitors or others are able to obtain knowledge of our know-how, trade secrets and technologies through independent development, our failure to protect such know-how, trade secrets and technologies and/or our other intellectual property and proprietary rights may undermine our competitive position. In addition, third parties may knowingly or unknowingly infringe our trademarks and other intellectual property rights, and litigation may be necessary to protect and enforce our intellectual property rights or determine the validity and scope of our proprietary rights. Any such litigation could be very costly and could divert management attention and resources away from our business, and the outcome of such litigation may not be in our favor. If the protection of our intellectual property, including our proprietary technologies and trade secrets, is inadequate to prevent use or appropriation by third parties, the value of our brand and other intangible assets may be diminished and competitors may be able to more effectively mimic our products and methods of operation. Any of these events may have a material adverse effect on our business, financial condition, reputation and competitive position.

We have also sold certain patents, generally for technology that we are no longer actively developing. While we plan to continue to monetize our patent portfolio through sales of non-core patents, we may not be able to realize adequate interest or prices for those patents. Accordingly, we cannot provide assurance that we will be able to generate revenue from these sales. In addition, although we seek to be strategic in our decisions to sell patents, we might incur reputational harm if a purchaser of our patents sues one of our customers for infringement of the purchased patent, and we might later decide to enter a space that requires the use of one or more of the patents we sold.

Confidentiality agreements with employees and others may not adequately prevent disclosure of trade secrets and other proprietary information.

To protect a substantial amount of our technologies, we have chosen to rely primarily on trade secrets law rather than seeking protection through patents. Trade secrets are inherently difficult to protect. In order to protect our intellectual property rights, including our proprietary technologies and trade secrets, we rely in part on security measures, as well as confidentiality agreements with our employees, licensees and other third parties. These measures and agreements may not effectively prevent disclosure of confidential information, including trade secrets, and may not provide an adequate remedy in the event of unauthorized disclosure of confidential information. While we believe we use reasonable efforts to protect our trade secrets, we could potentially lose future trade secret protection if any unintentional or willful disclosure by our directors, employees, consultants or contractors of such information occurs, including disclosure by employees during or after the termination of their employment with us, in particular if they were to join one of our competitors. Laws regarding trade secret rights in certain markets in which we operate may afford little or no protection. The loss of trade secret protection could make it easier for third parties to compete with our products by copying functionality. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our business, revenue, reputation and competitive position.

The reduction or elimination of government investment in LED lighting or the elimination of, or changes in, policies in certain countries that encourage the use of LEDs over some traditional lighting technologies could cause demand for our products to decline, which could materially and adversely affect our revenues, profits and margins.

We believe the near-term growth of the LED market will be driven in part by government policies in certain countries that either directly promote the use of LEDs or discourage the use of some traditional lighting technologies. Today, the upfront cost of LED lighting exceeds the upfront cost for some traditional lighting technologies that provide similar lumen output in many applications. However, for environmental reasons, among others, some governments around the world have used policy initiatives to accelerate the development and adoption of LED lighting and other non-traditional lighting technologies that are seen as more environmentally-friendly compared to some traditional lighting technologies. Reductions in, or eliminations of, government investment and favorable energy policies could result in decreased demand for our products and decrease our revenues, profits, margins and prospects.

Political, Geographical and Economic Risks

Due to the location of our operations, we are vulnerable to natural disasters and other events, which may seriously disrupt our operations.

Most of our operations are located in Taiwan, and the operations of many of our LED manufacturing service providers, suppliers and customers are located in Taiwan and the PRC. Our revenues derived from customers located in Taiwan and China (including Hong Kong) were 15% and 10% for the years ended August 31, 2022 and 2021, respectively. Our operations and the operations of our customers and suppliers are vulnerable to earthquakes, tsunamis, floods, droughts, typhoons, fires, power losses and other major catastrophic events, including the outbreak, or threatened outbreak, of any widespread communicable diseases. Disruption of operations due to any of these events may require us to evacuate personnel or suspend operations, which could reduce our productivity. Such disasters may also damage our facilities and equipment and cause us to incur additional costs to repair our facilities or procure new equipment, or result in personal injuries or fatalities or result in the termination of our leases and land use agreements. Any resulting delays in shipments of our products could also cause our customers to obtain products from other sources. Although we maintain property insurance for such risks, there is no guarantee that future damages or business losses from earthquakes and catastrophic other events will be covered by such insurance, that we will be able to collect from our insurance carriers, should we choose to claim under our insurance policies, or that such coverage will be sufficient. In addition, natural disasters, such as earthquakes, tsunamis, floods and typhoons, may also disrupt or seriously affect the operations of our customers and suppliers, resulting in reduced orders or shipments or the inability to perform contractual obligations. The occurrence of any of these events could have a material adverse effect on our business, financial condition and results of operations.

Strained relations between the PRC and Taiwan could negatively affect our business and the market price of our common stock.

Taiwan has a unique international political status. Since 1949, Taiwan and the PRC have been separately governed. The PRC government claims that it is the sole government in China and that Taiwan is part of China. Although significant economic and cultural relations have been established during recent years between Taiwan and the PRC, the PRC government has refused to renounce the possibility that it may at some point use force to gain control over Taiwan. Furthermore, the PRC government adopted an anti-secession law relating to Taiwan. Relations between Taiwan and the PRC governments have been strained in recent years for a variety of reasons, including the PRC government's position on the "One China" policy and tensions concerning arms sales to Taiwan by the United States government. Any tension between the Taiwan government and the PRC government, or between the United States and China, could materially and adversely affect the market prices of our common stock.

Past developments in relations between the R.O.C. and the PRC have on occasions depressed the market prices of the securities of companies in the R.O.C. Such initiatives and actions are commonly viewed as having a detrimental effect to reunification efforts between the R.O.C. and the PRC. Relations between the R.O.C. and the PRC and other factors affecting military, political or economic conditions in Taiwan could materially and adversely affect our financial condition and results of operations, as well as the market price and the liquidity of our securities.

If the U.S. dollar or other currencies in which our sales, raw materials, component purchases and capital expenditures are denominated fluctuate significantly against the New Taiwan, or NT, dollar and other currencies, our profitability may be seriously affected.

We have significant foreign currency exposure, and are primarily affected by fluctuations in exchange rates among the U.S. dollar, the NT dollar and other currencies. A portion of our revenues and expenses are denominated in currencies other than NT dollars, primarily U.S. dollars. We do not hedge our net foreign exchange positions through the use of forward exchange contracts or otherwise and as a result we are affected by fluctuations in exchange rates among the U.S. dollar, the NT dollar and other currencies. For example, the announcement of Brexit caused severe volatility in global currency exchange rate fluctuations that resulted in the strengthening of the U.S. dollar against foreign currencies in which we conduct business. Any significant fluctuation in exchange rates may be harmful to our financial condition and results of operations.

The PRC government's control of currency conversion and changes in the exchange rate between the Renminbi and other currencies could negatively affect our financial condition and our ability to pay dividends.

The PRC government imposes controls on the convertibility of the Renminbi into foreign currencies and, in certain cases, the remittance of currency out of China. Under existing PRC foreign exchange regulations, payments of current account items, including profit distributions, interest payments and expenditures from trade related transactions, can be made in foreign currencies without prior approval from State Administration of Foreign Exchange in China, or SAFE, provided that we satisfy certain procedural requirements. However, approval from SAFE or its local counterpart is required where Renminbi is to be converted into foreign currency and remitted out of China to pay capital expenses such as the repayment of loans denominated in foreign currencies. The PRC government may also at its discretion restrict access in

the future to foreign currencies for current account transactions. Our revenue from sales in China (including Hong Kong) accounted for 4% and 7% of our revenues for the years ended August 31, 2022 and 2021, respectively.

Failure to comply with the U.S. Foreign Corrupt Practices Act could subject us to penalties and other adverse consequences.

We are subject to the U.S. Foreign Corrupt Practices Act, or FCPA, which generally prohibits U.S. companies from engaging in bribery or making other prohibited payments to foreign officials for the purpose of obtaining or retaining business. In addition, we are required to maintain records that accurately and fairly represent our transactions and have an adequate system of internal accounting controls. Foreign companies, including some that may compete with us, may not be subject to these prohibitions, and therefore may have a competitive advantage. In the past, there have been instances of corruption, extortion, bribery, pay-offs, theft and other fraudulent practices in Taiwan and China, as well as other Asian countries and Russia. We cannot assure that our employees or other agents will not engage in such conduct and render us responsible under the FCPA. If our employees or other agents are found to have engaged in corrupt or fraudulent business practices, we could suffer severe penalties and other consequences that may have a material adverse effect on our business, financial condition and results of operations.

Item 1B. *Unresolved Staff Comments*

Not applicable.

Item 2. *Properties*

The following are significant manufacturing and office facilities that we own or lease as of August 31, 2022:

- We own a four-story building located in Hsinchu Science Park, Taiwan. We occupy approximately 183 thousand square feet of the building, and we lease approximately 55 thousand square feet of space to a third-party tenant. Approximately 32% of our occupied space in the building is devoted to our manufacturing operations. We lease the land on which the building is situated from the Science Park Administration in Hsinchu.

Item 3. *Legal Proceedings*

Due to the complex technology required to compete successfully in the LED industry, participants in our industry are often engaged in significant intellectual property licensing arrangements, negotiations, disputes and litigation. We are directly or indirectly involved from time to time and may be named in various other claims or legal proceedings arising in the ordinary course of our business or otherwise.

There was no material pending legal proceedings or claims as of August 31, 2022.

Item 4. *Mine Safety Disclosures*

Not applicable.

PART II.

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

Market Price Information for our Common Stock

Our common stock began trading on the NASDAQ Global Select Market under the symbol "LEDS" on December 8, 2010 and was transferred to the NASDAQ Capital Market effective November 5, 2015 where it continues to trade under the same symbol.

There were 66 holders of record of our common stock as of October 31, 2022.

Dividends

We have never declared or paid any cash dividends on our common stock. We currently intend to retain any future earnings to fund the development and expansion of our business, and therefore we do not anticipate paying cash dividends on our common stock in the foreseeable future. Any future determination to pay dividends will be at the discretion of our board of directors and will depend on our results of operations, financial condition, capital requirements, contractual restrictions and other factors deemed relevant by our board of directors.

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

We did not make any repurchases of our common stock and no purchases of common stock were made on our behalf during the fourth quarter of our fiscal 2022.

Item 6. [Reserved]

Not applicable.

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

The following discussion and analysis of our financial condition and results of operations is based upon and should be read in conjunction with the audited consolidated financial statements and the notes included elsewhere in this Annual Report on Form 10-K, as well as the Risk Factors contained in Part I, Item 1A of this Annual Report on Form 10-K, and other information provided from time to time in our other filings with the SEC.

Overview

We develop, manufacture and sell light emitting diode (LED) chips, LED components, LED modules and systems. Our products are used for general specialty industrial applications, including ultraviolet, or UV, curing of polymers, LED light therapy in medical/cosmetic applications, counterfeit detection, LED lighting for horticulture applications, architectural lighting and entertainment lighting.

We package our LED chips into LED components, which we sell to distributors and a customer base that is heavily concentrated in a few select markets, including Netherlands, Taiwan, the United States, Germany and Japan. We also sell our "Enhanced Vertical," or EV, LED product series in blue, white, green and UV in selected markets. Our lighting products customers are primarily original design manufacturers, or ODMs, of lighting products and the end users of lighting devices. We also contract other manufacturers to produce for our sale certain LED products, and for certain aspects of our product fabrication, assembly and packaging processes, based on our design and technology requirements and under our quality control specifications and final inspection process.

We are a holding company for various wholly owned subsidiaries. SemiLEDs Optoelectronics Co., Ltd., or Taiwan SemiLEDs, is our wholly owned operating subsidiary, where a substantial portion of our assets are held and located and where a portion of our research, development, manufacturing and sales activities take place. Taiwan SemiLEDs owns a 97.37% equity interest in Taiwan Bandaoti Zhaoming Co., Ltd., formerly known as Silicon Base Development, Inc., which is engaged in the research, development, manufacture, and substantial portion of marketing and sale of LED products, and where most of our employees are based.

Key Factors Affecting Our Financial Condition, Results of Operations and Business

The following are key factors that we believe affect our financial condition, results of operations and business:

- **COVID-19 Pandemic.** In consideration of the health and well-being of our employees, customers and communities, and in support of efforts to contain the spread of the virus, we have taken several precautionary measures and adjusted our operational needs. Our business, financial condition, liquidity and operating results have been, and may continue to be, adversely affected by COVID-19 and related restrictions. The conditions caused by the COVID-19 pandemic have adversely affected our customers' ability or willingness to purchase our products or services, delayed prospective customers' purchasing decisions, adversely impacted our ability to provide or deliver products and on-site services to our customers, delayed the provisioning of our offerings, or lengthened payment terms, which have adversely affected and could continue to adversely affect our future sales, operating results and overall financial performance. To avoid cash shortage due to the pandemic, we applied and received subsidies from the Taiwan government in fiscal 2021. Our bank granted us a deferment period for twelve months starting from May 2020 until April 2021. During this period, we did not need to pay the monthly payments of the principal but only the interest. We have also devoted ourselves to new product development and expect these new products could bring in new revenue, offsetting the losses resulted from existing customers' delayed purchasing. However, given the ongoing and evolving economic and business impact of the COVID-19 pandemic and subsequent variants, we may be required to further revise certain accounting estimates and judgments, which could have a material adverse effect on our financial position and results of operations.
- **Our ability to raise additional debt funding, sell additional equity securities and improve our liquidity.** We need to improve our liquidity, access alternative sources of funding and obtain additional equity capital or credit when necessary for our operations. In July 2021, we established an at-the-market equity program ("ATM") that allows us to sell up to \$20 million of shares of our common stock from time to time. During fiscal 2022, we sold 286,328 shares of our common stock pursuant to the ATM program for net proceeds of \$964,473. However, we may not be able to obtain such debt funding or sell equity securities on terms that are favorable to us, or at all. The raising of additional debt funding by us, if required and available, would result in increased debt service obligations and could result in additional operating and financing covenants, or liens on our assets, that would restrict our operations. The sale of additional equity securities, if required and available, could result in dilution to our stockholders.

- ***Our ability to source chips from other chip suppliers.*** Our reliance on our chip suppliers exposes us to a number of significant risks, including reduced control over delivery schedules, quality assurance and production costs, lack of guaranteed production capacity or product supply. If our chip suppliers are unable or unwilling to continue to supply our chips at requested quality, quantity, performance and costs, or in a timely manner, our business and reputation could be seriously harmed. Our inability to procure chips from other chip suppliers at the desired quality, quantity, performance and cost might result in unforeseen manufacturing and operations problems. In such events, our customer relationships, business, financial condition and results of operations would be adversely affected.
- ***Industry growth and demand for products and applications using LEDs.*** The overall adoption of LED lighting devices to replace traditional lighting sources is expected to influence the growth and demand for LED chips and component products and impact our financial performance. We believe the potential market for LED lighting will continue to expand. LEDs for efficient generation of UV light are also starting to gain attention for various medical, germicidal and industrial applications. Since a substantial portion of our LED chips, LED components and our lighting products are used by end-users in general lighting applications and specialty industrial applications such as UV curing, medical/cosmetic, counterfeit detection, horticulture, architectural lighting and entertainment lighting the adoption of LEDs into these applications will have a strong impact on the demand of LED chips generally and, as a result, for our LED chips, LED components and LED lighting products.
- ***Average selling price of our products.*** The average selling price of our products may decline for a variety of factors, including prices charged by our competitors, the efficacy of our products, our cost basis, changes in our product mix, the size of the order and our relationship with the relevant customer, as well as general market and economic conditions. Competition in the markets for LED products is intense, and we expect that competition will continue to increase, thereby creating a highly aggressive pricing environment. For example, some of our competitors have in the past reduced their average selling prices, and the resulting competitive pricing pressures have caused us to similarly reduce our prices, accelerating the decline in our revenues and the gross margin of our products. When prices decline, we must also write down the value of our inventory. Furthermore, the average selling prices for our LED products have typically decreased over product life cycles. Therefore, our ability to continue to innovate and offer competitive products that meet our customers' specifications and pricing requirements, such as higher efficacy LED products at lower costs, will have a material influence on our ability to improve our revenues and product margins, although in the near term the introduction of such higher performance LED products may further reduce the selling prices of our existing products or render them obsolete.
- ***Changes in our product mix.*** We anticipate that our gross margins will continue to fluctuate from period to period as a result of the mix of products that we sell and the utilization of our manufacturing capacity in any given period, among other things. For example, we continue to pursue opportunities for profitable growth in areas of business where we see the best opportunity to develop as an end-to-end LED module solution supplier by providing our customers with high quality, flexible and more complete LED system solution, customer technical support and LED module/system design, as opposed to just providing customers with individual components. As a strategic plan, we have placed greater emphasis on the sales of LED components rather than the sales of LED chips where we have been forced to cut prices on older inventory. The growth of our module products and the continued commercial sales of our UV LED product are expected to improve our gross margin, operating results and cash flows. In addition, we have adjusted the lower-priced LED components strategy as appropriate. We have adopted a strategy to adjust our product mix by exiting certain high volume but low unit selling price product lines in response to the general trend of lower average selling prices for products that have been available in the market for some time. However, as we expand and diversify our product offerings and with varying average selling prices, or execute new business initiatives, a change in the mix of products that we sell in any given period may increase volatility in our revenues and gross margin from period to period.
- ***Our ability to reduce cost to offset lower average selling prices.*** Competitors may reduce average selling prices faster than our ability to reduce costs, and competitive pricing pressures may accelerate the rate of decline of our average selling prices. To address increased pricing pressure, we have improved and increased our production yields to reduce the per-unit cost of production of our products. However, such cost savings currently have limited impact on our gross profit, as we currently suffer from the underutilization of manufacturing capacity and must absorb a high level of fixed costs, such as depreciation. While we intend to focus on managing our costs and expenses, over the long term we expect to be required to invest substantially in LED component products development and production equipment if we are to grow.
- ***Our ability to continue to innovate.*** As part of our growth strategy, we plan to continue to be innovative in product design, to deliver new products and to improve our manufacturing efficiencies. Our continued success depends on our ability to develop and introduce new, technologically advanced and lower cost products, such as more efficient, better performance LED component products. If we are unable to introduce new products that are commercially viable and meet rapidly evolving customer requirements or keep pace with evolving technological standards and market developments or are otherwise unable to execute our product innovation strategy effectively, we may not be able to take advantage of market opportunities as they arise, execute our business plan or be able to compete effectively. To differentiate ourselves from other LED package manufacturers, we are putting more resources towards module and system design. Along with our technical know-how in the chip and package sectors, we are able to further integrate electrical, thermal and mechanical manufacturing resources to provide customers with one-stop system services. Services include design, prototyping, OEM and ODM. Key markets that we intend to target at the system end include different types of UV LED industrial printers, aquarium lighting, medical applications, niche imaging light engines, horticultural lighting and high standard commercial lighting. The modules are designed for various printing, curing, and PCB exposure industrial equipment, providing uncompromised reliability and optical output. Our LED components include different sizes and wattage to accommodate different demands in the LED market.

- General economic conditions and geographic concentration.** Many countries including the United States and the European Union (the “E.U.”) members have instituted, or have announced plans to institute, government regulations and programs designed to encourage or mandate increased energy efficiency in lighting. These actions include in certain cases banning the sale after specified dates of certain forms of incandescent lighting, which are advancing the adoption of more energy efficient lighting solutions such as LEDs. When the global economy slows or a financial crisis occurs, consumer and government confidence declines, with levels of government grants and subsidies for LED adoption and consumer spending likely to be adversely impacted. Our revenues have been concentrated in a few select markets, including the Netherlands, Taiwan, the United States, Germany, and Japan. Given that we are operating in a rapidly changing industry, our sales in specific markets may fluctuate from quarter to quarter. Therefore, our financial results will be impacted by general economic and political conditions in such markets. For example, the aggressive support by the Chinese government for the LED industry through significant government incentives and subsidies to encourage the use of LED lighting and to establish the LED-sector companies has resulted in production overcapacity in the market and intense competition. Furthermore, due to Chinese package manufacturers increasing usage of domestic LED chips, prices are increasingly competitive, leading to Chinese manufacturers growing market share in the global LED industry. In addition, we have historically derived a significant portion of our revenues from a limited number of customers. Some of our largest customers and what we produce/have produced for them have changed from quarter to quarter primarily as a result of the timing of discrete, large project-based purchases and broadening customer base, among other things. For the years ended August 31, 2022 and 2021, sales to our three largest customers, in the aggregate, accounted for 59% and 52% of our revenues, respectively. Revlon, our largest customer in 2021 and 2022, filed for Chapter 11 bankruptcy in June 2022, which resulted in a write off receivables of \$126 thousand. If Revlon is not able to reorganize its business successfully, our revenue and financial results could be adversely impacted.
- Intellectual property issues.** Competitors of ours and other third parties have in the past and will likely from time to time in the future allege that our products infringe on their intellectual property rights. Defending against any intellectual property infringement claims would likely result in costly litigation and ultimately may lead to our not being able to manufacture, use or sell products found to be infringing. In June 2012, we settled an intellectual property dispute involving Cree. We agreed to dismiss amended complaints filed against each other without prejudice. We agreed to the entry of a permanent injunction that was effective October 1, 2012 that precludes us from (and/or from assisting others in) making, using, importing, selling and/or offering to sell in the United States certain accused products and/or any device that includes such an accused product after that date and to payment of a settlement fee for past damages. All accused products sold before the date of settlement are released under this agreement and our customers and distributors are specifically released. All remaining claims between Cree and us were withdrawn without prejudice, with each retaining the right to assert them in the future. However, other third parties may also assert infringement claims against our customers with respect to our products, or our customers’ products that incorporate our technologies or products. Any such legal action or the threat of legal action against us, or our customers, could impair such customers’ continued demand for our products. This could prevent us from growing or even maintaining our revenues, or cause us to incur additional costs and expenses, and adversely affect our financial condition and results of operations.
- Cash position.** Our cash and cash equivalents decreased to \$4.3 million as of August 31, 2022 primarily due to the operating loss in fiscal year of 2022. We have implemented actions to accelerate operating cost reductions and improve operational efficiencies. The plan is further enhanced through the fables business model in which we implemented certain workforce reductions and are exploring the opportunities to sell certain equipment related to the manufacturing of vertical LED chips, in order to reduce the idle capacity charges and minimize our research and development activities associated with chips manufacturing operation. In December 2019, we issued convertible unsecured promissory notes with a principal sum of \$2 million, of which, \$600 thousand convertible notes were converted into 200 thousand shares of common stock in May 2020. On May 26, 2021 the Notes were extended with the same terms and interest rate for one year and mature on May 30, 2022, and on May 26, 2022, the Notes were further extended with the same terms and interest rate for one year and now mature on May 30, 2023. As of August 31, 2022 and 2021, the outstanding principal of these notes totaled \$1.4 million. Based on our current financial projections, we believe that we will have sufficient sources of liquidity to fund our operations and capital expenditure plans for the next 12 months.

Components of Consolidated Statements of Operations

Revenues, net

Our core products are LED components, LED modules and systems, which are the most important part of our business, as well as LED chips and lighting products.

Our revenues are affected by sales volumes of our LED chips, LED components and lighting products and our average selling prices for such products. In addition, as we expand and diversify our product offerings and with varying average selling prices, any change in the mix of products that we sell in any given period may affect our total revenues. For example, average selling prices for our LED components are generally higher than for LED chips and the average selling prices for our lighting products are higher than for our LED chips and LED components.

We recognize revenue on sales of our products when persuasive evidence of an arrangement exists, the price is fixed or determinable, ownership and risk of loss has transferred and collection of the sales proceeds is probable. We obtain written purchase authorizations from our customers as evidence of an arrangement and these authorizations generally provide for a specified amount of product at a fixed price. We typically consider delivery to have occurred at the time of shipment, unless otherwise agreed in the applicable sales terms, as this is generally when title and risk of loss for the product passes to the customer.

Our larger customers typically provide us with non-binding rolling forecasts of their requirements for the coming one to three months; however, recent global economic uncertainty and weakness has led to reduced spending in our target markets and made it difficult for our customers and us to accurately forecast and plan future business activities. Our customers may increase, decrease, cancel or delay purchase orders already in place, with no material consequences to the customer. As a result, we may face increased inventories and our backlog may decline as a result of any economic downturn or material change in market conditions or economic outlook. We price our products in accordance with prevailing market conditions, taking into account the technical specifications of the product being sold, the order volume, the strength and history of our relationship with the customer, our inventory levels and our capacity utilization. When average selling prices drop, as they did in recent years, inventory write-downs to net realizable values may also result.

Our customers consist primarily of packagers, ODMs and end-customers. Our revenues attributable to our ten largest customers accounted for 88% and 82% of our revenues for the years ended August 31, 2022 and 2021, respectively.

Our revenues have been concentrated in a few select markets, including the Netherlands, Taiwan, the United States, Germany and Japan. Net revenues generated from these countries, in the aggregate, accounted for 91% and 82% of our net revenues for the years ended August 31, 2022 and 2021, respectively. We expect that our revenues will continue to be substantially derived from these countries for the foreseeable future. Given that we are operating in a rapidly changing industry, our sales in specific markets may fluctuate from quarter to quarter. Therefore, our financial results will be impacted by general economic and political conditions in such markets.

Our revenues are presented net of estimated sales returns and discounts. We estimate sales returns and discounts based on our historical discounts and return rates and our assessment of future conditions.

Cost of Revenues

Our cost of revenues consists primarily of cost of materials, depreciation expenses, manufacturing overhead costs, direct labor costs and utilities cost, all related to the manufacture of our LED products. Materials include raw materials, other materials such as gases and chemicals, consumables, and assembly materials. Because our products are manufactured based on customers' orders and specifications and we purchase materials and supplies to support such orders, we generally purchase our materials at spot prices in the marketplace and do not maintain long-term supply contracts. We purchase materials from several suppliers. Our procurement policy is to select only a small number of qualified vendors who demonstrate quality of materials and reliability on delivery time. We are subject to variations in the cost of our materials and consumables from period to period. Moreover, because we consume a significant amount of electricity in our manufacturing process, any fluctuations in electricity costs will have an impact on our cost of revenues. We also use contract manufacturers to produce for our certain LED products, and for certain aspects of our product fabrication, assembly and packaging processes, based on our design and technology requirements and under our quality control specifications and final inspection process.

Direct labor costs consist of salary (including stock-based compensation expenses), bonus, training, retirement and other costs related to our employees engaged in the manufacture of our products. Manufacturing overhead costs consist primarily of salaries, bonuses and other benefits (including stock-based compensation expenses) for our administrative personnel allocated to manufacturing functions, repairs and maintenance costs for equipment and machinery maintenance costs and lease expenses.

Our cost of revenues also includes excess capacity charges as a result of the underutilization of our manufacturing capacity and inventory valuation adjustments to write down our inventories to their estimated net realizable values as a result of declines in their average selling prices.

Operating Expenses

Research and development. Our research and development expenses, which are expensed as incurred, consist primarily of expenses related to employee salaries, bonuses and other benefits (including stock-based compensation expenses) for our research and development personnel, engineering charges related to product design, purchases of materials and supplies, repairs and maintenance and depreciation related expenses.

Selling, general and administrative. Selling, general and administrative expenses consist primarily of salaries, bonuses and other benefits (including stock-based compensation expenses) for our administrative, sales and marketing personnel, expenses for professional services, which include fees and expenses for accounting, legal, tax and valuation services, amortization and depreciation related expenses, marketing related travel, lease expenses, entertainment expenses, allowance for doubtful accounts and general office related expenses, as well

as compensation to our directors. We expect our selling, general and administrative expenses to decrease as we continue to implement cost reduction initiatives, such as spending controls, and as we continue to streamline our operations.

Gain on disposal of long-lived assets, net. We recognized a gain of \$196 thousand and \$286 thousand on the disposal of long-lived assets for the years ended August 31, 2022 and 2021, respectively. Due to the excess capacity charges that we have suffered for a few years, considering the risk of technological obsolescence and according to the production plan built based on our sales forecast, we disposed of a certain level of our idle equipment.

Other Income (Expense)

Interest expenses, net. Interest expenses, net consist of interest income and interest expense. Interest income represents interest earned from our cash and cash equivalents deposited with commercial banks in the United States and Taiwan. As of August 31, 2022 and 2021, we had cash and cash equivalents of \$4.3 million and \$4.8 million, respectively, which consisted of time deposits with initial maturity of greater than three months but less than one year. Interest expense consists primarily of interest on our convertible notes and long-term borrowings and/or short-term lines of credit with certain banks in Taiwan as well as with our Chairman and largest stockholder. We had long-term debt totaling \$6.9 million and \$7.7 million as of August 31, 2022 and 2021, respectively.

Other income, net. Other income for the years ended August 31, 2022 and 2021 primarily consists of rental income from the lease of spare space in our Hsinchu building and a government subsidy for the COVID-19 pandemic impact.

Foreign currency transaction gain (loss), net. We recognized a net foreign currency transaction loss of \$642 thousand and a net gain of \$342 thousand for the years ended August 31, 2022 and 2021, respectively, primarily due to the appreciation of the U.S. dollar against the NT dollar from bank deposits and accounts payable held by Taiwan SemiLEDs and Taiwan Bandaoti Zhaoming Co., Ltd. in currency other than the functional currency of such subsidiaries.

Provision for Income Taxes

United States tax treatment. We and one of our subsidiaries, Helios Crew, are United States corporations and are therefore required to file federal income tax returns with the Internal Revenue Service as well as with certain applicable state tax authorities. As our operations in the United States have been minimal, we have not to date recorded nor paid any significant federal or state corporate income tax.

We have investments in controlled foreign corporations and affiliates, which under Subpart F of the United States Internal Revenue Code, or Subpart F, may under certain circumstances subject our investments in controlled foreign corporations and affiliates to taxation in the United States. Subpart F provides that United States corporations may be required to include in their income certain undistributed earnings of the foreign corporations and affiliates as though such earnings had been distributed currently. Subpart F applies only to United States shareholders (such as us) who hold an interest in a foreign corporation and affiliates that meet the definition of a “controlled foreign corporation.” Under Section 957(a) of the United States Internal Revenue Code, a “controlled foreign corporation” means any foreign corporation if more than 50% of either (i) the total combined voting power of all classes of stock of such corporation entitled to vote, or (ii) the total value of the stock of such corporation, is owned by “United States Shareholders” on any day during the foreign corporation’s taxable year.

Subpart F does not apply, however, to the income of a controlled foreign corporation generated from the sale of goods that are manufactured in its country of incorporation. Also, any income attributable to a controlled foreign corporation and its affiliates that is not engaged in a United States trade or business is generally not subject to United States taxation until its earnings are distributed, or the stock of the foreign corporation is disposed. All of our products are manufactured in Taiwan by Taiwan SemiLEDs, our wholly owned foreign subsidiary. Because Taiwan SemiLEDs conducts its manufacturing activities in Taiwan, the income or loss of Taiwan SemiLEDs is included in our consolidated financial statements, but is not considered taxable income for United States taxation purposes pursuant to Section 954(d)(1)(A) of the United States Internal Revenue Code. This generally enables a United States taxpayer, such as us, to indefinitely defer United States taxation on the profits earned by its controlled foreign corporations and affiliates by retaining the earnings in such entities. We do not currently have any plans to repatriate any of our retained earnings from any of our controlled foreign subsidiaries or affiliates and we do not currently have any plans to declare or pay any dividends from such entities.

On December 22, 2017, the U.S. Tax Cuts and Jobs Act was adopted, which among other effects, reduced the U.S. federal corporate income tax rate to 21% from 34% (or 35% in certain cases) beginning in 2018, requires companies to pay a one-time transition tax on certain unrepatriated earnings from non-U.S. subsidiaries that is payable over eight years, makes the receipt of future non-U.S. sourced income of non-U.S. subsidiaries tax-free to U.S. companies and creates a new minimum tax on the earnings of non-U.S. subsidiaries relating to the parent’s deductions for payments to the subsidiaries. Our provisional estimate is that no tax will be due under this provision.

The current presidential administration in the United States modified the rules governing taxation of controlled foreign corporations and affiliates and any such changes were not expected to result in our having to pay applicable taxes in the United States on income earned by such entities.

Taiwan tax treatment. The corporate income tax rate in Taiwan is 20% for the year ended August 31, 2022 and 2021. Corporate income taxes payable, however, are subject to an alternative minimum tax. The Taiwan government enacted the Taiwan Alternative Minimum Tax Act, or the AMT Act, on January 1, 2006. Under the AMT Act, a taxpayer must pay the higher of its taxable income multiplied by the corporate income tax rate or the alternative minimum tax, or AMT. In calculating the AMT amount, the taxpayer must include income that would otherwise be exempt from taxation pursuant to various tax holidays or investment tax credits, other than certain exemptions or tax credits that have been grandfathered for the purposes of calculating AMT. The AMT rate for business entities is 12%. In addition to the statutory corporate taxes payable, or the AMT, corporate taxpayers in Taiwan are subject to an additional tax on distributable retained earnings (after statutory legal reserves) to the extent that such earnings are not distributed prior to the end of the subsequent year. This undistributed earnings surtax is determined in the subsequent year when the distribution plan relating to earnings attributable to the prior year is approved by a company's stockholders and is payable in the subsequent year. The surtax rate has been reduced from 10% to 5%, starting applicable to the undistributed retained earnings of the year ended August 31, 2019. Because most of our subsidiaries in Taiwan incurred losses before income tax for both our fiscal year 2022 and 2021, we do not expect to pay such taxes on undistributed earnings.

In addition, in accordance with the Taiwan Income Tax Act, dividends distributed by companies incorporated in accordance with the Taiwan Company Act shall be deemed as income derived from sources in Taiwan and income taxes shall be levied on the shareholders receiving such dividends. In the event that a Taiwan incorporated company distributes dividends to its foreign shareholders, it will be required to withhold tax payable by the foreign shareholders at the time of payment at a rate of 20% or a lower tax treaty rate if applicable. Therefore, dividends received from our subsidiaries in Taiwan, if any, will be subjected to withholding tax under Taiwan law.

As of August 31, 2022, we had total foreign net operating loss carryforwards of \$96 million, arising primarily from certain of our consolidated and majority owned subsidiaries in Taiwan, which will expire in various amounts in future years. Pursuant to the Taiwan Income Tax Act, as amended in January 2009, net operating loss carryforwards can be carried forward for a period of ten years.

Income Taxes

We are subject to income taxes in both the United States and foreign jurisdictions. Significant management judgment is required in determining our income taxes, our deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets. Our deferred tax assets represent future tax benefits to be received when certain expenses previously recognized in our consolidated statements of operations become deductible expenses under applicable income tax laws or when loss or credit carryforwards are utilized. Realization of these deferred tax assets is dependent on our ability to earn future taxable income against which these deductions, losses and credits can be utilized. Therefore, we assess the likelihood that our deferred tax assets will be recovered from future taxable income and, to the extent we believe that recovery is not more likely than not, a valuation allowance is established. These estimates and judgments about our future taxable income are based on assumptions that are consistent with our future plans. A net cumulative loss in recent years is a significant piece of negative evidence in determining the realization of the benefits of deferred tax assets. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. We have provided a full valuation allowance on our deferred tax assets because our cumulative losses in recent years causes us to believe that realization of our deferred tax assets is not more likely than not.

Inventory Valuation

Inventories consist of raw materials, work in process and finished goods and are stated at the lower of cost or net realizable value. We determine cost using a weighted average. For work in process and manufactured inventories, cost consists of raw materials, direct labor and an allocated portion of our production overhead. At each balance sheet date, we evaluate our ending inventories for excess quantities and obsolescence, and we write down our inventory to its estimated net realizable value based upon assumptions about future demand and market conditions. Our estimation of future demand is primarily based on the backlog of customer orders as of the balance sheet date and projections based on our actual historical sales trends and customers' demand forecast. We evaluated our inventories on an individual item basis. For our finished goods and work in process, if the estimated net realizable value for an inventory item, which is the estimated selling price in the ordinary course of business, less reasonably predictable costs to completion and disposal, is lower than its cost, the specific inventory item is written down to its estimated net realizable value. Market for raw materials is based on replacement cost. We also write down items that are considered obsolete based upon changes in customer demand, manufacturing process changes or new product introductions that may eliminate demand for the product. Once written down, inventories are carried at this lower amount until sold or scrapped. Provisions for inventory write-downs are included in our costs of revenues in the consolidated statements of operations. There is significant judgment involved with the estimates of excess and obsolescence and if our estimates regarding customer demand or other factors are inaccurate or actual market conditions or technological changes are less favorable than those estimated by management, additional future inventory write-downs may be required that could adversely affect our operating results. Inventory write-downs totaled \$807 thousand and \$659 thousand for the years ended

August 31, 2022 and 2021, respectively. A majority of our inventory write-downs during the years ended August 31, 2022 and 2021 was related to finished goods and work in process, primarily as a result of obsolescence.

Useful Life of Property, Plant and Equipment

Property, plant and equipment are stated at cost less accumulated depreciation and amortization. Depreciation on property, plant and equipment is calculated using the straight-line method over the estimated useful lives of the assets. Leasehold improvements are amortized using the straight-line method over the shorter of the lease term or the estimated useful life of the asset. We make estimates of the useful life of our property, plant and equipment in order to determine depreciation expense to be recorded each reporting period based on similar assets purchased in the past and our historical experience with such similar assets, as well anticipated technological or market changes. The estimated useful life of our property, plant and equipment directly impacts the timing of when our depreciation expense is recognized. There is significant judgment involved with estimating the useful lives of our property, plant and equipment, and a change in the estimates of such useful lives could cause our depreciation expense in future periods to increase significantly.

Impairment of Long-lived Assets

In assessing the recoverability of our long-lived assets, we first, determine whether indicators of impairment are present. Circumstances such as the discontinuation of a product or product line, a sudden or consistent decline in the forecast for a product, changes in technology or in the way an asset is being used, a history of negative operating cash flow, or an adverse change in legal factors or in the business climate, among others, may trigger an impairment review. Second, if we determine that indicators of impairment are present, we determine whether the estimated undiscounted cash flows expected to be generated from the use and eventual disposal of the potentially impaired assets (or asset group) are less than the carrying amount. Third, if such estimated undiscounted cash flows do not exceed the carrying amount, we estimate the fair value of the asset (or asset group) and recognize an impairment charge if the carrying amount is greater than the fair value of the asset (or asset group). Fair value is determined through various valuation techniques, including discounted cash flow models, quoted market values and third-party independent appraisers, as considered necessary. We group our long-lived assets with other assets and liabilities at the lowest level for which identifiable cash flows are generated, or an asset group. We determined that we have two asset groups for impairment testing purposes, one of which is associated with the manufacture and sale of LED chips and LED components, and the other is associated with our Ning Xiang subsidiary, which is engaged in the manufacture and sale of lighting fixtures and systems.

The estimates of future cash flows involve subjective judgments and represent our best estimate at each date of assessment about future developments, determined based on reasonable and supportable assumptions and projections taking into account past experience, as well as market data obtained from independent external sources. The use of different assumptions could increase or decrease the estimates of expected future cash flows and consequently, increase or decrease the related impairment charges. For example, if the average selling prices continue to decline beyond the assumptions used in our forecast of future cash flows expected to be generated by the asset groups, or if demand for our LED products does not grow as we anticipate, or if utilization rates are lower than anticipated, it is reasonably possible that the estimate of expected future cash flows may change in the near term resulting in the need to adjust our determination of fair value.

For the year ended August 31, 2022, lower than projected sales of our LED products and lower market capitalization compared to our consolidated net book values again indicated potential impairment of our long-lived assets. We projected undiscounted future cash flows to analyze potential impairment, based upon a variety of factors, including primarily our continuous efforts to suppress gross loss from chip sales and the cooperation model discussed with other parties, considering all known trends and uncertainties. The significant assumptions used in determining the estimated undiscounted cash flows for the LED chips and components asset group were revised to reflect the new operation status. Based on the assessment, the expected undiscounted cash flows to be generated by this asset group exceeded its carrying value. Consequently, no asset impairment was recognized during the year ended August 31, 2022.

Critical Accounting Policies and Estimates

We believe that the application of the following accounting policies, which are important to our financial position and results of operations, require significant judgments and estimates on the part of management. For a summary of our significant accounting policies, including the accounting policies discussed below, see Note 2 to the Consolidated Financial Statements.

Revenue Recognition

The Company recognizes the amount of revenue when the Company satisfies a performance obligation to which it expects to be entitled for the transfer of promised goods or services to customers. The Company obtains written purchase authorizations from its customers as evidence of an arrangement and these authorizations generally provide for a specified amount of product at a fixed price. Generally, the Company considers delivery to have occurred at the time of shipment as this is generally when title and risk of loss for the products will pass to the customer. The Company provides its customers with limited rights of return for non-conforming shipments and product warranty

claims. Based on historical return percentages, which have not been material to date, and other relevant factors, the Company estimates its potential future exposure on recorded product sales, which reduces product revenues in the consolidated statements of operations and reduces accounts receivable in the consolidated balance sheets. The Company also provides standard product warranties on its products, which generally range from three months to two years. Management estimates the Company's warranty obligations as a percentage of revenues, based on historical knowledge of warranty costs and other relevant factors. To date, the related estimated warranty provisions have been insignificant. Refer to Note 2 to the Consolidated Financial Statements for our revenue recognition policies.

Accounts Receivable

The allowance for doubtful accounts is based on management's assessment of the collectability of customer accounts. Management regularly reviews the allowance by considering certain factors such as historical experience, industry data, credit quality, age of accounts receivable balances and current economic conditions that may affect a customer's ability to pay. Bad debt expenses were recognized \$126 thousand and \$540 thousand during the years ended August 31, 2022 and 2021, respectively.

Write-down of Inventories

The Company writes down excess and obsolete inventory to its estimated net realizable value. The net realized value of inventories is the estimated selling price in the ordinary course of business less the estimated costs of completion and disposal. The estimation of net realized value is based on current market conditions and historical experience with product sales of similar nature. Changes in market conditions may have a material impact on the estimation of the net realizable value. For finished goods and work in process, if the estimated net realizable value for an inventory item, which is the estimated selling price in the ordinary course of business, less reasonably predictable costs to completion and disposal, is lower than its cost, the specific inventory item is written down to its estimated net realizable value. Net realizable value for raw materials is based on replacement cost. Provisions for inventory write downs are included in cost of revenues in the consolidated statements of operations. Once written down, inventories are carried at this lower cost basis until sold or scrapped. Inventory write-downs to estimated net realizable values for the years ended August 31, 2022 and 2021 were \$807 thousand and \$659 thousand, respectively.

Exchange Rate Information

We are a Delaware corporation and, under SEC requirements, must report our financial position, results of operations and cash flows in accordance with accounting principles generally accepted in the United States of America, or U.S. GAAP. At the same time, our subsidiaries use the local currency as their functional currency. For example, the functional currency for Taiwan SemiLEDs is the NT dollar. The assets and liabilities of the subsidiaries are, therefore, translated into U.S. dollars at exchange rates in effect at each balance sheet date, and income and expense accounts are translated at average exchange rates during the period. The resulting translation adjustments are recorded to a separate component of accumulated other comprehensive income (loss) within equity. Any gains and losses from transactions denominated in currencies other than their functional currencies are recognized in the consolidated statements of operations as a separate component of other income (expense). Due to exchange rate fluctuations, such translated amounts may vary from quarter to quarter even in circumstances where such amounts have not materially changed when denominated in their functional currencies.

The translations from NT dollars to U.S. dollars were made at the exchange rates set forth in the statistical release of the Bank of Taiwan. On August 31, 2022 the exchange rate was 30.44 NT dollars to one U.S. dollar. On October 31, 2022, the exchange rate was 32.22 NT dollars to one U.S. dollar.

No representation is made that the NT dollar or U.S. dollar amounts referred to herein could have been or could be converted into U.S. dollars or NT dollars, as the case may be, at any particular rate or at all.

Results of Operations

The following table sets forth, for the periods presented, our consolidated statements of operations information. In the table below and throughout this “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” the following consolidated statement of operations data for the years ended August 31, 2022 and 2021 has been derived from our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K. The information contained in the table below should be read in conjunction with our consolidated financial statements and notes thereto included in Item 8, Financial Statements and Supplementary Data, of this Annual Report on Form 10-K. The historical results presented below are not necessarily indicative of the results that may be expected for any future period:

	Years Ended August 31,			
	2022		2021	
	\$	% of Revenues	\$	% of Revenues
(in thousands)				
Consolidated Statement of Operations Data:				
Revenues, net	\$ 7,051	100 %	\$ 4,735	100 %
Cost of revenues	5,654	80 %	3,702	78 %
Gross profit	1,397	20 %	1,033	22 %
Operating expenses:				
Research and development	1,484	21 %	1,623	34 %
Selling, general and administrative	3,309	47 %	3,614	76 %
Gain on disposals of long-lived assets, net	(196)	(3) %	(286)	(6) %
Total operating expenses	4,597	65 %	4,951	104 %
Loss from operations	(3,200)	(45) %	(3,918)	(82) %
Other income (expenses):				
Interest expenses, net	(369)	(5) %	(371)	(8) %
Other income, net	1,485	21 %	1,090	23 %
Foreign currency transaction (loss) gain, net	(642)	(9) %	342	7 %
Total other income, net	474	7 %	1,061	22 %
Loss before income taxes	(2,726)	(38) %	(2,857)	(60) %
Income tax expense	—	—	—	—
Net loss	(2,726)	(38) %	(2,857)	(60) %
Less: Net loss attributable to noncontrolling interests	18	— %	(6)	— %
Net loss attributable to SemiLEDs stockholders	\$ (2,744)	(38) %	\$ (2,851)	(60) %

Year Ended August 31, 2022 Compared to Year Ended August 31, 2021

	Years Ended August 31,				Change \$	Change %
	2022		2021			
	\$	% of Revenues	\$	% of Revenues		
(in thousands)						
LED chips	\$ 166	2 %	\$ 171	4 %	\$ (5)	(3) %
LED components	4,872	69 %	3,259	69 %	1,613	49 %
Lighting products	533	8 %	730	15 %	(197)	(27) %
Other revenues ⁽¹⁾	1,480	21 %	575	12 %	905	157 %
Total revenues, net	7,051	100 %	4,735	100 %	2,316	49 %
Cost of revenues	5,654	80 %	3,702	78 %	1,952	53 %
Gross profit	\$ 1,397	20 %	\$ 1,033	22 %	\$ 364	35 %

(1) Other includes primarily revenues attributable to the sale of epitaxial wafers, scraps and raw materials, the provision of services and the lease of manufacturing as well as research and development facilities.

Revenues, net

Our revenues increased by 49% from \$4.7 million for the year ended August 31, 2021 to \$7.1 million for the year ended August 31, 2022. The increase in revenues was driven primarily by a \$1.6 million increase in revenues attributable to sales of LED components and a \$905 thousand increase in other revenues, offset in part by a \$202 thousand decrease in revenues attributable to the sales of LED chips and lighting products.

Revenues attributable to the sales of our LED components increased by 49% from \$3.3 million for the year ended August 31, 2021 to \$4.9 million for the year ended August 31, 2022. The increase in revenues attributable to sales of LED components was primarily due to a result of higher volume of sales of LED components products. We have adopted a strategy to adjust our product mix by exiting certain high volume but low unit selling price product lines in response to the general trend of lower average selling prices for products that have been available in the market for some time and to focus on the profitable products.

Revenues attributable to the sales of lighting products represented 8% and 15% of our revenues for the years ended August 31, 2022 and 2021, respectively. The decrease in revenues attributable to the sales of lighting products was mainly due to a lower in demand on LED luminaries and retrofits and fewer non-recurring project-based orders for LED lighting products.

Revenues attributable to the sales of our LED chips represented 2% and 4%, respectively, of our revenues for the years ended August 31, 2022 and 2021, respectively, and the slight decrease was primarily due to a lower volumes of LED chips sold in the fiscal year ended August 31, 2022.

Revenues attributable to other revenues represented 21% and 12% of our revenues for the years ended August 31, 2022 and 2021, respectively. The increase in revenues attributable to other revenues was primarily due to the provision of services and the sale of raw materials.

Cost of Revenues

Our cost of revenues increased by 53% from \$3.7 million for the year ended August 31, 2021 to \$5.7 million for the year ended August 31, 2022. The increase in cost of revenues was primarily due to the increase of volumes sold in LED components and lighting products. Inventory write-downs totaled \$807 thousand and \$659 thousand for the years ended August 31, 2022 and 2021, respectively. A majority of our inventory write-downs during the years ended August 31, 2022 and 2021 was related to finished goods and work in process, primarily as a result of obsolescence.

Gross Profit

Our gross profit increased from \$1.0 million for the year ended August 31, 2021 to \$1.4 million for the year ended August 31, 2022. Our gross margin percentage was 20% for the year ended August 31, 2022, as compared to 22% for the year ended August 31, 2021 as a result of an increase in the sales of products with lower margin.

Operating Expenses

	Years Ended August 31,				Change \$	Change %
	2022		2021			
	\$	% of Revenues	\$	% of Revenues		
	(in thousands)					
Research and development	\$ 1,484	21 %	\$ 1,623	34 %	\$ (139)	(9) %
Selling, general and administrative	3,309	47 %	3,614	76 %	(305)	(8) %
Gain on disposals of long-lived assets, net	(196)	(3) %	(286)	(6) %	90	(31) %
Total operating expenses	<u>\$ 4,597</u>	<u>65 %</u>	<u>\$ 4,951</u>	<u>104 %</u>	<u>\$ (354)</u>	<u>(7) %</u>

Research and development. Our research and development expenses decreased from \$1.6 million for the year ended August 31, 2021 to \$1.5 million for the year ended August 31, 2022. The slight decrease was primarily due to a \$173 thousand decrease in materials and supplies used in research and development, offset partially by an increase in payroll expense and other operating expenses.

Selling, general and administrative. Our selling, general and administrative expenses decreased from \$3.6 million for the year ended August 31, 2021 to \$3.3 million for the year ended August 31, 2022. The decrease was mainly attributable to a \$497 thousand decrease in bad debt expense, offset partially by an increase in payroll expense, shipping and freight fees, and other various expenses.

Gain on disposal of long-lived assets, net. We recognized a gain of \$196 thousand and \$286 thousand, net on the disposal of long-lived assets for the years ended August 31, 2022 and 2021, respectively. The decrease in the fiscal year ended August 31, 2022 was primarily due to excess capacity charges that we have suffered for several years. In light of the risk of technological obsolescence and according to the production plan built based on our sales forecast, we disposed of certain of our idle equipment.

Other Income (Expenses)

	Years Ended August 31,			
	2022		2021	
	\$	% of Revenues	\$	% of Revenues
	(in thousands)			
Interest expenses, net	\$ (369)	(5) %	\$ (371)	(8) %
Other income, net	1,485	21 %	1,090	23 %
Foreign currency transaction (loss) gain, net	(642)	(9) %	342	7 %
Total other income, net	\$ 474	7 %	\$ 1,061	22 %

Interest expenses, net. Interest expenses, net which primarily consisted of accrued interest on convertible notes, NT dollar denominated long-term notes and \$3.2 million of loans with our Chairman and Chief Executive Officer and our largest shareholder. The decrease in interest expenses, net was insignificant.

Other income, net. Other income, net increase from \$1 million for the years ended August 31, 2021 to \$1.5 million for the year ended August 31, 2022, primarily due to higher rental income and payments received under the new Patent Cross-License Agreement with CrayoNano AS.

Foreign currency transaction gain (loss), net. We recognized a net foreign currency transaction loss of \$642 thousand and a net gain of \$342 thousand for the years ended August 31, 2022 and 2021, respectively, primarily due to the appreciation of the U.S. dollar against the NT dollar from bank deposits and accounts payables held by Taiwan SemiLEDs and Taiwan Bandaoti Zhaoming Co., Ltd. in currency other than the functional currency of such subsidiaries.

Income Tax Expense (Benefit)

Our effective tax rate is expected to be approximately zero for both fiscal 2022 and 2021, since Taiwan SemiLEDs incurred losses, and because we provided a full valuation allowance on all deferred tax assets, which consisted primarily of net operating loss carryforwards and foreign investment loss.

As of August 31, 2022 and 2021, we recognized full valuation allowances of \$22.5 million and \$33.8 million, respectively, on our net deferred tax assets to reflect uncertainties related to our ability to utilize these deferred tax assets, which consist primarily of certain net operating loss carryforwards and foreign investment loss. We considered both positive and negative evidence, including forecasts of future taxable income and our cumulative loss position, and continued to report a full valuation allowance against our deferred tax assets as of both August 31, 2022 and 2021. We continue to review all available positive and negative evidence in each jurisdiction and our valuation allowance may need to be adjusted in the future as a result of this ongoing review. Given the magnitude of our valuation allowance, future adjustments to this allowance based on actual results could result in a significant adjustment to our results of operations.

As of August 31, 2022, we had U.S. federal net operating loss (“NOLs”) carryforwards of \$3 million, which will expire in various amounts beginning in our fiscal 2025. NOLs generated in tax years prior to August 31, 2018 can be carried forward for twenty years, whereas NOLs generated after August 31, 2018 can be carried forward indefinitely. Utilization of these net operating losses carryforwards may be subject to an annual limitation due to applicable provisions of the Internal Revenue Code and local tax laws if we have experienced an “ownership change” in the past, or if an ownership change occurs in the future.

As of August 31, 2022, we had total foreign net operating loss carryforwards of \$96 million, arising primarily from certain of our consolidated and majority owned subsidiaries in Taiwan. Pursuant to the Taiwan Income Tax Act, as amended in January 2009, net operating losses carryforwards can be carried forward for a period of ten years.

Net Income (Loss) Attributable to Noncontrolling Interests

	Years Ended August 31,			
	2022		2021	
	\$	% of Revenues	\$	% of Revenues
	(in thousands)			
Net Income (Loss) attributable to noncontrolling interests	\$ 18	— %	\$ (6)	— %

We recognized net income attributable to non-controlling interests of \$18 thousand and a net loss attributable to non-controlling interests of \$6 thousand for the year ended August 31, 2022 and 2021, respectively, which was attributable to the share of the net losses of Taiwan Bandaoti Zhaoming Co., Ltd. held by the non-controlling holders. Non-controlling interests represented 2.63% and 3.05% equity interest in Taiwan Bandaoti Zhaoming Co., Ltd. as of August 31, 2022 and 2021, respectively.

Liquidity and Capital Resources

This section includes a discussion and analysis of our cash requirements, contingencies, sources and uses of cash, operations, working capital and long-term assets and liabilities.

Contingencies

We have several operating leases with third parties, primarily for land, plant and office spaces in Taiwan, including cancellable and noncancelable leases that expire at various dates between December 2024 and December 2040. See Note 6, "Commitments and Contingencies" in the notes to our audited consolidated financial statements in this Form 10-K.

Sources and Uses of Cash

As of August 31, 2022 and 2021, we had cash and cash equivalents of \$4.3 million and \$4.8 million, respectively, which were predominately held in U.S. dollar denominated demand deposits and/or money market funds. We require cash to fund our operating expenses, working capital requirements and service our debts, including principal and interest.

Long-term assets and liabilities

Our long-term assets consist primarily of property, plant and equipment, intangible assets, operating lease assets and investments in unconsolidated entities. Our manufacturing rationalization plans have included efforts to utilize our existing manufacturing assets and supply arrangements more efficiently. We believe that near-term access to additional manufacturing capacity, should it be required, could be readily obtained on reasonable terms through manufacturing agreements with third parties. We will continue to look for opportunities to make strategic manufacturing in the future for additional capacity.

Our long-term liabilities consist primarily long-term debt and operating lease liabilities.

Our long-term debt, which consisted of NT dollar denominated long-term notes, convertible unsecured promissory notes, and loans from our Chairman and our largest shareholder, totaled \$6.9 million and \$7.7 million as of August 31, 2022 and 2021, respectively.

Our NT dollar denominated long-term notes, totaled \$2.4 million and \$3.2 million as of August 31, 2022 and 2021, respectively. These long-term notes consisted of two loans which we entered into on July 5, 2019, with aggregate amounts of \$3.2 million (NT\$100 million). The first loan originally for \$2.0 million (NT\$62 million) has an annual floating interest rate equal to the NTD base lending rate plus 0.64% (or 1.815% currently), and was exclusively used to repay the existing loans. The second loan originally for \$1.2 million (NT\$38 million) has an annual floating interest rate equal to the NTD base lending rate plus 1.02% (or 2.195% currently) and is available for operating capital. These loans are secured by an \$82 thousand (NT\$2.5 million) security deposit and a first priority security interest on the Company's headquarters building. Due to the impact of the COVID-19 pandemic, the bank agreed to give us a deferment period for twelve months starting from May 2020 until April 2021. During this period, we did not need to pay the monthly payments of the principal but only the interest.

- Starting from May 2021, the first note payable requires monthly payments of principal in the amount of \$25 thousand plus interest over the 74-month term of the note with final payment to occur in July 2027 and, as of August 31, 2022, our outstanding balance on this note payable was approximately \$1.5 million.

- Starting from May 2021, the second note payable requires monthly payments of principal in the amount of \$15 thousand plus interest over the 74-month term of the note with final payment to occur in July 2027 and, as of August 31, 2022, our outstanding balance on this note payable was approximately \$0.9 million.

Property, plant and equipment pledged as collateral for our notes payable were \$2.8 million and \$3.5 million as of August 31, 2022 and 2021, respectively.

On January 8, 2019, we entered into loan agreements with each of our Chairman and Chief Executive Officer and our largest shareholder, with aggregate amounts of \$3.2 million, and an annual interest rate of 8%. All proceeds of the loans were exclusively used to return the deposit to Formosa Epitaxy Incorporation in connection with the proposed sale of our headquarters building pursuant to the agreement dated December 15, 2015. We were initially required to repay the loans of \$1.5 million on January 14, 2021 and \$1.7 million on January 22, 2021, respectively. On January 16, 2021, the maturity date of these loans was extended with same terms and interest rate for one year to January 15, 2022, and on January 14, 2022, the maturity date of these loans was further extended with same terms and interest rate for one more year to January 15, 2023. As of August 31, 2022 and 2021, these loans totaled \$3.2 million, respectively. The loans are secured by a second priority security interest on the Company's headquarters building.

On November 25, 2019 and on December 10, 2019, we issued convertible unsecured promissory notes to each of our Chairman and Chief Executive Officer and our largest shareholder (the "Holders"), with a principal sum of \$2 million and an annual interest rate of 3.5%. Principal and accrued interest was due on demand by the Holders on and at any time after May 30, 2021 (the "Maturity Date"). The outstanding principal and unpaid accrued interest of the Notes may be converted into our Common Stock based on a conversion price of \$3 dollars per share, at the option of the Holders any time from the date of the Notes. On May 25, 2020, the Holders each converted \$300 thousand of notes into 100,000 shares of our common stock. On May 26, 2021, the Notes were extended with the same terms and interest rate for one year and were scheduled to mature on May 30, 2022, and on May 26, 2022, the Notes were further extended with the same terms and interest rate for one year and now mature on May 30, 2023. As of August 31, 2022 and 2021, the outstanding principal of these notes totaled \$1.4 million.

Working Capital

We have incurred significant losses since inception, including net losses attributable to SemiLEDs stockholders of \$2.7 million and \$2.9 million during the years ended August 31, 2022 and 2021, respectively. Net cash used in operating activities for the year ended August 31, 2022 was \$1.5 million. As of August 31, 2022, we had cash and cash equivalents of \$4.3 million. We have undertaken actions to decrease losses incurred and implemented cost reduction programs in an effort to transform the Company into a profitable operation. In addition, we are planning to issue additional equity to our stockholders.

On July 6, 2021, we entered into a Sales Agreement (the "Sales Agreement") with Roth Capital Partners, LLC (the "Agent"). In accordance with the terms of the Sales Agreement, we may offer and sell from time to time through the Agent our common stock having an aggregate offering price of up to \$20,000,000 (the "Placement Shares"). Sales of the Placement Shares will be made on Nasdaq at market prices by any method permitted by law deemed to be an "at the market offering" as defined in Rule 415 of the Securities Act of 1933, as amended, or the Securities Act. We will pay a commission to the Agent of 3.0% of the gross proceeds of the sale of the Placement Shares sold under the Agreement and reimburse the Agent for certain expenses. In the fourth quarter of fiscal 2021, we sold 344,391 shares of common stock for gross proceeds of \$4.2 million with \$125 thousand paid as placement agent fees under our ATM program. During the year ended August 31, 2022, we sold 286,328 shares of common stocks for gross proceeds of \$995 thousand with \$31 thousand paid as placement agent fees under our ATM program.

We estimate that our cash requirements to service debt and contractual obligations in fiscal 2023 is approximately \$5.1 million, which we expect to fund through the issuance of additional equity under the ATM program. Based on our current financial projections and assuming the successful implementation of our liquidity plans, we believe that we will have sufficient sources of liquidity to fund our operations and capital expenditure plans for the next 12 months and beyond. However, there can be no assurances that our planned activities will be successful in raising additional capital, reducing losses and preserving cash. If we are not able to generate positive cash flows from operations, we may need to consider alternative financing sources and seek additional funds through public or private equity financings or from other sources, or refinance our indebtedness, to support our working capital requirements or for other purposes. There can be no assurance that additional debt or equity financing will be available to us or that, if available, such financing will be available on terms favorable to us.

We do not have any off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial conditions, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to our common stock.

Cash Flows

The following summary of our cash flows for the periods indicated has been derived from our consolidated financial statements, which are included elsewhere in this Annual Report on Form 10-K (in thousands):

	Years Ended August 31,	
	2022	2021
Net cash used in operating activities	\$ (1,508)	\$ (1,737)
Net cash (used in) provided by investing activities	\$ (113)	\$ 159
Net cash provided by financing activities	\$ 490	\$ 3,990

Cash Flows Used in Operating Activities

Net cash used in operating activities was \$1.5 million for the year ended August 31, 2022, consisting primarily of a net loss of \$2.7 million and a decrease in inventory of \$940 thousand and accounts payable of \$388 thousand, partially offset by depreciation and amortization of \$938 thousand and stock based compensation expense of \$459 thousand and provision for inventory write-down of \$807 thousand.

Net cash used in operating activities was \$1.7 million for the year ended August 31, 2021, consisting primarily of a net loss of \$2.9 million and a decrease in inventory of \$2 million and gain on disposal of long-live assets of \$286 thousand, partially offset by depreciation and amortization of \$897 thousand and stock based compensation expense of \$186, bad debt expense of \$540 thousand and provision for inventory write-downs of \$659 thousand and decreased in accrued expenses and other current liabilities of \$578 thousand.

Cash Flows (Used in) Provided by Investing Activities

Net cash used in investing activities was \$113 thousand for the year ended August 31, 2022, consisting primarily of the proceeds from the sales of property, plant and equipment of \$196 thousand as a result of the disposal of idle machinery, partially offset by a \$280 thousand in cash used in the purchase of machinery and equipment and a \$13 thousand for development of intangible assets.

Net cash provided by investing activities was \$159 thousand for the year ended August 31, 2021, consisting primarily of the proceeds from the sales of property, plant and equipment of \$291 thousand as a result of the disposal of idle machinery, partially offset by a \$118 thousand in cash used in the purchase of machinery and equipment and a \$14 thousand for development of intangible assets.

Cash Flows Provided by Financing Activities

Net cash provided by financing activities was \$490 thousand for the year ended August 31, 2022, consisting primarily of \$995 thousand from the issuance of common stock under the ATM program, partially offset by \$482 thousand in repayment of long-term debt.

Net cash provided by financing activities was \$4.0 million for the year ended August 31, 2021, consisting primarily of \$4.2 million from the issuance of common stock in our ATM program.

Capital Expenditures

We had capital expenditures of \$280 thousand and \$118 thousand for the years ended August 31, 2022 and 2021, respectively. Our capital expenditures consisted primarily of the purchases of machinery and equipment, construction in progress, prepayments for our manufacturing facilities and prepayments for equipment purchases. We expect to continue investing in capital expenditures in the future as we expand our business operations and invest in such expansion of our production capacity as we deem appropriate under market conditions and customer demand. However, in response to controlling capital costs and maintaining financial flexibility, our management continues to

monitor prices and, consistent with its existing contractual commitments, may decrease its activity level and capital expenditures as appropriate.

Accounting Pronouncements Not Yet Adopted

Please refer to ‘Summary of Significant Accounting Policies Recent Accounting Pronouncements’ for more details.

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

Not applicable.

Item 8. *Financial Statements and Supplementary Data*

Pages	41-42	REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM (PCAOB ID: 2851)
Page	43	CONSOLIDATED BALANCE SHEETS AS OF AUGUST 31, 2022 AND 2021
Page	44	CONSOLIDATED STATEMENTS OF OPERATIONS FOR THE YEARS ENDED AUGUST 31, 2022 AND 2021
Page	45	CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS FOR THE YEARS ENDED AUGUST 31, 2022 AND 2021
Page	46	CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY FOR THE YEARS ENDED AUGUST 31, 2022 AND 2021
Page	47	CONSOLIDATED STATEMENTS OF CASH FLOWS FOR THE YEARS ENDED AUGUST 31, 2022 AND 2021
Pages	48	NOTES TO CONSOLIDATED FINANCIAL STATEMENTS



REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the board of directors of SemiLEDs Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of SemiLEDs Corporation and its subsidiaries (the “Company”) as of August 31, 2022 and 2021, the related consolidated statements of operations, comprehensive loss, changes in equity, and cash flows for the years then ended, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of August 31, 2022 and 2021, and the results of its operations and its cash flows for the years then ended, in conformity with the U.S. generally accepted accounting principles.

Consideration of the Company’s Ability to Continue as a Going Concern

The accompanying consolidated financial statements have been prepared assuming the Company will continue as a going concern. As described in Note 2 to the financial statements, the Company incurred recurring losses from operations and has an accumulated deficit, which raises substantial doubt about its ability to continue as a going concern. Management’s plans with regard to these matters are described in Note 2. The accompanying consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statements 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 audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Critical Audit Matter Description

As described in Note 2 to the consolidated financial statements, the Company’s revenue is derived from the delivery of its products. The sale of products by the Company is considered complete when the products are delivered at that time the ownership and risk of loss have been transferred to the customer.

The Company considers the contracts with its customer contain one performance obligation, and the Company is entitled to the consideration when performance obligation is satisfied at a point in time. The amount of revenue to be recognized is determined by the contracts between the Company and its customer. The Company recognizes revenue when the product is delivered.

The principal considerations for our determination that performing procedures relating to revenue recognition, specifically the identification and evaluation of the timing and amount of revenue recognition, is a critical audit matter, involved judgment exercised by management in identifying and evaluating the performance obligation. Auditor judgement is involved in performing our audit procedures to evaluate whether the timing and amount of revenue recognition was appropriately stated.

How the Critical Audit Matter Will Be Addressed in the Audit

Our audit procedures over determining the timing and amount of revenue recognition involved, among others, evaluation of management's assessment in regard to the identification of performance obligation of revenue. We selected customer agreements and performed the following procedures:

- Evaluated the terms and conditions of each selected contract and the appropriateness of the accounting treatment within the context of the five-step model prescribed by ASC 606, Revenue from Contracts with Customers, and evaluated whether management's conclusions were appropriate.
- Tested the accuracy of management's recognition of revenue for the performance obligation.

/s/ KCCW Accountancy Corp.

We have served as the Company's auditor since 2019.
Diamond Bar, California
November 7, 2022

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SEMILEDs CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(In thousands of U.S. dollars and shares, except par value)

	August 31,	
	2022	2021
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	\$ 4,274	\$ 4,833
Restricted cash and cash equivalents	82	90
Accounts receivable (including related parties), net of allowance for doubtful accounts of \$181 and \$199 as of August 31, 2022 and August 31, 2021, respectively	880	865
Inventories	3,784	3,937
Prepaid expenses and other current assets	123	329
Total current assets	9,143	10,054
Property, plant and equipment, net	4,139	5,244
Operating lease right of use assets	1,578	1,635
Intangible assets, net	102	126
Investments in unconsolidated entities	922	1,011
Other assets	170	169
TOTAL ASSETS	\$ 16,054	\$ 18,239
LIABILITIES AND EQUITY		
CURRENT LIABILITIES:		
Current installments of long-term debt	\$ 5,063	\$ 5,109
Accounts payable	286	753
Accrued expenses and other current liabilities	2,702	2,783
Other payable to related parties	1,061	764
Operating lease liabilities, current portion	143	98
Total current liabilities	9,255	9,507
Long-term debt, excluding current installments	1,866	2,569
Operating lease liabilities, less current portion	1,435	1,537
Total liabilities	12,556	13,613
Commitments and contingencies (Note 6)		
EQUITY:		
SemiLEDs stockholders' equity		
Common stock, \$0.0000056 par value—7,500 shares authorized; 4,832 shares and 4,460 shares issued and outstanding as of August 31, 2022 and August 31, 2021, respectively	—	—
Additional paid-in capital	183,711	182,255
Accumulated other comprehensive income	3,697	3,543
Accumulated deficit	(183,955)	(181,211)
Total SemiLEDs stockholders' equity	3,453	4,587
Noncontrolling interests	45	39
Total equity	3,498	4,626
TOTAL LIABILITIES AND EQUITY	\$ 16,054	\$ 18,239

See notes to consolidated financial statements.

SEMILEDs CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands of U.S. dollars and shares, except per share data)

	Years Ended August 31,	
	2022	2021
Revenues, net	\$ 7,051	\$ 4,735
Cost of revenues	5,654	3,702
Gross profit	1,397	1,033
Operating expenses:		
Research and development	1,484	1,623
Selling, general and administrative	3,309	3,614
Gain on disposals of long-lived assets, net	(196)	(286)
Total operating expenses	4,597	4,951
Loss from operations	(3,200)	(3,918)
Other income (expenses):		
Interest expenses, net	(369)	(371)
Other income, net	1,485	1,090
Foreign currency transaction (loss) gain, net	(642)	342
Total other income, net	474	1,061
Loss before income taxes	(2,726)	(2,857)
Income tax expense	—	—
Net loss	(2,726)	(2,857)
Less: Net income (loss) attributable to noncontrolling interests	18	(6)
Net loss attributable to SemiLEDs stockholders	\$ (2,744)	\$ (2,851)
Net loss per share attributable to SemiLEDs stockholders:		
Basic and diluted	\$ (0.61)	\$ (0.68)
Shares used in computing net loss per share attributable to SemiLEDs stockholders:		
Basic and diluted	4,522	4,180

See notes to consolidated financial statements.

SEMILEDs CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(In thousands of U.S. dollars)

	Years Ended August 31,	
	2022	2021
Net loss	\$ (2,726)	\$ (2,857)
Other comprehensive income (loss), net of tax:		
Foreign currency translation adjustments, net of tax of \$0 for both periods	149	(102)
Comprehensive loss	(2,577)	(2,959)
Comprehensive income (loss) attributable to noncontrolling interests	13	(4)
Comprehensive loss attributable to SemiLEDs stockholders	\$ (2,590)	\$ (2,955)

See notes to consolidated financial statements.

SEMILEDs CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(In thousands of U.S. dollars and shares)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income	Accumulated Deficit	Total SemiLEDs Stockholders' Equity	Non- Controlling Interests	Total Equity
	Shares	Amount						
BALANCE—September 1, 2020	4,011	\$ —	\$ 177,235	\$ 3,647	\$(178,360)	\$ 2,522	\$ 46	\$ 2,568
Issuance of common stock under equity incentive plans	69	—	—	—	—	—	—	—
Stock-based compensation	—	—	186	—	—	186	—	186
Issuance of common stock for private placement	345	—	4,175	—	—	4,175	—	4,175
Issuance of convertible notes	—	—	18	—	—	18	—	18
Conversion of notes into common stocks	35	—	650	—	—	650	—	650
Change ownership in SBDI*	—	—	(9)	—	—	(9)	(3)	(12)
Comprehensive income (loss)								
Other comprehensive income (loss)	—	—	—	(104)	—	(104)	2	(102)
Net loss	—	—	—	—	(2,851)	(2,851)	(6)	(2,857)
BALANCE—August 31, 2021	4,460	—	182,255	3,543	(181,211)	4,587	39	4,626
Issuance of common stock under equity incentive plans	86	—	—	—	—	—	—	—
Stock-based compensation	—	—	459	—	—	459	—	459
Issuance of common stock for public placement	286	—	995	—	—	995	—	995
Issuance of convertible notes	—	—	18	—	—	18	—	18
Change ownership in SBDI*	—	—	(16)	—	—	(16)	(7)	(23)
Comprehensive income (loss)								
Other comprehensive income (loss)	—	—	—	154	—	154	(5)	149
Net loss	—	—	—	—	(2,744)	(2,744)	18	(2,726)
BALANCE—August 31, 2022	<u>4,832</u>	<u>\$ —</u>	<u>\$ 183,711</u>	<u>\$ 3,697</u>	<u>\$(183,955)</u>	<u>\$ 3,453</u>	<u>\$ 45</u>	<u>\$ 3,498</u>

See notes to consolidated financial statements.

* SBDI (Taiwan Bandaoti Zhaoming Co., Ltd.) is one of the Company's subsidiaries.

SEMILEDS CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands of U.S. dollars)

	<u>Years Ended August 31,</u>	
	<u>2022</u>	<u>2021</u>
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	\$ (2,726)	\$ (2,857)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	938	897
Stock-based compensation expense	459	186
Bad debt expense	126	540
Provisions for inventory write-downs	807	659
Loss on disposal of patents	9	—
Gain on disposals of long-lived assets, net	(196)	(286)
Other non-cash expenses	—	150
Changes in :		
Accounts receivable	171	158
Inventories	(940)	(1,974)
Prepaid expenses and other assets	(53)	37
Accounts payable	(388)	175
Accrued expenses and other current liabilities	285	578
Net cash used in operating activities	<u>(1,508)</u>	<u>(1,737)</u>
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of property, plant and equipment	(280)	(118)
Proceeds from sales of property, plant and equipment	196	291
Payments for development of intangible assets	(13)	(14)
Placement of refundable deposits	(16)	—
Net cash (used in) provided by investing activities	<u>(113)</u>	<u>159</u>
CASH FLOWS FROM FINANCING ACTIVITIES:		
Repayments of long-term debt	(482)	(173)
Issuance of common stock	995	4,175
Acquisition of noncontrolling interests	(23)	(12)
Net cash provided by financing activities	490	3,990
Changes in cash balance included in deconsolidated subsidiaries		
Effect of exchange rate changes on cash and cash equivalents	555	(396)
NET (DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS	(576)	2,016
CASH, AND CASH EQUIVALENTS, AND RESTRICTED CASH—Beginning of year	5,028	3,012
CASH, AND CASH EQUIVALENTS, AND RESTRICTED CASH—End of year	<u>\$ 4,452</u>	<u>\$ 5,028</u>
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:		
Cash paid for interest	<u>\$ 371</u>	<u>\$ 374</u>
Cash paid for income taxes	<u>\$ —</u>	<u>\$ —</u>
NONCASH INVESTING AND FINANCING ACTIVITIES:		
Accrual related to property, plant and equipment	<u>\$ —</u>	<u>\$ 17</u>

See notes to consolidated financial statements.

SEMILEDs CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. BUSINESS

SemiLEDs Corporation (“SemiLEDs” or the “parent company”) was incorporated in Delaware on January 4, 2005 and is a holding company for various wholly owned subsidiaries. SemiLEDs and its subsidiaries (collectively, the “Company”) develop, manufacture and sell high performance light emitting diodes (“LEDs”). The Company’s core products are LED components, LED modules and systems, as well as LED chips and lighting products. LED components, modules and systems have become the most important part of its business. A portion of the Company’s business consists of the sale of contract manufactured LED products. The Company’s customers are concentrated in a few select markets, including the United States, Japan, Germany, Taiwan and Netherlands.

As of August 31, 2022, SemiLEDs had two wholly owned subsidiaries. SemiLEDs Optoelectronics Co., Ltd., or Taiwan SemiLEDs, is the Company’s wholly owned operating subsidiary, where a substantial portion of the assets is held and located, and where a portion of research, development, manufacturing and sales activities take place. Taiwan SemiLEDs owns a 97.37% equity interest in Taiwan Bandaoti Zhaoming Co., Ltd., formerly known as Silicon Base Development, Inc., which is engaged in the research, development, manufacturing and a substantial portion of marketing and sale of LED components, and where most of the Company’s employees are based.

SemiLEDs’ common stock trades on the NASDAQ Capital Market under the symbol “LEDS”.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation — The Company’s consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (“U.S. GAAP”).

Reclassification — Certain prior period amounts have been reclassified to conform to the current period presentation and had no effect on previously reported consolidated net loss or accumulated deficit.

Going Concern — The accompanying consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. The realization of assets and the satisfaction of liabilities in the normal course of business are dependent on, among other things, the Company’s ability to operate profitably, to generate cash flows from operations, and to pursue financing arrangements to support its working capital requirements.

The Company has suffered losses from operations of \$3.2 million and \$3.9 million, and used net cash in operating activities of \$1.5 million and \$1.7 million for the years ended August 31, 2022 and 2021, respectively. These facts and conditions have raised substantial doubt about the Company’s ability to continue as a going concern, even though gross profit on product sales was \$1.4 million for the year ended August 31, 2022 compared to \$1.0 million for the year ended August 31, 2021. On August 31, 2022, the Company’s cash and cash equivalents decreased to \$4.3 million mainly due to operating losses. Management believes that it has developed a liquidity plan, as summarized below, that, if executed successfully, should provide sufficient liquidity to meet the Company’s obligations as they become due for a reasonable period of time, and allow the development of its core business. The plan includes:

- Gaining positive cash-inflow from operating activities through continuous cost reductions and the sales of new higher margin products. The growth of the Company’s module products and the continued commercial sales of its UV LED products are expected to improve the Company’s future gross margin, operating results and cash flows. The Company is targeting niche markets and focused on product enhancement and developing its LED product into many other applications or devices;
- Continuing to monitor prices, work with current and potential vendors to decrease costs and, consistent with its existing contractual commitments, may possibly decrease its activity level and capital expenditures further. This plan reflects its strategy of controlling capital costs and maintaining financial flexibility.
- Raising additional cash through potential equity offerings, including sales through an at-the-market, or ATM, program, sales of assets and/or issuance of debt as considered necessary and looking at other potential business opportunities.

While the Company's management believes that the measures described in the above liquidity plan will be adequate to satisfy its liquidity requirements for the twelve months after the date that the financial statements are issued, there is no assurance that the liquidity plan will be successfully implemented. Failure to successfully implement the liquidity plan may have a material adverse effect on its business, results of operations and financial position, and may adversely affect its ability to continue as a going concern. These consolidated financial statements and financial statement schedule do not include any adjustments related to the recoverability and classification of recorded assets or the amounts and classification of liabilities or any other adjustments that might be necessary should the Company be unable to continue as a going concern.

Revenue Recognition — Effective September 1 2018, the Company adopted ASC 606 using the modified retrospective transition method. The Company applied the following five steps to achieve the core principles of ASC 606: 1) identified the contract with a customer; 2) identified the performance obligations (promises) in the contract; 3) determined the transaction price; 4) allocated the transaction price to the performance obligations in the contract; and 5) recognized revenue when (or as) the Company satisfies a performance obligation. The Company recognizes the amount of revenue when the Company satisfies a performance obligation to which it expects to be entitled for the transfer of promised goods or services to customers. The Company obtains written purchase authorizations from its customers as evidence of an arrangement and these authorizations generally provide for a specified amount of product at a fixed price. Generally, the Company considers delivery to have occurred at the time of shipment as this is generally when title and risk of loss for the products will pass to the customer. The Company provides its customers with limited rights of return for non-conforming shipments and product warranty claims. Based on historical return percentages, which have not been material to date, and other relevant factors, the Company estimates its potential future exposure on recorded product sales, which reduces product revenues in the consolidated statements of operations and reduces accounts receivable in the consolidated balance sheets. The Company also provides standard product warranties on its products, which generally range from three months to two years. Management estimates the Company's warranty obligations as a percentage of revenues, based on historical knowledge of warranty costs and other relevant factors. To date, the related estimated warranty provisions have been insignificant.

Principles of Consolidation — The consolidated financial statements include the accounts of SemiLEDs and its consolidated subsidiaries. All intercompany transactions and balances have been eliminated during consolidation.

On September 1, 2018, the Company adopted ASU 2016-01, "Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities" ("ASU 2016-01"). This standard allows equity investments (except those accounted for under the equity method of accounting or those that result in consolidation of the investees) that do not have readily determinable fair values to be re-measured at fair value either upon the occurrence of an observable price change or upon identification of impairment. The standard also simplifies the impairment assessment of equity investments without readily determinable fair values by requiring a qualitative assessment to identify impairment at each reporting period. When a qualitative assessment indicates that impairment exists, the Company is required to measure the investments at fair value.

Investments in which the Company has the ability to exercise significant influence over the investee but not a controlling financial interest, are accounted for using the equity method of accounting and are not consolidated. These investments are in joint ventures that are not subject to consolidation under the variable interest model, and for which the Company: (i) does not have a majority voting interest that would allow it to control the investee, or (ii) has a majority voting interest but for which other shareholders have significant participating rights, but for which the Company has the ability to exercise significant influence over operating and financial policies. Under the equity method, investments are stated at cost after adding or removing the Company's portion of equity in undistributed earnings or losses, respectively. The Company's investment in these equity-method entities is reported in the consolidated balance sheets in investments in unconsolidated entities, and the Company's share of the income or loss of these equity-method entities, after the elimination of unrealized intercompany profits, is reported in the consolidated statements of operations in equity in losses from unconsolidated entities. When net losses from an equity-method investee exceed its carrying amount, the carrying amount of the investment is reduced to zero. The Company then suspends using the equity method to provide for additional losses unless the Company has guaranteed obligations or is otherwise committed to provide further financial support to the equity-method investee. The Company resumes accounting for the investment under the equity method if the investee subsequently returns to profitability and the Company's share of the investee's income exceeds its share of the cumulative losses that have not been previously recognized during the period the equity method is suspended.

Investments in entities that are not consolidated or accounted for under the equity method are recorded as investments without readily determinable fair values. Investments without readily determinable fair values are reported on the consolidated balance sheets in investments in unconsolidated entities, at cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for an identical or similar investment of the same issuer. Dividend income, if any, received is reported in the consolidated statements of operations in equity in losses from unconsolidated entities.

If the fair value of an equity investment declines below its respective carrying amount and the decline is determined to be other-than-temporary, the investment will be written down to its fair value.

Use of Estimates — The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Significant items subject to such estimates and assumptions include the preparation of the Company’s consolidated financial statements on the basis that the Company will continue as a going concern, the collectability of accounts receivable, inventory net realizable values, realization of deferred tax assets, valuation of stock-based compensation expense, the useful lives of property, plant and equipment and intangible assets, the recoverability of the carrying amount of property, plant and equipment, intangible assets and investments in unconsolidated entities, the fair value of acquired tangible and intangible assets, income tax uncertainties, provision for potential litigation costs and other contingencies. Management bases its estimates on historical experience and also on assumptions that it believes are reasonable. Management assesses these estimates on a regular basis; however, actual results could differ materially from those estimates.

Certain Significant Risks and Uncertainties — The Company is subject to certain risks and uncertainties that could have a material and adverse effect on the Company’s future financial position or results of operations, which risks and uncertainties include, among others: it has incurred significant losses over the past few years, any inability of the Company to compete in a rapidly evolving market and to respond quickly and effectively to changing market requirements, any inability of the Company to grow its revenue and/or maintain or increase its margins, it may experience fluctuations in its revenues and operating results, any inability of the Company to protect its intellectual property rights, claims by others that the Company infringes their proprietary technology, and any inability of the Company to raise additional funds in the future.

Concentration of Supply Risk — Some of the components and technologies used in the Company’s products are purchased and licensed from a limited number of sources and some of the Company’s products are produced by a limited number of contract manufacturers. The loss of any of these suppliers and contract manufacturers may cause the Company to incur transition costs to another supplier or contract manufacturer, result in delays in the manufacturing and delivery of the Company’s products, or cause it to carry excess or obsolete inventory. The Company relies on a limited number of such suppliers and contract manufacturers for the fulfillment of its customers’ orders. Any failure of such suppliers and contract manufacturers to perform could have an adverse effect upon the Company’s reputation and its ability to distribute its products or satisfy customers’ orders, which could adversely affect the Company’s business, financial position, results of operations and cashflows.

Concentration of Credit Risk — Financial instruments that subject the Company to concentrations of credit risk consist primarily of cash, cash equivalents and accounts receivable.

The Company keeps its cash and cash equivalents in demand deposits with prominent banks of high credit quality and invests only in money market funds. Deposits held with banks may exceed the amount of insurance provided on such deposits. As of August 31, 2022 and 2021, cash and cash equivalents of the Company consisted of the following (in thousands):

Cash and Cash Equivalents by Location	August 31,	
	2022	2021
United States;		
Denominated in U.S. dollars	\$ 2,215	\$ 1,162
Taiwan;		
Denominated in U.S. dollars	1,447	3,405
Denominated in New Taiwan dollars	127	47
Denominated in other currencies	485	219
China (including Hong Kong);		
Denominated in Renminbi	—	—
Denominated in H.K. dollars	—	—
Total cash and cash equivalents	<u>\$ 4,274</u>	<u>\$ 4,833</u>

The Company’s revenues are substantially derived from the sales of LED products. A significant portion of the Company’s revenues are derived from a limited number of customers and sales are concentrated in a few select markets. Management performs ongoing credit evaluations of its customers and generally does not require collateral on accounts receivable. Management evaluates the need to establish an allowance for doubtful accounts for estimated potential credit losses at each reporting period. The allowance for doubtful accounts is based on the management’s assessment of the collectability of its customer accounts. Management regularly reviews the allowance by considering certain factors, such as historical experience, industry data, credit quality, age of accounts receivable balances and current economic conditions that may affect a customer’s ability to pay.

Customers that accounted for 10% or more of the Company's total net accounts receivable as of August 31, 2022 and 2021 consist of the following:

Customers	August 31,	
	2022	2021
Customer A	38%	53%
Customer B	11%	9%
Customer C	0%	20%
Customer D	19%	0%
Customer E	15%	0%
Customer F	13%	0%

The customers accounted for 10% or more of the Company's total net revenues for the years ended August 31, 2022 and 2021, as follows (in thousands, except percentages):

Customers	Years Ended August 31,			
	2022		2021	
	Amount	% of Revenues	Amount	% of Revenues
Customer A	\$ 1,997	28%	\$ 721	15%
Customer B	1,236	18%	1,260	27%
Customer C	956	14%	502	11%

Cash and Cash Equivalents — The Company considers all highly liquid investment instruments purchased with initial maturities of three months or less to be cash equivalents.

As of August 31, 2022 and 2021, cash and cash equivalents of the Company consist of the following (in thousands):

Cash and Cash Equivalents	August 31,	
	2022	2021
Cash;		
Cash and demand deposits	\$ 4,274	\$ 4,833
Cash equivalents;		
Money market funds	—	—
Total cash and cash equivalents	<u>\$ 4,274</u>	<u>\$ 4,833</u>

Restricted Cash Equivalents — Restricted cash primarily consists of cash held in reserved bank accounts in Taiwan. As of August 31, 2022 and 2021, the Company's restricted cash equivalents at current portion amounted \$82 thousand and \$90 thousand, respectively. As of August 31, 2022 and 2021, the Company's restricted cash at noncurrent portion, which was recorded as other assets, amounted to \$96 thousand and \$105 thousand, respectively.

Foreign Currency — The Company's subsidiaries use the local currency as their functional currency. The assets and liabilities of the subsidiaries are, therefore, translated into the U.S. dollars at exchange rates in effect at each balance sheet date, with the resulting translation adjustments recorded to a separate component of accumulated other comprehensive income (loss) within equity. Income and expense accounts are translated at average exchange rates during the period. Any gains and losses from transactions denominated in foreign currencies are recognized in the consolidated statements of operations as a separate component of other income (expense).

Accounts Receivable — Accounts receivable (including related parties with zero net book value as of August 31, 2022 and 2021, respectively) are recorded at invoiced amounts, net of allowances for doubtful accounts, and do not bear interest. The allowance for doubtful accounts is based on management's assessment of the collectability of customer accounts. Management regularly reviews the allowance by considering certain factors such as historical experience, industry data, credit quality, age of accounts receivable balances and current economic conditions that may affect a customer's ability to pay. Bad debt expenses were recognized \$126 thousand and \$540 thousand during the years ended August 31, 2022 and 2021, respectively.

Inventories — Inventories consist of raw materials, work in process and finished goods and are stated at the lower of cost or net realizable value. Cost is determined using a weighted average. For work in process and manufactured inventories, cost consists of raw materials, direct labor and an allocated portion of the Company’s production overhead. The Company writes down excess and obsolete inventory to its estimated net realizable value based upon assumptions about future demand and market conditions. For finished goods and work in process, if the estimated net realizable value for an inventory item, which is the estimated selling price in the ordinary course of business, less reasonably predicable costs to completion and disposal, is lower than its cost, the specific inventory item is written down to its estimated net realizable value. Net realizable value for raw materials is based on replacement cost. Provisions for inventory write-downs are included in cost of revenues in the consolidated statements of operations. Once written down, inventories are carried at this lower cost basis until sold or scrapped.

Property, Plant and Equipment — Property, plant and equipment are stated at cost less accumulated depreciation, amortization and impairment. Depreciation on property, plant and equipment is calculated using the straight-line method over the estimated useful lives, less estimated salvage values of the assets. Leasehold improvements are amortized using the straight-line method over the shorter of the lease term or estimated useful life of the asset.

The estimated useful lives of property, plant and equipment are as follows:

Buildings and improvements	5 to 20	years
Machinery and equipment	1 to 10	years
Leasehold improvements	2 to 10	years
Other equipment	2 to 6	years

Major Maintenance Activities — The Company incurs maintenance costs on its major equipment. Repair and maintenance costs are expensed as incurred.

Intangible Assets — Intangible assets consist of patents, trademarks and acquired technology. Intangible assets are initially recognized at their respective acquisition costs. All of the Company’s intangible assets have been determined to have finite useful lives and are, therefore, amortized using the straight-line method over their estimated useful lives:

Patents and trademarks	5 to 25	years
Acquired technology	5	years

Impairment of Long-Lived Assets — Management evaluates the Company’s long-lived assets, excluding goodwill, that consist of property, plant and equipment and intangible assets, for indicators of possible impairment when events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. Impairment exists if the carrying amounts of such assets exceed the estimates of future net undiscounted cash flows expected to be generated by such assets. Should impairment exist, the impairment loss would be measured based on the excess carrying amount of the asset over the estimated fair value of the asset. Fair value is determined through various valuation techniques, including discounted cash flow models, quoted market values and third-party independent appraisers, as considered necessary.

No impairment charge was recognized in the years ended August 31, 2022 and 2021.

Recovery of Investments in Unconsolidated Entities — Management evaluates the recoverability of the carrying amount of the Company’s equity investments accounted for using the equity method and cost method when there is an indication of potential impairment. If the estimated realizable value of an equity investment falls below its carrying amount and management determines that this shortfall is other-than-temporary, the carrying amount of such investment is written down to its estimated realizable value. In determining whether a decline in value is other-than-temporary, management considers the length of time and the extent to which such value has been less than the carrying amount, the financial condition and prospects of the investee, and the Company’s ability and intent to retain the equity investment for a period of time sufficient to allow for any anticipated recovery in value.

No impairment charge was recognized in the year ended August 31, 2022 and 2021.

Income Taxes — The Company accounts for income taxes under the asset and liability method. As part of the process of preparing the consolidated financial statements, the Company estimates its income taxes in each of the jurisdictions in which it operates. The Company estimates actual current tax expense together with assessing temporary differences resulting from differing accounting treatment for items such as accruals and allowances that are not currently deductible for tax purposes. These differences result in deferred tax assets and liabilities which are included in the Company’s consolidated balance sheets. In general, deferred tax assets represent future tax benefits to be received when certain expenses previously recognized in the Company’s consolidated statements of operations become deductible expenses under applicable income tax laws or when operating loss or tax credit carryforwards are utilized. Accordingly, realization of the deferred tax assets

is dependent on the Company's ability to earn future taxable income against which these deductions, losses and credits can be utilized. Deferred tax assets and liabilities are measured using enacted tax rates expected to be applicable to the taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect of a change in tax rates on the Company's deferred tax assets and liabilities is recognized in the consolidated statements of operations in the period the change in the tax law was enacted.

Management assesses the likelihood that the Company's deferred tax assets will be recovered from future taxable income and, to the extent management believes that recovery is not more likely than not, a valuation allowance is established. The Company recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50 percent likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. The Company records interest and penalties, if any, related to unrecognized tax benefits in income tax expense.

Stock-based Compensation — Compensation costs related to employee stock options and restricted stock units are based on the fair value of the options and stock units on the date of grant, net of estimated forfeitures. The Company determines the grant date fair value of the options using the Black-Scholes option-pricing model. The related stock-based compensation expense is generally recognized on a straight-line basis over the period in which an employee is required to provide service in exchange for the options and stock units, or the vesting period of the respective options and stock units.

Research and Development Costs — Research and development costs are expensed as incurred. Research and development costs are presented as a separate line item in the consolidated statements of operations.

Advertising Costs — Advertising costs are expensed as incurred. Advertising costs totaled \$4 thousand and \$1 thousand for the years ended August 31, 2022 and 2021, respectively, and are included in selling, general and administrative expenses in the consolidated statements of operations.

Segment Reporting — The Company uses the management approach in determining reportable operating segments. The management approach considers the internal organization and reporting used by the Company's chief operating decision maker for making operating decisions, allocating resources and assessing performance as the source for determining the Company's reportable segments. During the years ended August 31, 2022 and 2021, the Chief Executive Officer has been identified as the chief operating decision maker. The Company's chief operating decision maker regularly reviews consolidated assets and consolidated operating results prepared under U.S. GAAP for the enterprise as a whole when making decisions about allocating resources and assessing performance of the Company. Consequently, management has determined that the Company does not have any operating segments as defined in the Financial Accounting Standards Board (the "FASB") Accounting Standards Codification ("ASC") 280-10-50-1, "Segment Reporting."

Shipping and Handling Costs — The Company includes costs from shipping and handling within cost of revenues in the period in which they are incurred.

Net Income (Loss) Per Share of SemiLEDs Common Stock — Basic net income (loss) per share is computed by dividing net income (loss) attributable to SemiLEDs stockholders by the weighted average number of shares of common stock outstanding during the period. Net income (loss) attributable to SemiLEDs stockholders is determined by allocating undistributed earnings as if all of the earnings for the period had been distributed. Diluted net income (loss) per share is computed by using the weighted-average shares of common stock outstanding, including potential dilutive shares of common stock assuming the dilutive effect of outstanding stock options and unvested restricted stock units using the treasury stock method.

Noncontrolling Interests — Noncontrolling interests are classified in the consolidated statements of operations as part of consolidated net income (loss) and the accumulated amount of noncontrolling interests in the consolidated balance sheets as part of equity. Changes in ownership interest in a consolidated subsidiary that do not result in a loss of control are accounted for as an equity transaction. If a change in ownership of a consolidated subsidiary results in loss of control and deconsolidation, any retained ownership interests are remeasured with the gain or loss reported in net earnings.

On September 1, 2018, Taiwan Bandaoti Zhaoming Co., Ltd. ("SBDI"), the Company's wholly owned operating subsidiary, issued 414,000 common shares and amended its certificate of incorporation to increase its issued common stock from 12,087,715 shares to 12,501,715 shares. As of the issuance date, the increased capital of \$176 thousand (NT\$5.4 million) has been received in full amount by Taiwan Bandaoti Zhaoming Co., Ltd. The Company did not subscribe for any newly issued common shares at the issuance date; as a result, noncontrolling interest in SBDI was increased from zero to 3.31%. From January 2019 to September 2020, the Company purchased additional 33,000 common shares of SBDI from non-controlling shareholders. Therefore, noncontrolling interest in SBDI declined to 3.05% as of August 31, 2021. From April 2022 to May 2022, the Company purchased additional 52,000 common shares of SBDI from non-controlling shareholders. Therefore, noncontrolling interest in SBDI declined to 2.63% as of August 31, 2022.

Commitments and Contingencies — Liabilities for loss contingencies arising from claims, assessments, litigation, fines, and penalties and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. Legal costs incurred in connection with loss contingencies are expensed as incurred.

Fair Value Measurements — The Company utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible. The Company determines fair value based on assumptions that market participants would use in pricing an asset or liability in the principal or most advantageous market. When considering market participant assumptions in fair value measurements, the following fair value hierarchy distinguishes between observable and unobservable inputs, which are categorized in one of the following levels:

- Level1 Inputs: Unadjusted quoted prices in active markets for identical assets or liabilities accessible to the reporting entity at the measurement date.
- Level2 Inputs: Other than quoted prices included in Level1 inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the asset or liability.
- Level3 Inputs: Unobservable inputs for the asset or liability used to measure fair value to the extent that observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at measurement date.

See Note12 for further details.

Recent Accounting Pronouncements

In August 2020, the FASB issued ASU 2020-06, Debt — Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity’s Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity (“ASU 2020-06”). ASU 2020-06 simplifies the accounting for convertible debt by eliminating the beneficial conversion and cash conversion accounting models. Upon adoption of ASU 2020-06, convertible debt, unless issued with a substantial premium or an embedded conversion feature that is not clearly and closely related to the host contract, will no longer be allocated between debt and equity components. This modification will reduce the issue discount and result in less non-cash interest expense in financial statements. ASU 2020-06 also updates the earnings per share calculation and requires entities to assume share settlement when the convertible debt can be settled in cash or shares. For contracts in an entity’s own equity, the type of contracts primarily affected by ASU 2020-06 are freestanding and embedded features that are accounted for as derivatives under the current guidance due to a failure to meet the settlement assessment by removing the requirements to (i) consider whether the contract would be settled in registered shares, (ii) consider whether collateral is required to be posted, and (iii) assess shareholder rights. ASU 2020-06 is effective for fiscal years beginning after December 15, 2023. Early adoption is permitted, but no earlier than fiscal years beginning after December 15, 2020, and only if adopted as of the beginning of such fiscal year. The Company is currently evaluating the impact that the standard will have on its consolidated financial statements.

In May 2021, the FASB issued ASU 2021-04, Earnings Per Share (Topic 260), Debt — Modifications and Extinguishments (Subtopic 470-50), Compensation — Stock Compensation (Topic 718), and Derivatives and Hedging — Contracts in Entity’s Own Equity (Subtopic 815-40): Issuer’s Accounting for Certain Modifications or Exchanges of Freestanding Equity-Classified Written Call Options (“ASU 2021-04”). ASU 2021-04 provides guidance as to how an issuer should account for a modification of the terms or conditions or an exchange of a freestanding equity-classified written call option (i.e., a warrant) that remains classified after modification or exchange as an exchange of the original instrument for a new instrument. An issuer should measure the effect of a modification or exchange as the difference between the fair value of the modified or exchanged warrant and the fair value of that warrant immediately before modification or exchange and then apply a recognition model that comprises four categories of transactions and the corresponding accounting treatment for each category (equity issuance, debt origination, debt modification, and modifications unrelated to equity issuance and debt origination or modification). ASU 2021-04 is effective for all entities for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. An entity should apply the guidance provided in ASU 2021-04 prospectively to modifications or exchanges occurring on or after the effective date. Early adoption is permitted for all entities, including adoption in an interim period. If an entity elects to early adopt ASU 2021-04 in an interim period, the guidance should be applied as of the beginning of the fiscal year that includes that interim period. The Company concluded that the standard will have no material impact on its consolidated financial statements.

3. BALANCE SHEET COMPONENTS

Inventories

Inventories as of August 31, 2022 and 2021 consist of the following (in thousands):

	August 31,	
	2022	2021
Raw materials	\$ 493	\$ 564
Work in process	953	1,217
Finished goods	2,338	2,156
Total	<u>\$ 3,784</u>	<u>\$ 3,937</u>

Inventory write-downs to estimated net realizable values for the years ended August 31, 2022 and 2021 were \$807 thousand and \$659 thousand, respectively.

Property, Plant and Equipment

Property, plant and equipment as of August 31, 2022 and 2021 consist of the following (in thousands):

	August 31,	
	2022	2021
Buildings and improvements	\$ 13,698	\$ 14,997
Machinery and equipment	27,649	34,421
Leasehold improvements	161	176
Other equipment	2,283	2,547
Construction in progress	81	—
Total property, plant and equipment	43,872	52,141
Less: Accumulated depreciation and amortization	(39,733)	(46,897)
Property, plant and equipment, net	<u>\$ 4,139</u>	<u>\$ 5,244</u>

Depreciation expense was \$915 thousand and \$879 thousand for the years ended August 31, 2022 and 2021, respectively.

Property, plant and equipment pledged as collateral for the Company's notes payable were \$2.8 million and \$3.5 million as of August 31, 2022 and 2021, respectively.

Intangible Assets

Intangible assets as of August 31, 2022 and 2021 consist of the following (in thousands):

	August 31, 2022			
	Weighted Average Amortization Period (Years)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Patents and trademarks	15	\$ 580	\$ 478	\$ 102
Acquired technology	5	335	335	—
Total		<u>\$ 915</u>	<u>\$ 813</u>	<u>\$ 102</u>

	August 31, 2021			
	Weighted Average Amortization Period (Years)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Patents and trademarks	15	\$ 627	\$ 501	\$ 126
Acquired technology	5	367	367	—
Total		<u>\$ 994</u>	<u>\$ 868</u>	<u>\$ 126</u>

Amortization expense was \$23 thousand and \$18 thousand for the years ended August 31, 2022 and 2021, respectively.

No impairment charge was recognized in the year ended August 31, 2022 and 2021.

The estimated future amortization expense for the Company's intangible assets as of August 31, 2022 is as follows (in thousands):

Years Ending August 31,	Total
2023	\$ 10
2024	9
2025	9
2026	9
2027	9
Thereafter	56
Total	\$ 102

Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities as of August 31, 2022 and 2021 consist of the following (in thousands):

	August 31,	
	2022	2021
Accrued compensation and benefits	\$ 1,678	\$ 1,694
Customer deposits	346	293
Accrued business expenses	176	200
Accrued professional service fees	100	283
Other (individually less than 5% of total accrued expenses and other current liabilities)	402	313
Total	\$ 2,702	\$ 2,783

4. INVESTMENTS IN UNCONSOLIDATED ENTITIES

The Company's ownership interest and carrying amounts of investments in unconsolidated entities as of August 31, 2022 and 2021 consist of the following (in thousands, except percentages):

	August 31, 2022		August 31, 2021	
	Percentage Ownership	Amount	Percentage Ownership	Amount
Equity investment without readily determinable fair value	Various	\$ 922	Various	\$ 1,011
Total investments in unconsolidated entities		\$ 922		\$ 1,011

There were no dividends received from unconsolidated entities through August 31, 2022.

Equity Investment without Readily Determinable Fair Value

Equity investments (except those accounted for under the equity method of accounting or those that result in consolidation of the Company) which do not have readily determinable fair values are recorded as equity investment without readily determinable fair value. All equity investments without readily determinable fair value are assessed for impairment when events or changes in circumstances indicate that the carrying amounts may not be recoverable, and measured at cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for an identical or similar investment of the same issuer. The recoverable value of the investment was determined based on the Company's best estimate of the amount that could be realized from the investment, which considered the latest financial information. During the year ended August 31, 2022 and 2021, no impairment losses were recognized for the equity investments without readily determinable fair value.

5. INDEBTEDNESS

Long-term Debt

Long-term debt as of August 31, 2022 and 2021 consist of the following loans (in thousands):

	August 31,	
	2022	2021
First note payable- Mega Bank	\$ 1,453	\$ 1,917
Second note payable- Mega Bank	890	1,175
Loans from Chairman and Shareholders	3,200	3,200
Convertible notes issued to Chairman and Shareholders	1,386	1,386
Total long-term debt	6,929	7,678
Less: Current installments	(5,063)	(5,109)
Total long-term debt, excluding current installments	\$ 1,866	\$ 2,569

Our long-term debt, which consisted of New Taiwan dollar (“NTD”) denominated long-term notes, convertible unsecured promissory notes and loans from the Chairman and the largest shareholder of the Company, totaled \$6.9 million and \$7.7 million as of August 31, 2022 and 2021, respectively.

On July 5, 2019, the Company and Mega International Commercial Bank (“Mega Bank”) entered into two NTD denominated loan agreements in an aggregate amount of \$3.2 million (NT\$100 million). The first note of \$2.0 million (NT\$62 million) payable to Mega Bank has an annual floating interest rate equal to the NTD base lending rate plus 0.64% (or 1.815% currently), and was exclusively used to repay original notes with E Sun Bank. The second note of \$1.2 million (NT\$38 million) payable to Mega Bank has an annual floating interest rate equal to the NTD base lending rate plus 1.02% (or 2.195% currently) and is available for operating capital. Both note payables are secured by a first priority security interest on the Company’s headquarters building. Income from renting the collateral must be deposited into a reserved account opened with Mega Bank, and only the balance of deposits exceeding \$82 thousand (NT\$2.5 million) after deducting the principal and interest payable for the current month (including the accumulated outstanding amount) may be transferred outwards. The balance of the reserve account is \$82 thousand and \$90 thousand as of August 31, 2022 and 2021, respectively. Due to the impact of the COVID-19 pandemic, Mega bank agreed to give the Company a deferment period for twelve months starting from May 2020 until April 2021. During this period, the Company did not need to pay the monthly payments of the principal but only the interest. Starting from May 2021, the two notes payables to Mega Bank require monthly payments of principal in the amount of \$25 thousand plus interest and \$15 thousand plus interest, respectively, over the 74-month term of the notes with final payment to occur in July 2027.

On January 8, 2019, the Company entered into loan agreements with each of its Chairman and Chief Executive Officer and our largest shareholder, with aggregate amounts of \$3.2 million, and an annual interest rate of 8%. All proceeds of the loans were exclusively used to return the deposit to Formosa Epitaxy Incorporation in connection with the proposed sale of our headquarters building pursuant to the agreement dated December 15, 2015. The Company was initially required to repay the loans of \$1.5 million on January 14, 2021 and \$1.7 million on January 22, 2021, respectively. On January 16, 2021, the maturity date of these loans was extended with same terms and interest rate for one year to January 15, 2022, and on January 14, 2022, the maturity date of these loans was further extended with same terms and interest rate for one more year to January 15, 2023. As of August 31, 2022 and 2021, these loans totaled \$3.2 million, respectively. The loans are secured by a second priority security interest on the Company’s headquarters building.

On November 25, 2019 and on December 10, 2019, the Company issued convertible unsecured promissory notes to each of its Chairman and Chief Executive Officer and largest shareholder (the “Holders”), with a principal sum of \$2 million and an annual interest rate of 3.5%. Principal and accrued interest was due on demand by the Holders on and at any time after May 30, 2021 (the “Maturity Date”). The outstanding principal and unpaid accrued interest of the Notes may be converted into our Common Stock based on a conversion price of \$3 dollars per share, at the option of the Holders any time from the date of the Notes. On May 25, 2020, the Holders each converted \$300 thousand of notes into 100,000 shares of our common stock. On May 26, 2021, the Notes were extended with the same terms and interest rate for one year and were scheduled to mature on May 30, 2022, and on May 26, 2022, the Notes were further extended with the same terms and interest rate for one year and now mature on May 30, 2023. As of August 31, 2022 and 2021, the outstanding principal of these notes totaled \$1.4 million.

The scheduled principal payments for the Company's long-term debt as of August 31, 2022 consist of the following (in thousands):

Years Ending August 31,	Scheduled Principal Payments
2023	\$ 4,587
2024	476
2025	476
2026	476
2027	476
Thereafter	438
Total	\$ 6,929

6. COMMITMENTS AND CONTINGENCIES

Operating Lease Agreements — The Company has several operating leases with third parties, primarily for land, plant and office spaces in Taiwan, including cancellable and noncancelable leases that expire at various dates between December 2024 and December 2040. Leases with an initial term of 12 months or less are not recorded on the balance sheet; the Company recognizes lease expense for these leases on a straight-line basis over the lease term. For lease agreements entered into or reassessed after the adoption of Topic 842, the Company did not combine lease and non-lease components.

Most leases do not include options to renew. The exercise of lease renewal options has to be agreed by the lessors. The depreciable life of assets and leasehold improvements are limited by the term of leases, unless there is a transfer of title or purchase option reasonably certain of exercise. Lease expense is recognized on a straight-line basis over the term of the lease. Lease expense related to these noncancelable operating leases were \$166 thousand and \$164 thousand for the years ended August 31, 2022 and 2021, respectively.

Balance sheet information related to the Company's leases is presented below:

	August 31,	
	2022	2021
Assets		
Operating lease right of use assets	\$ 1,578	\$ 1,635
Liabilities		
Operating lease liabilities, current portion	\$ 143	\$ 98
Operating lease liabilities, less current portion	1,435	1,537
Total	\$ 1,578	\$ 1,635

The following provides details of the Company's lease expenses:

	August 31,	
	2022	2021
Operating lease expenses	\$ 166	\$ 164

Other information related to leases is presented below:

	August 31,	
	2022	2021
Cash Paid for amounts Included In Measurement of Liabilities:		
Operating cash flows from operating leases	\$ 166	\$ 164
Weighted Average Remaining Lease Term:		
Operating leases	16.27 years	18.74 years
Weighted Average Discount Rate		
Operating leases	1.76%	1.76%

As most of the Company's leases do not provide an implicit rate, the Company uses its average borrowing rate from non-related parties of 1.76% based on the information available at commencement date in determining the present value of lease payments.

The aggregate future noncancelable minimum rental payments for the Company's operating leases as of August 31, 2022 consist of the following (in thousands):

Years Ending August 31,	Operating Leases
2023	\$ 170
2024	170
2025	128
2026	95
2027	95
Thereafter	1,154
Total future minimum lease payments, undiscounted	1,812
Less: Imputed interest	234
Present value of future minimum lease payments	<u>\$ 1,578</u>

Purchase Obligations — The Company had purchase commitments for inventory, property, plant and equipment in the amount of \$121 thousand and \$101 thousand as of August 31, 2022 and 2021, respectively.

Litigation — The Company is directly or indirectly involved from time to time in various claims or legal proceedings arising in the ordinary course of business. The Company recognizes a liability when it is probable that a loss has been incurred and the amount is reasonably estimable. There is significant judgment required in assessing both the likelihood of an unfavorable outcome and whether the amount of loss, if any, can be reasonably estimated.

On June 21, 2017, Well Thrive Ltd. (“Well Thrive”) filed a complaint against the Company in the United States District Court for the District of Delaware. The complaint alleged that Well Thrive was entitled to return of \$500 thousand paid toward a note purchase pursuant to a purchase agreement (the “Purchase Agreement”) effective July 6, 2016 with Dr. Peter Chiou, which was assigned to Well Thrive on August 4, 2016. Pursuant to the terms of the Purchase Agreement, the Company retained the \$500 thousand payment as liquidated damages. Well Thrive alleged that the liquidated damages provision was unenforceable as an illegal penalty and did not reflect the amount of purported damages. On March 13, 2018, the Company filed a motion to enforce a settlement agreement between the parties to dismiss the lawsuit with prejudice. On March 27, 2018, Well Thrive filed an answering brief in opposition to the Company’s motion on the basis that Well Thrive never consented to dismiss the case. On January 2, 2019, the judge denied without prejudice the motion filed by the Company, because there remained some question as to whether Well Thrive’s former lawyers and Dr. Chiou had authority from Well Thrive to settle this case. The Court held a trial on March 2, 2020. After the trial, the judge ordered both sides to prepare post-trial briefs and proposed findings of fact for the Court to be submitted before end of April 2020. Both sides submitted post-trial briefs and proposed findings of fact on April 30, 2020. On December 21, 2020, the judge, following a hearing, issued her judgment, which ordered the Company to return the \$500 thousand to Well Thrive, and required both parties, on or before January 6, 2021, to submit information on the appropriate amount of interest to be added. On January 6, 2021, the Company filed a brief arguing that there should not be an award of prejudgment interest and Well Thrive was arguing for the amount of \$135,774 in pre-judgment interest. On April 8, 2021, the judge issued a ruling requiring the Company to pay pre-judgment interest in the amount of \$123,000 to Well Thrive. On May 7, 2021, the Court of Appeal issued an order requiring the parties to mediate on June 28, 2021. The Company and Well Thrive Ltd. entered into an Agreement Regarding Satisfaction of Judgment dated June 14, 2021, as amended on June 16, 2021 and June 21, 2021 (collectively, the “Settlement Agreement”), pursuant to which the Company issued 35,365 shares (the “Settlement Shares”) of its common stock to Well Thrive Ltd. The Settlement Shares were issued to satisfy the amount payable under the Settlement Agreement and, accordingly, no cash proceeds were received by the Company from the issuance of the Settlement Shares.

As of August 31, 2022, there was no pending litigation that could have a material impact on the Company’s financial position, results of operations or cash flows.

7. COMMON STOCK

On May 25, 2020, J.R. Simplot Company, the largest shareholder of the Company, and Trung Doan, the Chairman and Chief Executive Officer of the Company, each converted \$300,000 of convertible unsecured promissory notes into 100,000 shares of the Company’s common stock (see Note 5).

In June 2021, the Company and Well Thrive Ltd., entered into the Settlement Agreement pursuant to which the Company issued 35,365 Settlement Shares to Well Thrive Ltd., valued at \$650,000. The Settlement Shares were issued to satisfy the amount payable under the Settlement Agreement and, accordingly, no cash proceeds were received by the Company from the issuance of the Settlement Shares (see Note 6).

On July 6, 2021, the Company entered into a Sales Agreement (the “Sales Agreement”) with Roth Capital Partners, LLC (the “Agent”). In accordance with the terms of the Sales Agreement, the Company may offer and sell from time to time through the Agent the Company’s common stock having an aggregate offering price of up to \$20,000,000 (the “Placement Shares”). Sales of the Placement Shares, if any, will be made on Nasdaq at market prices by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415 of the Securities Act of 1933, as amended. The Company will pay a commission to the Agent of 3.0% of the gross proceeds of the sale of the Placement Shares sold under the Agreement and reimburse the Agent for certain expenses. In July 2021, 344,391 shares of the Company’s common stock were issued for gross proceeds of \$4,175,225, before placement agent fees and legal fees of \$126,576. During the year ended August 31, 2022, the Company sold 286,328 shares of the Company’s common stock for gross proceeds of \$995,099 before placement agent fees and bank fees of \$30,626.

8. STOCK-BASED COMPENSATION

The Company currently has one equity incentive plan (the “2010 Plan”), which provides for awards in the form of restricted shares, stock units, stock options or stock appreciation rights to the Company’s employees, officers, directors and consultants. In April 2014, SemiLEDs’ stockholders approved an amendment to the 2010 Plan that increases the number of shares authorized for issuance under the plan by an additional 250 thousand shares. On July 31, 2019, the stockholders approved an increase in the authorized share reserve under the 2010 plan by an additional 500 thousand shares, to extend expiration of the 2010 Plan to November 3, 2023, to remove the IRS Code section 162(m) provisions, and to modify the maximum grant limit to 35 thousand shares to one person in a one year period. On September 25, 2020,

the stockholders approved an amendment to the 2010 Equity Incentive Plan to increase the authorized shares reserve by an additional 400 thousand shares.

Prior to SemiLEDs' initial public offering, the Company had another stock-based compensation plan (the "2005 Plan"), but awards are made from the 2010 Plan after the initial public offering. Options outstanding under the 2005 Plan continue to be governed by its existing terms.

A total of 1,421 thousand and 1,421 thousand shares were reserved for issuance under the 2010 Plan of August 31, 2022 and 2021, respectively. As of August 31, 2022 and 2021, there were 820 thousand and 1,026 thousand shares of common stock available for future issuance under the 2010 Plan, respectively.

In November 2021, SemiLEDs granted 15 thousand restricted stock units to its directors that vest in quarterly installments on February 12, 2022, May 12, 2022, August 12, 2022 and November 12, 2022. Because the 2022 annual meeting was held on September 13, 2022, 100% of the stock units immediately vested on the date of the 2022 annual meeting. The grant-date fair value of the restricted stock units was \$7.10 per unit.

In November 2021, SemiLEDs granted 98.5 thousand restricted stock units to its employees, which vest in eight quarterly installments commencing November 2021 and will become fully vested upon a change in control. The grant-date fair value of the restricted stock units was \$7.10 per unit.

In November 2020, SemiLEDs granted 15 thousand restricted stock units to its directors, which vested in quarterly installments on each of February 12, 2021, May 12, 2021, August 12, 2021 and November 12, 2021. Because the 2021 annual meeting was held on September 24, 2021, 100% of the stock units immediately vested on the date of the 2021 annual meeting. The grant-date fair value of the restricted stock units was \$3.00 per unit.

In November 2020, SemiLEDs granted 33 thousand restricted stock units to its employees, which vested 25% on each of February 12, 2021, May 12, 2021 and August 12, 2021 and will vest 25% on November 12, 2021 and will become fully vested upon a change in control. The grant-date fair value of the restricted stock units was \$3.00 per unit.

In January 2020, SemiLEDs granted 136 thousand restricted stock units to its employees, which vest 25% each year on January 10 of 2021, 2022, 2023 and 2024 and will become fully vested upon a change in control. The grant-date fair value of the restricted stock units was \$2.39 per unit.

Stock-based Compensation Expense

The total stock-based compensation expense consists of stock-based compensation expense for stock options and restricted stock units granted to employees, directors, nonemployees and also includes stock options to purchase SemiLEDs' common stock as part of an employment agreement related to the Company's acquisition of SBDI (later on renamed as TSLC Corporation). A summary of the stock-based compensation expense for the years ended August 31, 2022 and 2021 is as follows (in thousands):

	Years Ended August 31,	
	2022	2021
Cost of revenues	\$ 124	\$ 51
Research and development	126	43
Selling, general and administrative	209	92
	<u>\$ 459</u>	<u>\$ 186</u>

Stock-based compensation expense is recorded net of estimated forfeitures such that expense is recorded only for those stock-based awards that are expected to vest. A forfeiture rate is estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from initial estimates. A forfeiture rate of zero is estimated for stock-based awards with vesting term that is less than or equal to one year from the date of grant.

There was no recognized stock-based compensation tax benefit for the years ended August 31, 2022 and 2021, as the Company recorded a full valuation allowance on net deferred tax assets as of August 31, 2022 and 2021.

Stock Options Awards

The grant date fair value of stock options is determined using the Black-Scholes option-pricing model. The Black-Scholes option-pricing model requires inputs including the market price of SemiLEDs' common stock on the date of grant, the term that the stock options are expected to be outstanding, the implied stock volatilities of several of the Company's publicly-traded peers over the expected term of stock options, risk-free interest rate and expected dividend. The expected term is derived from historical data on employee exercises and post-vesting employment termination behavior after taking into account the contractual life of the award. The risk-free interest rate is

based on the U.S. Treasury yield curve in effect at the time of grant for zero coupon U.S. Treasury notes with maturities approximately equal to the expected term of the related options. The expected dividend has been zero for the Company's option grants as SemiLEDs has never paid dividends and does not expect to pay dividends for the foreseeable future. Each of these inputs is subjective and generally requires significant judgment to determine.

A summary of the option activity and changes for the years ended August 31, 2022 and 2021 is presented below:

	<u>Number of Stock Options Outstanding</u> (In thousands)	<u>Weighted- Average Exercise Price</u>	<u>Weighted- Average Remaining Contractual Life (Years)</u>	<u>Aggregate Intrinsic Value</u> (In thousands)
Outstanding—September 1, 2020	8	\$ 159.00	0.5	\$ —
Granted	—	—		
Forfeited	(8)	159.00		
Exercised	—	—		
Outstanding—August 31, 2021	—	\$ —	—	\$ —
Granted				
Forfeited	—	—		
Exercised				
Outstanding—August 31, 2022	—	\$ —	—	\$ —
Vested and expected to vest—August 31, 2022	—	\$ —	—	\$ —
Exercisable—August 31, 2022	—	\$ —	—	\$ —

As of August 31, 2022 and 2021, unrecognized compensation costs related to unvested stock options were nil.

Restricted Stock Units Awards

The grant date fair value of stock units is based upon the market price of SemiLEDs' common stock on the date of the grant. This fair value is amortized to compensation expense over the vesting term.

A summary of the restricted stock unit awards outstanding and changes for the years ended August 31, 2022 and 2021 is presented below:

	<u>Number of Stock Units Outstanding</u> (In thousands)	<u>Weighted- Average Grant Date Fair Value</u>
Outstanding—September 1, 2020	139	\$ 2.39
Granted	48	3.00
Vested	(69)	2.70
Forfeited	(15)	2.51
Outstanding—August 31, 2021	103	\$ 2.46
Granted	114	7.10
Vested	(86)	5.09
Forfeited	(11)	2.39
Outstanding—August 31, 2022	120	\$ 4.96

As of August 31, 2022 and 2021, unrecognized compensation cost related to unvested restricted stock unit awards of \$532 thousand and \$205 thousand, respectively, is expected to be recognized over a weighted average period of 1.19 years and 2.09 years, respectively, and will be adjusted for subsequent changes in estimated forfeitures.

9. NET LOSS PER SHARE OF COMMON STOCK

The following stock-based compensation plan awards were excluded from the computation of diluted net loss per share of common stock for the periods presented because including them would have an antidilutive effect on the net loss per share (in thousands of shares):

	Years Ended August 31,	
	2022	2021
Stock units and stock options to purchase common stock	88	70
Convertible notes to convert into common stock	467	235

10. INCOME TAXES

Income taxes are recognized for the amount of taxes payable for the current year and for the impact of deferred tax assets and liabilities, which represent future tax consequences of events that have been recognized differently in the financial statements than for tax purposes. Deferred tax assets and liabilities are established using the enacted statutory tax rates and are adjusted for any changes in such rates in the period of change.

United States

SemiLEDs Corporation is incorporated in the United States of America and is subject to United States federal taxation. No provisions for income taxes have been made as the Company has no taxable income for the period.

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act included significant changes to the U.S. corporate income tax system including, among other things, lowering the U.S. statutory federal tax rate to 21%. The reduction of the U.S. corporate tax rate caused the Company to adjust its U.S. deferred tax assets and liabilities to the lower federal rate of 21% in the fiscal year ended August 31, 2019. The Tax Act also added many new provisions, including a one-time repatriation tax on deemed repatriation of historical earnings of foreign subsidiaries ("transition tax"), changes to bonus depreciation, limits on deductions for executive compensation and interest expense, a tax on global intangible low-taxed income ("GILTI"), the base erosion anti-abuse tax ("BEAT") and a deduction for foreign-derived intangible income. The Company has elected to account for the tax on GILTI and BEAT as a period cost and thus has not adjusted any net deferred tax assets of its foreign subsidiaries for the new tax. However, the Company has considered the potential impact of GILTI and BEAT on its U.S. federal net operating loss ("NOL") carryforward and determined that the projected tax benefit to be received from its NOL carryforward may be reduced due to these provisions.

The changes included in the Tax Act are broad and complex. The SEC issued Staff Accounting Bulletin No. 118 (SAB 118), as amended by ASU 2018-05, which provides guidance for companies related to the Tax Act. ASU 2018-05 allows for a measurement period of up to one year after the enactment date of the Tax Act to finalize the recording of the related tax impacts. The Company's accounting for the tax effects of the Tax Act were completed in fiscal 2019. Although the Company believes the effects of the Tax Act have been appropriately recorded, it will continue to monitor, among other things, changes in interpretations of the Tax Act, any legislative action arising because of the Tax Act and any changes in accounting standards for income taxes or related interpretations in response to the Tax Act. The Company intends to assess the impact of any such changes in legislative interpretations or standards and adjust its provision as new information becomes available.

In accordance with SAB 118, the Company has made reasonable estimates related to (1) the remeasurement of its U.S. deferred tax balances for the reduction in the statutory tax rate, (2) the liability for the transition tax and (3) the partial valuation allowance recorded against its federal NOL carryforward due to the impact of the GILTI and BEAT provisions. In fiscal 2022, the Company determined that there were no material changes to the provisional amounts recorded as of August 31, 2022.

Taiwan

The Company's loss before income taxes is primarily derived from the operations in Taiwan and income tax expense is primarily incurred in Taiwan.

As a result of amendments to the "Taiwan Income Tax Act" enacted by the Office of the President of Taiwan on February 7, 2018, the statutory income tax rate increased from 17% to 20% and the undistributed earning tax, or a surtax, decreased from 10% to 5% effective from January 1, 2018. As a result, the statutory income tax rate in Taiwan is 20% for the years ended August 31, 2022 and 2021. An additional surtax, of which rate was reduced from 10% to 5% being applied to the Company starting from September 1, 2018, is assessed on undistributed income for the entities in Taiwan, but only to the extent such income is not distributed or set aside as a legal reserve before the end of the

following year. The 5% surtax is recorded in the period the income is earned, and the reduction in the surtax liability is recognized in the period the distribution to stockholders or the setting aside of legal reserve is finalized in the following year.

The Company's loss before income taxes for the years ended August 31, 2022 and 2021 was attributable to the following jurisdictions (in thousands):

	Years Ended August 31,	
	2022	2021
U.S. operations	\$ (875)	\$ (1,156)
Foreign operations	(1,851)	(1,701)
Loss before income taxes	<u>\$ (2,726)</u>	<u>\$ (2,857)</u>

Income tax expense differed from the amounts computed by applying the statutory U.S. federal income tax rate of 21% to loss before income taxes for the years ended August 31, 2022 and 2021, as a result of the following (in thousands):

	Years Ended August 31,	
	2022	2021
Computed "expected" income tax benefit	\$ (115)	\$ (115)
Foreign tax rate differential	12	19
Valuation allowance	(3,092)	(239)
Other	3,195	335
Income tax expense	<u>\$ —</u>	<u>\$ —</u>

Net deferred tax assets (liabilities) as of August 31, 2022 and 2021 consist of the following (in thousands):

	August 31,	
	2022	2021
Deferred tax assets:		
Inventories, primarily due to inventory obsolescence and lower of cost or market provisions	\$ 1,715	\$ 1,848
Allowance for doubtful accounts	34	38
Accruals and other	(23)	(159)
Property, plant and equipment	528	738
Stock-based compensation	392	392
Net operating loss carryforwards	<u>19,864</u>	<u>30,924</u>
Total gross deferred tax assets	22,510	33,781
Less: Valuation allowance	<u>(22,510)</u>	<u>(33,781)</u>
Deferred tax assets, net of valuation allowance	<u>\$ —</u>	<u>\$ —</u>

A valuation allowance is provided when it is more likely than not that the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible and operating loss carryforwards utilizable. Management considers the scheduled reversal of deferred tax liabilities, carryback availability, projected future income, and tax-planning strategies in making this assessment. The Company established full valuation allowances to offset all of its deferred tax assets due to the uncertainty of realizing future tax benefits from its net operating loss carryforwards and other deferred tax assets.

As of August 31, 2022 the Company had the U.S. net operating losses (the “U.S. NOLs”) of approximately \$3,292 thousand, which begins to expire in 2025. The U.S. NOLs generated in tax years prior to August 31, 2018, can be carryforward for twenty years, whereas U.S. NOLs generated after August 31, 2018 can be carryforward indefinitely. The unused net operating loss carryforwards were as follows (in thousands):

	August 31, 2022	Expiration Year
U.S. federal net operating loss carryforwards (prior to August 31, 2018)	\$ 367	2025-2037
U.S. federal net operating loss carryforwards (after August 31, 2018)	2,925	—
Foreign net operating loss carryforwards (expiring over the next 5 years)	78,737	2023-2027
Foreign net operating loss carryforwards (expiring in more than 5 years)	17,126	2028-2032
Total unused net operating loss carryforwards and income tax credits	<u>\$ 99,155</u>	

Unrecognized Tax Benefits

On December 22, 2017, the U.S. Tax Cuts and Jobs Act was adopted, which among other effects, reduced the U.S. federal corporate income tax rate to 21% from 34% (or 35% in certain cases) beginning in 2018, requires companies to pay a one-time transition tax on certain unrepatriated earnings from non-U.S. subsidiaries that is payable over eight years, makes the receipt of future non-U.S. sourced income of non-U.S. subsidiaries tax-free to U.S. companies and creates a new minimum tax on the earnings of non-U.S. subsidiaries relating to the parent’s deductions for payments to the subsidiaries. Provisional estimate of the Company is that no tax will be due under this provision.

As of August 31, 2022 and 2021, the Company had no unrecognized tax benefits.

The Company is subject to taxation in the United States and various states and certain foreign jurisdictions. As of August 31, 2022, the 2016 through 2019 tax years remain subject to examination by the U.S. tax authorities. With few exceptions, as of August 31, 2022, the Company is no longer subject to U.S. federal, state, local, or foreign examinations by tax authorities for tax years before 2016. Below is a summary of open tax years by major tax jurisdiction:

	Open Tax Year
U.S. federal	2017-2021
U.S. state	2017-2021
Foreign—Taiwan	2021

The Company is not currently under examination by income tax authorities in any federal, state or foreign jurisdictions. The Company does not expect that the total amount of unrecognized tax benefits will change significantly within the next 12 months.

11. PRODUCT AND GEOGRAPHIC INFORMATION

Revenues by products for the years ended August 31, 2022 and 2021 are as follows (in thousands):

	Years Ended August 31,	
	2022	2021
LED chips	\$ 166	\$ 171
LED components	4,872	3,259
Lighting products	533	730
Other ⁽¹⁾	1,480	575
Total	<u>\$ 7,051</u>	<u>\$ 4,735</u>

(1) Other includes primarily revenues attributable to the sale of epitaxial wafers, scraps and raw materials and the provision of services.

Revenues by geography are based on the billing address of the customer. The following table sets forth revenues by geographic area for the years ended August 31, 2022 and 2021 (in thousands):

	Years Ended August 31,	
	2022	2021
United States	\$ 2,888	\$ 1,550
Netherlands	1,236	1,274
Japan	963	504
Taiwan	766	155
Germany	574	380
China	294	256
Other (individually less than 5% of total net revenues)	330	616
Total	<u>\$ 7,051</u>	<u>\$ 4,735</u>

Tangible Long-Lived Assets

Substantially all of the Company's tangible long-lived assets are located in Taiwan.

12. FAIR VALUE MEASUREMENTS

The following table presents the carrying amounts and estimated fair values of the Company's financial instruments as of August 31, 2022 and 2021 (in thousands):

	August 31, 2022		August 31, 2021	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Financial assets:				
Cash and cash equivalents and restricted cash	\$ 4,356	\$ 4,356	\$ 4,923	\$ 4,923
Receivables (including related parties)	880	880	865	865
Other assets (non-derivatives)	184	184	248	248
Financial liabilities:				
Payables (including related parties)	\$ 4,049	\$ 4,049	\$ 4,300	\$ 4,300
Long-term debt (including current installments)	6,929	6,929	7,678	7,678

The fair values of the financial instruments shown in the above table as of August 31, 2022 and 2021 represent the amounts that would be received to sell those assets or that would be paid to transfer those liabilities in an orderly transaction between market participants at that date. Those fair value measurements maximize the use of observable inputs. However, in situations where there is little, if any, market activity for the asset or liability at the measurement date, the fair value measurement reflects management's own judgments about the assumptions that market participants would use in pricing the asset or liability. Those judgments are developed by management based on the best information available in the circumstances, including expected cash flows and appropriately risk-adjusted discount rates, available observable and unobservable inputs.

The following methods and assumptions were used to estimate the fair value of each class of financial instruments:

- Cash, cash equivalents, restricted cash, receivables and payables (including related parties) and notes payable to banks: The carrying amounts, at face value or cost plus accrued interest, approximate fair value because of the short maturity of these instruments.
- Other assets (non-derivatives) include primarily value-added tax ("VAT") refund receivables, refundable deposits, and restricted time deposits. The fair value of VAT refund receivables approximates the carrying amount because of the short maturity. The fair value of refundable deposits and restricted time deposits with no fixed maturity is based on the carrying amount.
- Long-term debt: The fair value of the Company's variable rate long-term debt is estimated based on the prevailing market rate adjusted by the Company's credit spread.

13. CONDENSED PARENT COMPANY ONLY FINANCIAL STATEMENTS

As a holding company, dividends received from SemiLEDs' subsidiaries in Taiwan, if any, will be subject to withholding tax under Taiwan law, as well as statutory and other legal restrictions. The condensed parent company only financial information for SemiLEDs is presented below (in thousands):

Condensed Balance Sheets	August 31,	
	2022	2021
ASSETS		
Cash and cash equivalents	\$ 2,215	\$ 1,162
Prepaid expenses and other current assets	11,644	11,995
Total current assets	13,859	13,157
Intangible assets, net	1	1
Investments in subsidiaries	(4,567)	(2,841)
TOTAL ASSETS	\$ 9,293	\$ 10,317
LIABILITIES AND EQUITY		
Accrued expenses and other current liabilities	\$ 1,208	\$ 1,104
Long-term debt, current portion	4,587	4,587
Total current liabilities	5,795	5,691
Total equity	3,498	4,626
TOTAL LIABILITIES AND EQUITY	\$ 9,293	\$ 10,317

SemiLEDs had no contingencies, long-term obligations and guarantees as of August 31, 2022 or August 31, 2021.

Condensed Statements of Operations	Years Ended August 31,	
	2022	2021
Operating expenses:		
Selling, general and administrative	\$ 638	\$ 694
Loss from operations	(638)	(694)
Other expenses:		
Equity in losses from subsidiaries, net	(1,869)	(1,697)
Interest expenses	(323)	(322)
Other income (expense), net	86	(138)
Total other expenses, net	(2,106)	(2,157)
Net loss	\$ (2,744)	\$ (2,851)

Condensed Statements of Cash Flows	Years Ended August 31,	
	2022	2021
Net cash provided by (used in):		
Operating activities	\$ 58	\$ (3,264)
Investing activities	—	—
Financing activities	995	4,175
Net increase in cash and cash equivalents	1,053	911
Cash and cash equivalents at beginning of year	1,162	251
Cash and cash equivalents at end of year	\$ 2,215	\$ 1,162

14. RELATED PARTY TRANSACTIONS

On November 25, 2019 and on December 10, 2019, the Company issued convertible unsecured promissory notes (the “Notes”) to J.R. Simplot Company, its largest shareholder, and Trung Doan, its Chairman and Chief Executive Officer, (together, the “Holders”) with a principal sum of \$1.5 million and \$500 thousand, respectively, and an annual interest rate of 3.5%. Principal and accrued interest shall be due on demand by the Holders on and at any time after May 30, 2021. On February 7, 2020, J.R. Simplot Company assigned all of its right, title and interest in and to Simplot Taiwan Inc. The outstanding principal and unpaid accrued interest of the Notes may be converted into the Company’s common stock based on a conversion price of \$3.00 per share, at the option of the Holders any time from the date of the Notes. On May 25, 2020, each of the Holders converted \$300,000 of the Notes into 100,000 shares of the Company’s common stock. On May 26, 2021, the Notes were extended with the same terms and interest rate for one year and were scheduled to mature on May 30, 2022, and on May 26, 2022, the Notes were further extended with the same terms and interest rate for one year and now mature on May 30, 2023. As of August 31, 2022 and 2021, the outstanding principal of these notes totaled \$1.4 million.

On January 8, 2019, the Company entered into loan agreements with each of the Chairman and Chief Executive Officer and the largest shareholder of the Company, with aggregate amounts of \$1.7 million and \$1.5 million, respectively, and an annual interest rate of both 8%. All proceeds of the loans were exclusively used to return the deposit to Formosa Epitaxy Incorporation in connection with the cancelled proposed sale of the Company’s headquarters building pursuant to the agreement dated December 15, 2015. The Company was required to repay the loans of \$1.5 million on January 14, 2021 and \$1.7 million on January 22, 2021, respectively, unless the loans were sooner accelerated pursuant to the loan agreements. On January 16, 2021, the maturity date of these loans was extended with same terms and interest rate for one year to January 15, 2022, and on January 14, 2022, the maturity date of these loans was further extended with same terms and interest rate for one more year to January 15, 2023. As of August 31, 2022 and 2021, these loans totaled \$3.2 million. The loans are secured by a second priority security interest on the Company's headquarters building.

15. SUBSEQUENT EVENTS

The Company has analyzed its operations subsequent to August 31, 2022 to the date these consolidated financial statements were issued, finding that the impact of COVID-19 and subsequent variants on the Company is unknown and the financial consequences of this situation cause uncertainty as to the future and its effects on the economy and the Company.

Except for the above, the Company has determined that it does not have any other material subsequent events to disclose in these consolidated financial statements.

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

Not applicable.

Item 9A. Controls and Procedures**Evaluation of Disclosure Controls and Procedures**

Our management, with the participation of our chief executive officer, or CEO, and our chief financial officer, or CFO, has evaluated the effectiveness of our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act as of August 31, 2022. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Based upon the aforementioned evaluation, our CEO and CFO have concluded that, as of August 31, 2022, our disclosure controls and procedures are designed at a reasonable assurance level and are effective to provide reasonable assurance that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the SEC rules and forms, and that such information is accumulated and communicated to our management, including our CEO and CFO, as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Under the supervision and with the participation of our management, including our CEO and CFO, we assessed the effectiveness of our internal control over financial reporting as of the end of the period covered by this report based on the framework in "Internal Control—Integrated Framework (2013)" issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on that assessment, our CEO and CFO concluded that our internal control over financial reporting is effective to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of the financial statements for external purposes in accordance with GAAP, as of August 31, 2022.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the quarter ended August 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

Not applicable.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

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

Our Board of Directors

Trung T. Doan, 63, has served as a director, Chairman of our Board and as our CEO since January 2005, and as our President since August 2012. Prior to joining us, Mr. Doan served as Corporate Vice President of Applied Global Services (AGS) Product Group at Applied Materials, Inc. and also served as President and Chief Executive Officer of Jusung Engineering, Inc., a semiconductor/LCD equipment company in Korea. In addition, Mr. Doan served as Vice President of Process Development at Micron Technology Inc. Mr. Doan previously served as a director of Advanced Energy Industries, a publicly traded manufacturer of power conversion and control systems within the past five years. Mr. Doan also previously served as a director of Dolsoft Corporation, a privately held software company, as a director of Nu Tool Inc., a semiconductor technology company, and as a director of EMCO, a publicly traded manufacturer of advanced flow control devices and systems. Mr. Doan holds a bachelor of science degree in nuclear engineering from the University of California, Santa Barbara, where he graduated with honors, and a master of science degree in chemical engineering from the University of California, Santa Barbara. Our Board has determined that Mr. Doan should serve on our Board and as our Chairman based on his in-depth knowledge of our business and industry and his experience serving on the boards of directors of several major technology companies, as well as in management roles in the technology industry.

Dr. Edward Kuan Hsiung Hsieh, 70, has served as a director since February 2012. Dr. Hsieh has been Chairman, Chief Executive Officer and a director of Eton Intelligent Technologies, a media and publications company, since April 2000 and Chairman, Chief Executive Officer and a director of VR Networks, a VoIP and VR application company, since January 2000. He has also served as an Adjunct Professor at National Taiwan University since February 2009. From February 2007 to February 2010, Dr. Hsieh was Chief Executive Officer of Asia Pacific Telecom, a 3G mobile, and fixed line telecommunications company, as well as Executive Director of APOL, an Internet service provider. He also served as Chairman of Good Neighbors Taiwan since 2019. Dr. Hsieh holds a bachelor of science degree in electrical engineering from National Taiwan University, a master of science degree in electrical engineering from the University of California, Santa Barbara, and a doctor of philosophy degree in electrical engineering and applied physics from Cornell University. He also studied accounting at the University of California, Los Angeles. Our Board has determined that Dr. Hsieh should serve as a director based on his experience teaching master of business administration classes at National Taiwan University, his service as an International Financial Adviser with Merrill Lynch, Pierce, Fenner & Smith and his management roles at several start-up companies.

Scott R. Simplot, 75, has served as our director since March 2005. Mr. Simplot has been Chairman of the Board of Directors and a Director of J.R. Simplot Company since May 2001 and August 1970, respectively. Mr. Simplot served as a Manager of or Partner in various closely held entities such as Block 22 LLC, Broadway Hospitality LLC, Columbia Developments LLC, Empty JP3 Shell, LLC, Idaho Sports Properties LLC, Indian Creek Cattle, LLC, JRS Management L.L.C., JRS Properties III L.P., ESP Development LLC, Hotel 43 LLC, SBP LLLP, Simplot Ketchum Investment, LLC, Simplot Ketchum Properties, LLC, SR Management LLC, SRS Green River LLC, Sunny Slope Orchards Partnership, SRS Properties LLLP, and Sylvan Beach, LLC. Mr. Simplot also serves as a director to various companies such as Bar -U-, Inc., Block 65 and 66 Master Association, Inc., Cal-Ida Chemical Company, Censa of California, Inc., Claremont Realty Company, CS Beef Packers, LLC, CS Property Development, LLC, Glen Dale Farms, Inc., J.R. Simplot Company Foundation, Inc., J.R. Simplot Foundation, Inc., JUMP, Inc., JRS India Corporation Private Limited, OSL Depot Condominium Management Association, Inc., Simplot India, LLC, Simplot India Foods Private Limited, Simplot India Properties LLC, Simplot International, Inc., Simplot Latin America Holdings, S.A., Simplot Livestock Co., Simplot Taiwan Inc., SPS International, Inc., SR Simplot Foundation, Inc., Three Creek Ranch Company, and Camas, Inc. Mr. Simplot holds a Bachelor of Science degree in business from the University of Idaho and a Master's in Business Administration from the University of Pennsylvania. Our Board of Directors has determined that Mr. Simplot should serve as a director based on the extensive knowledge and insight he brings to our board of directors from his experience serving as Chairman and holding a variety of management positions at a large private company and serving on the boards of directors of companies in a variety of industries. Mr. Simplot became a Director on our board as part of his duties as the Chairman of the Board of J. R. Simplot Company, the 100 % owner of Simplot Taiwan, Inc., which was entitled to designate two members of our board of directors in connection with J.R. Simplot Company's investment in our Series A convertible preferred stock.

Walter Michael Gough, 68, has served as a director since April 2016. Mr. Gough has led Gough and Associates, a firm that specializes in financial consulting for domestic and international companies since 2005. He is also a tenured faculty member in Accounting and Business at DeAnza College in Cupertino, California where he has taught since 1985. From June 2000 to June 2004, he was Chief Financial Officer and Financial Consultant at NuTool Inc., a semiconductor equipment manufacturer. From 1995 through 1999, he was a founding member and Chief Financial Officer of Invest In Yourself, LLC; an organization that provided consulting for professional sports franchises. Prior to teaching and consulting, Mr. Gough was a financial analyst and contracts manager at Watkins-Johnson Company, a high technology electronics firm. Before Watkins-Johnson, Mr. Gough worked for Kidder Peabody, an investment banking firm. He holds MBA and BA degrees (cum laude) from Santa Clara University, and a Masters in English from Notre Dame de Namur University. Our Board has determined that Mr. Gough should serve on our Board based on his experience as a consultant to technology companies in both the United States and Taiwan, his prior experience as a chief financial officer of several companies, and his expertise in accounting and finance.

Roger Lee, 63, has served as a director since September 2019. Mr. Lee previously served as a director and an Audit Committee member of SemiLEDs from August 2017 to March 2019. Mr. Lee has more than 30 years of semiconductor experience and leadership. He has been the President and CEO of TF Semiconductor Solutions (TFSS) since August 2014. Prior to becoming the CEO of TFSS, Mr. Lee served as world-wide COO and Interim President & CEO of Telefunken Semiconductors located in Roseville, California and Heilbronn, Germany from May 2011 to July 2014. Mr. Lee began his career as an engineer for Texas Instruments. During his career, Mr. Lee has served on numerous boards and held a variety of executive and senior-level positions for several companies, including senior vice president of SMIC. Previously, he co-founded the SMIC-Toppan JV (TSES) where he served as its vice chairman of its Board of Directors, and had held several senior management positions, including senior fellow and head of flash memory at Micron Technology and was instrumental to the development of Micron's flash memory program. More recently, he was COO and a board member of Founder Microelectronics, Inc. in Shenzhen, China where he was responsible for overall company operations, including fab manufacturing, sales and marketing, facilities, and R&D operations. Mr. Lee earned his Bachelor's degree and Master's degree in Electrical Engineering from Iowa State University. Our Board has determined that Mr. Lee should serve on our Board based on his experience with technology companies and other organizations in the United States, Germany and China.

Executive Officers

In addition to Mr. Doan, our CEO, who also serves as a director, our executive officers as of October 31, 2022 consisted of the following:

Christopher Lee, 51, has served as our Chief Financial Officer since September 2015. From November 2014 until his appointment as Chief Financial Officer, Mr. Lee was the interim Chief Financial Officer of the Company. Mr. Lee joined SemiLEDs in September 2014. Mr. Lee has over 25 years of experience in accounting and finance, including US GAAP, PCAOB standards and SEC rules and regulations. Prior to joining us, Mr. Lee was a partner of KEDP CPA Group from August 2009 to June 2011 and a self-employed accountant from July 2011 to August 2014. Mr. Lee holds a BS degree in accounting from The Ohio State University and a MS degree in business taxation from Golden Gate University and is licensed as a Certified Public Accountant (CPA) in the United States.

CORPORATE GOVERNANCE

Board Composition

Our Nominating and Corporate Governance Committee is charged with identifying and evaluating individuals qualified to serve as members of the Board and recommending to the full Board nominees for election as directors. We seek directors with experience in areas relevant to the strategy and operations of the Company. We seek a Board that collectively has a range and diversity of skills, experience, age, industry knowledge and other factors in the context of the needs of the Board. The biographies of each of the nominees below contains information regarding the person's service as a director, business experience, director positions held currently or at any time during the last five years and the experiences, qualifications, attributes or skills that caused the Nominating and Corporate Governance Committee to determine that the person should serve as a director of our Company. In addition to the information presented below regarding each director's specific experience, qualifications, attributes and skills that led our Nominating and Corporate Governance Committee and Board to the conclusion that he should serve as a director, we also believe that each of our directors has a reputation for integrity, honesty and adherence to high ethical standards. Each of our directors has demonstrated business acumen and an ability to exercise sound judgment, as well as a commitment of service to our Company and our Board. Each of our director nominees is currently serving on the Board.

Board Responsibilities and Structure

The Board oversees, counsels, and directs management in the long-term interests of the Company and our stockholders. The Board's responsibilities include:

- selecting, evaluating the performance of, and determining the compensation of the CEO and other executive officers;
- overseeing the risks that the Company faces;
- reviewing and approving our major financial objectives and strategic and operating plans, and other significant actions;
- overseeing the conduct of our business and the assessment of our business and other enterprise risks to evaluate whether the business is being properly managed; and
- overseeing the processes for maintaining our integrity with regard to our financial statements and other public disclosures, and compliance with law and ethics.

The Board and its committees met throughout the year on a set schedule, held special meetings, and acted by written consent from time to time as appropriate. During fiscal year 2021, the Board held executive sessions for the independent directors to meet without Mr. Doan present at the end of every Board meeting.

Our Bylaws do not dictate a particular Board structure and the Board is free to determine whether or not to have a Chairman and, if so, to select that Chairman and our CEO in the manner it considers our best interest. Currently, the Board has selected Mr. Doan to hold the position of both Chairman of the Board and CEO. Mr. Doan’s experience at the Company has afforded him intimate knowledge of the issues, challenges and opportunities facing each of the Company’s businesses. Accordingly, he is well positioned to focus the Board’s attention on the most pressing issues facing the Company. The Board has not appointed a lead independent director. The Board believes its administration of its risk oversight function has not affected the Board’s leadership structure.

Board Committees and Charters

The Board delegates various responsibilities and authority to different Board committees. Committees regularly report on their activities and actions to the full Board. The Board currently has, and appoints the members of, a standing Audit Committee, Compensation Committee, and Nominating and Corporate Governance Committee. Each of the Board committees has a written charter approved by the Board, and we post each charter on our web site at <http://investors.semileds.com/governance.cfm>. Each committee can engage outside experts, advisors and counsel to assist the committee in its work. The following table identifies the current committee members.

Name	Audit	Compensation	Nominating and Corporate Governance
Dr. Edward Kuan Hsiung Hsieh	Chair	✓	
Walter Michael Gough	✓		
Roger Lee	✓		
Scott R. Simplot		Chair	Chair
Number of Committee Meetings Held in Fiscal Year 2022	4	2	2

Audit Committee

Our Audit Committee is responsible for, among other things:

- reviewing and approving the selection of our independent auditors, and approving the audit and non-audit services to be performed by our independent auditors;
- monitoring the integrity of our financial statements and our compliance with legal and regulatory requirements as they relate to financial statements or accounting matters;
- reviewing the adequacy and effectiveness of our internal control policies and procedures;
- discussing the scope and results of the audit with the independent auditors and reviewing with management and the independent auditors our interim and year-end operating results; and
- preparing the Audit Committee Report that the SEC requires in our annual proxy statement.

The Board believes that each current member of our Audit Committee is an independent director under the NASDAQ rules and meets the additional SEC independence requirements for audit committee members. It has also determined that Dr. Hsieh and Mr. Gough meet the requirements of an “audit committee financial expert,” as defined in Regulation S-K.

Compensation Committee

Our Compensation Committee is responsible for, among other things:

- overseeing our compensation policies, plans and benefit programs;
- reviewing and approving for our executive officers: the annual base salary, the annual incentive bonus, including the specific goals and amount, equity compensation, employment agreements, severance arrangements and change in control arrangements, and any other benefits, compensation or arrangements;

- reviewing and determining our equity-based compensation plans; and
- administering our equity-based compensation plans.

Although the Compensation Committee has the authority to determine the compensation paid to executive officers, other officers, employees, consultants and advisors, it can delegate its responsibility for setting compensation for individuals other than the CEO to a subcommittee, in the case of other officers, or to officers, in the case of employees and consultants. It may also delegate to officers the authority to grant options or other equity or equity-based awards to employees who are not executive officers or members of the Board. It may also generally take into account the recommendations of the CEO, other than with respect to his own compensation.

Nominating and Corporate Governance Committee

Our Nominating and Corporate Governance Committee is responsible for, among other things:

- identifying prospective director nominees and recommending nominees for each annual meeting of stockholders to the Board;
- reviewing developments in corporate governance practices and developing and recommending governance principles applicable to our Board;
- overseeing the evaluation of our Board and management; and
- recommending members for each Board committee to our Board.

Our Nominating and Corporate Governance Committee has not established any minimum qualifications for directors although in assessing the skills and characteristics of individual members, it must give due regard for independence and financial literacy considerations dictated by the NASDAQ rules. The Nominating and Corporate Governance Committee does not at this time have a policy regarding its consideration of director candidates recommended by stockholders, as it has not yet received any such recommendations. It may adopt a policy if such recommendations are received.

Attendance at Board, Committee and Annual Stockholders' Meetings

The Board held four meetings in fiscal 2022. We expect each director to attend every meeting of the Board and the committees on which he serves, and encourage them to attend the annual stockholders' meeting. All directors attended at least 75% of the aggregate meetings of the Board and the committees on which they served in fiscal 2022 and all continuing directors attended the 2022 annual meeting of stockholders.

Risk Management

The Board is involved in the oversight of risks that could affect the Company. The Board also monitors cyber threat trends, regulatory developments, and major threats to the Company, including setting expectations and accountability for management, as well as assessing the adequacy of resources, funding, and focus on cyber risk management activities. This oversight is conducted primarily through the Audit Committee which, on behalf of the Board, is charged with overseeing the principal risk exposures we face and our mitigation efforts in respect of these risks. The Audit Committee is responsible for interfacing with management and discussing with management the Company's principal risk exposures and the steps management has taken to monitor and control risk exposures, including risk assessment and risk management policies. The Compensation Committee also plays a role in that it is charged, in overseeing the Company's overall compensation structure, with assessing whether that compensation structure creates risks that are reasonably likely to have a material adverse effect on us.

Code of Business Conduct and Ethics

We have adopted a Code of Business Conduct and Ethics that applies to all of our employees, officers and directors, including those officers responsible for financial reporting. These standards are designed to deter wrongdoing and to promote honest and ethical conduct. The Code of Business Conduct and Ethics is available at our website at <http://investors.semileds.com/governance.cfm>. In addition, a copy of the Code of Ethics will be provided without charge upon written request to the Company at SemiLEDs Corporation, 3F, No.11 Ke Jung Rd., Chu-Nan Site, Hsinchu Science Park, Chu-Nan 350, Miao-Li County, Taiwan, R.O.C. Any amendments to the Code, or any waivers of its requirements required to be disclosed pursuant to SEC or NASDAQ requirements, including those that apply to the Company's principal executive officer, principal financial officer, principal accounting officer or persons performing similar functions, will be disclosed on the website.

Communications from Stockholders and Other Interested Parties to Directors

The Board recommends that stockholders and other interested parties initiate communications with the Board, any committee of the Board or any individual director in writing to the attention of our Corporate Secretary at our principal executive office at 3F, No.11 Ke Jung Rd., Chu-Nan Site, Hsinchu Science Park, Chu-Nan 350, Miao-Li County, Taiwan, R.O.C. This process will assist the Board in reviewing and responding to stockholder communications in an appropriate manner. The Board has instructed our Corporate Secretary to review such correspondence and, at his discretion, not to forward items if he deems them to be of a commercial or frivolous nature or otherwise inappropriate for the Board's consideration.

Board Diversity Matrix

The matrix below is information concerning the gender and demographic background of each of our current directors, as self-identified and reported by each director. This information is being provided in accordance with Nasdaq's board diversity rules.

Board Diversity Matrix (as of August 31, 2022)		
Total Number of Directors	5	
	Male	Female
Part I: Gender Identity		
Directors	5	—
Part II: Demographic Background		
Asian	3	—
White	1	—
Did Not Disclose Demographic Background	1	—

Delinquent Section 16(a) Reports

Section 16(a) of the Exchange Act requires our directors, executive officers and beneficial owners of more than 10% of our common stock to file with the SEC an initial report of ownership of our stock on Form 3 and reports of changes in ownership on Form 4 or Form 5. Persons subject to Section 16 are required by SEC regulations to furnish us with copies of all Section 16(a) forms that they file. As a matter of practice, our administrative staff assists our executive officers and directors in preparing initial ownership reports and reporting ownership changes, and typically files those reports on their behalf. Based solely on a review of the copies of such forms in our possession and on written representations from reporting persons, we believe that during fiscal year 2022 all of our executive officers, directors and 10% beneficial owners filed the required reports on a timely basis under Section 16(a).

Item 11. Executive Compensation

COMPENSATION OF THE NAMED EXECUTIVE OFFICERS AND DIRECTORS

Executive Compensation

This executive compensation section discloses the compensation awarded to or earned by our "named executive officers" during fiscal years 2022 and 2021.

We held our last non-binding advisory vote regarding compensation of our named executive officers at the 2021 Annual Meeting of Stockholders and expect to hold our next vote at our 2024 Annual Meeting of Stockholders.

Summary Compensation Table

The following table sets forth all of the compensation earned by our named executive officers during the relevant fiscal years.

Name and Principal Position	Fiscal Year	Salary (\$)	Bonus (\$)	Stock Awards (\$)(1)	Option Awards (\$)	All Other Compensation (\$)	Total (\$)
Trung T. Doan	2022	243,000	—	—	—	—	243,000
Chief Executive Officer	2021	258,188	—	—	—	—	258,188
Christopher Lee	2022	92,950	—	20,315	—	—	113,265
Chief Financial Officer	2021	91,420	—	18,079	—	—	109,499

- (1) The amount reported in this column represent the grant date fair value of the RSUs granted in the fiscal years ended August 31, 2022 and 2021, respectively, calculated in accordance with FASB ASC Topic 718. Each restricted stock unit award was granted pursuant to our 2010 Plan.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth the outstanding equity awards held by Mr. Lee as of the fiscal year ended August 31, 2022.

Name	Option Awards				Stock Awards			
	Number of Securities Underlying Unexercised Options Exercisable	Number of Securities Underlying Unexercised Options Un-exercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Options	Option Exercise Price (\$)	Award Date	Number of Shares or Units of Stock That Have Not Vested (1)	Market Value of Shares or Units of Stock That Have Not Vested \$(2)	Equity Incentive Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested (\$)
Trung T. Doan	—	—	—	—	—	—	—	—
Christopher Lee	—	—	—	—	11/12/21	5,000 ⁽³⁾	13,050	—
	—	—	—	—	01/10/20	4,000 ⁽⁴⁾	10,440	—

- (1) Represents RSU awards granted pursuant to our 2010 Plan.
(2) Amounts calculated using the closing market price of a share of our common stock as of August 31, 2022, which was \$2.61.
(3) This RSU award vests in eight quarterly installments with the first installment vesting three months after the grant date.
(4) This RSU award vests in four equal annual installments with the first installment vesting on the one-year anniversary of the grant date.

Pension Benefits

We do not maintain any defined benefit pension plans.

Nonqualified Deferred Compensation

We do not maintain any nonqualified deferred compensation plans.

Severance and Change in Control Benefits

Mr. Doan entered into an employment agreement in 2005, which provides that if he is terminated by us without cause or resigns due to a constructive termination, he will receive as severance an amount equal to six months of his then-current salary plus his current medical insurance for six months following his termination date. We offered such severance to motivate Mr. Doan to continue as our executive officer by providing severance protection in the event that he is terminated by us without having committed any egregious act constituting cause or if we adversely change his position such that he resigns. Cause is defined as (a) the conviction of a felony or of any criminal offense involving moral turpitude; (b) the repeated failure to satisfactorily perform duties reasonably required by us; (c) material breach of the proprietary information and invention agreement, our written policies established by our Board or any term of his employment agreement; or (d) misappropriation of our property or unlawful appropriation of our corporate opportunity or our business. If we determine cause exists, we will provide Mr. Doan with written notice alleging cause and his failure to remedy the alleged cause within 30 days may result in a termination for cause. Constructive termination is defined as one of the following events when we have not received Mr. Doan's written consent for such event: (a) a significant reduction of his duties, position or responsibilities relative to his duties, position or responsibilities in effect immediately prior to such reduction or his removal from such position, duties and responsibilities, provided that a reduction in duties, position or responsibilities solely by virtue of us being acquired and made part of a larger entity will not constitute a constructive termination; (b) a substantial reduction, without good business reasons, of the facilities and perquisites available to him immediately prior to such reduction; (c) a reduction of his base salary unless such reduction is a part of a Company-wide reduction for similarly situated persons; or (d) a material reduction in the kind or level of employee benefits to which he is entitled immediately prior to such reduction, with the result that his overall benefits package is significantly reduced, unless such reductions are part of a Company-wide reduction for similarly situated persons.

Employment Agreements

Mr. Doan entered into an employment agreement in 2005, which provides for the severance payments and benefits described under “Severance and Change in Control Benefits” above.

Director Compensation

Our Board amended our director compensation policy on November 11, 2020 to replace the annual cash retainers for board and committee service with additional restricted stock units, as a result of which non-employee members of the Board now receive the following compensation for their board and committee services:

- no annual cash retainer for general Board or committee service;
- no cash payments for attendance at general Board meetings; and
- each year shortly following the annual stockholder meeting an annual grant of 5,000 shares of restricted stock units, which fully vests on the earlier of the next annual meeting or the one-year anniversary of the grant date, whichever is earlier, subject to continued service through the vesting date, provided that the restricted stock units will fully vest if we are subject to a change in control during their service.

The director compensation policy requires directors to attend at least 75% of the meetings each year in order to be re-nominated. The policy also includes an equity ownership guideline whereby our directors will be expected to own and hold shares of our common stock until retirement from their Board service. We also reimburse non-employee directors for travel, lodging and other expenses incurred in connection with their attendance at Board or committee meetings.

Director Compensation Table

The following table sets forth the total compensation for our non-employee directors for the year ended August 31, 2022:

Name	Fees Earned or Paid in Cash (\$)	Stock Awards (\$)(2)	All Other Compensation (\$)	Total (\$)
Dr. Edward Kuan Hsiung Hsieh	—	20,200	—	20,200
Walter Michael Gough	—	20,200	—	20,200
Roger Lee	—	20,200	—	20,200
Scott R. Simplot ⁽¹⁾	—	—	—	—

(1) Mr. Simplot waived any right to compensation.

(2) The amount reported in this column represent the grant date fair value of the RSUs granted in the fiscal year ended August 31, 2022, calculated in accordance with FASB ASC Topic 718. Each restricted stock unit award was granted pursuant to our 2010 Plan. Unless otherwise specified, each restricted stock unit award will vest in four equal installments commencing on the grant date, 100% of the stock units shall immediately vest on the date of the 2022 annual meeting, subject to continued service through the vesting date, provided that the restricted stock units will fully vest if we are subject to a change in control during their service.

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

PRINCIPAL STOCKHOLDERS

The following table sets forth information regarding the beneficial ownership of our common stock as of October 31, 2022 with respect to:

- each person, or group of affiliated persons, who is known by us to own beneficially 5% or more of our common stock;
- each of our directors;
- each of our named executive officers; and
- all directors and executive officers as a group.

Beneficial ownership is determined in accordance with the rules of the SEC. All shares of our common stock subject to options currently exercisable or exercisable within 60 days of October 31, 2022 and RSUs that will vest within 60 days of October 31, 2022, are deemed to be outstanding for the purpose of computing the percentage ownership of the person or group holding options and RSUs, but are not deemed to be outstanding for computing the percentage of ownership of any other person.

Unless otherwise indicated by the footnotes below, we believe, based on the information furnished to us, that each stockholder named in the table has sole voting and investment power with respect to all shares beneficially owned, subject to applicable community property laws.

Percentage of ownership is based on 4,832,346 shares of common stock outstanding as of October 31, 2022.

Unless otherwise indicated in the footnotes to the table, the address of each individual listed in the table is c/o SemiLEDs Corporation, 3F, No.11, Ke Jung Rd., Chu-Nan Site, Hsinchu Science Park, Chu-Nan 350, Miao-Li County, Taiwan, R.O.C.

Name and Address of Beneficial Owner	Shares Beneficially Owned	
	Number	Percent
5% Stockholders:		
Simplot Taiwan, Inc. J.R. Simplot Company	1,489,934 ⁽¹⁾	28.5 %
Trung Tri Doan	536,639 ⁽²⁾	11.0 %
Executive Officers and Directors:		
Trung Tri Doan	536,639 ⁽²⁾	11.0 %
Walter Michael Gough	21,068 ⁽³⁾	*
Roger Lee	12,500 ⁽³⁾	*
Dr. Edward Kuan Hsiung Hsieh	33,571 ⁽³⁾	*
Scott R. Simplot	1,520,970 ⁽¹⁾⁽⁴⁾	29.1 %
Christopher Lee	9,800 ⁽⁵⁾	*
All executive officers and directors as a group (6 persons)	2,134,548	40.2 %

* Indicates beneficial ownership of less than 1%.

- (1) Based on a Schedule 13D/A filed June 5, 2020, Simplot Taiwan, Inc., a wholly owned subsidiary of J.R. Simplot Company, and J.R. Simplot Company share voting and investment power over all such shares. Scott Simplot is the Chairman of J.R. Simplot Company. Mr. Simplot may be deemed to have shared voting and investment power over the shares held by Simplot Taiwan, Inc. Mr. Simplot disclaims beneficial ownership of such shares, except to the extent of his pecuniary interest therein. Includes 400,000 shares issuable upon exercise of outstanding convertible promissory notes. The address of Simplot Taiwan, Inc. is 1099 West Front Street, Boise, Idaho 83702.
- (2) Includes 127,141 shares held by The Trung Tri Doan 2010 GRAT, of which Trung Tri Doan is the sole trustee. Includes 66,667 shares issuable upon exercise of outstanding convertible promissory notes.
- (3) Includes 1,250 restricted stock units that will vest within 60 days.

- (4) Includes 31,036 shares held by JRS Properties III L.P. JRS Management L.L.C. is the sole general partner of JRS Properties III L.P. Scott Simplot and Stephen A. Beebe are the managers of JRS Management L.L.C. As managers of JRS Management L.L.C., Mr. Simplot and Mr. Beebe share voting and investment power over the securities held by JRS Properties III L.P. Mr. Simplot may be deemed to have voting and investment power over the shares held by JRS Properties III L.P. Also, includes 400,000 shares issuable upon exercise of outstanding convertible promissory notes as disclosed in footnote (1) above. Mr. Simplot disclaims beneficial ownership of such shares, except to the extent of his pecuniary interest therein. The address of JRS Properties III L.P. is 1099 West Front Street, Boise, Idaho 83702.
- (5) Includes 1,000 restricted stock units that will vest within 60 days.

Equity Compensation Plan Information

The following table summarizes information about our equity compensation plans as of August 31, 2022. All outstanding awards relate to our common stock.

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a) (in thousands)	Weighted-average exercise price of outstanding options, warrants and rights(2) (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c) (in thousands)
Equity compensation plans approved by security holders	120 ⁽¹⁾	\$ 4.96	700
Equity compensation plans not approved by security holders	—	—	—
Total	120		700

- (1) Consists of stock options granted under the 2005 Equity Incentive Plan and the 2010 Equity Incentive Plan, and restricted stock units granted under the 2010 Equity Incentive Plan. No additional grants could be made under the 2005 Equity Incentive Plan after December 8, 2010. In April 2014 and July 2019, SemiLEDs' stockholders approved amendments to the 2010 Plan that increased the number of shares authorized for issuance under the plan by an additional 250 thousand shares and 500 thousand shares, respectively. On September 25, 2020, SemiLEDs' stockholders approved an increase in the authorized share reserve under the 2010 plan by an additional 400 thousand shares.
- (2) The weighted average exercise price does not take into account the shares issuable upon vesting of outstanding restricted stock unit awards, which have no exercise price. The information required by this Item with respect to the securities ownership of directors, officers and certain beneficial owners is set forth under the heading "Principal Stockholders" above.

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

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

Since September 1, 2020, there has not been any transaction or series of similar transactions to which we were or are a party in which the amount involved exceeded or exceeds the lesser of \$120,000 or one percent of the average of our total assets at year-end for the last two completed fiscal years, and in which any of our directors or executive officers, any holder of more than 5% of any class of our voting securities or any member of the immediate family of any of the foregoing persons had or will have a direct or indirect material interest, other than the transactions described below, some of which represent continuing transactions from prior periods.

On January 8, 2019, the Company entered into loan agreements with each of the Chairman and Chief Executive Officer and the largest shareholder of the Company, with aggregate amounts of \$1.7 million and \$1.5 million, respectively, each with an annual interest rate of both 8%. All proceeds of the loans were exclusively used to return the deposit to Formosa Epitaxy Incorporation in connection with the cancelled proposed sale of the Company's headquarters building pursuant to the agreement dated December 15, 2015. The Company was required to repay the loans of \$1.5 million on January 14, 2021 and \$1.7 million on January 22, 2021, respectively, unless the loans were sooner accelerated pursuant to the loan agreements. On January 16, 2021, the maturity date of these loans was extended with same terms and interest rate for one year to January 15, 2022, and on January 14, 2022, the maturity date of these loans was further extended with same terms and interest rate for one more year to January 15, 2023. As of August 31, 2022 and 2021, these loans totaled \$3.2 million. The loans are secured by a second priority security interest on the Company's headquarters building.

On November 25, 2019 and on December 10, 2019, the Company issued convertible unsecured promissory notes (the "Notes") to J.R. Simplot Company, its largest shareholder, and Trung Doan, its Chairman and Chief Executive Officer, (together, the "Holders") with a

principal sum of \$1.5 million and \$500 thousand, respectively, and an annual interest rate of 3.5%. Principal and accrued interest shall be due on demand by the Holders on and at any time after May 30, 2021. On February 7, 2020, J.R. Simplot Company assigned all of its right, title and interest in and to Simplot Taiwan Inc. The outstanding principal and unpaid accrued interest of the Notes may be converted into the Company's common stock based on a conversion price of \$3.00 per share, at the option of the Holders any time from the date of the Notes. On May 25, 2020, each of the Holders converted \$300,000 of the Notes into 100,000 shares of the Company's common stock. On May 26, 2021, the Notes were extended with the same terms and interest rate for one year and were scheduled to mature on May 30, 2022, and on May 26, 2022, the Notes were further extended with the same terms and interest rate for one year and now mature on May 30, 2023. As of August 31, 2022 and 2021, the outstanding principal of these notes totaled \$1.4 million.

Policies and Procedures for Related Party Transactions

Our Board has adopted a formal, written related party transactions policy pursuant to which, our executive officers, directors, beneficial owners of more than 5% of our common stock, and any member of the immediate family of and any firm, corporation or other entity at which any of the foregoing persons is employed or is a general partner or principal or in a similar position or in which such person has a 5% or greater beneficial interest, are not permitted to enter into a related party transaction with us without prior consent and approval of our Audit Committee. This policy covers any transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships in which we are a participant, the aggregate amount involved will or may be expected to exceed \$120,000 in any year and a related person has or will have a direct or indirect material interest (other than solely as a result of being a director or a less than 10% beneficial owner of another entity), including, without limitation, purchases of goods or services by or from the related person or entities in which the related person has a material interest, indebtedness, guarantees of indebtedness or employment by us of a related person.

The Audit Committee has determined that a related person does not have a direct or indirect material interest in the following categories of transactions and that each will be deemed to be preapproved:

- any transaction with another company at which a related person's only relationship is as an employee (other than an executive officer), director, or beneficial owner of less than 10% of that company's shares, if the aggregate amount involved does not exceed the greater of \$1 million or 2% of that company's total annual revenue.

Director Independence

The published listing requirements of NASDAQ dictate that a majority of the Board be comprised of independent directors whom our Board has determined have no material relationship with our Company and who are otherwise "independent" directors under those listing requirements. Our current Board consists of the five persons listed above. The Board has determined that each of our current directors, other than Mr. Doan, our CEO, qualifies as an independent director, such that more than a majority of our directors are independent directors under the NASDAQ rules.

The NASDAQ rules have objective tests and a subjective test for determining who is an "independent director." Under the objective tests, a director cannot be considered independent if:

- the director is, or at any time during the past three years was, an employee of the Company;
- the director or a family member of the director accepted any compensation from the company in excess of \$120,000 during any period of 12 consecutive months within the three years preceding the independence determination (subject to certain exclusions, including, among other things, compensation for board or board committee service);
- a family member of the director is, or at any time during the past three years was, an executive officer of the Company;
- the director or a family member of the director is a partner in, controlling stockholder of, or an executive officer of an entity to which the company made, or from which the company received, payments in the current or any of the past three fiscal years that exceeded 5% of the recipient's consolidated gross revenue for that year or \$200,000, whichever was greater (subject to certain exclusions);
- the director or a family member of the director is employed as an executive officer of an entity where, at any time during the past three years, any of the executive officers of the Company served on the compensation committee of such other entity; or
- the director or a family member of the director is a current partner of the Company's outside auditor, or at any time during the past three years was a partner or employee of the Company's outside auditor, and who worked on the company's audit.

The subjective test states that an independent director must be a person who lacks a relationship that, in the opinion of the Board, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. The Board has not established categorical standards or guidelines to make these subjective determinations but considers all relevant facts and circumstances.

In addition to the Board-level standards for director independence, the NASDAQ rules provide that directors, of whom there must be three, who serve on the Audit Committee must each satisfy standards established by the SEC that require that members of audit committees must not be affiliated persons of the issuer and may not accept directly or indirectly any consulting, advisory, or other compensatory fee from the issuer other than their director compensation.

Transactions Considered in Independence Determinations

In making its independence determinations, the Board considered transactions that occurred since the beginning of fiscal year 2021 between the Company and entities associated with the independent directors or members of their immediate family. All identified transactions that appeared to relate to the Company and a family member of, or entity with a known connection to, a director were presented to the Board for consideration.

None of the non-employee directors were disqualified from “independent” status under the objective tests. In making its subjective determination that each of our Company’s non-employee director is independent, the Board reviewed and discussed additional information provided by the directors and the Company with regard to each director’s business and personal activities as they may relate to the Company and the Company’s management. The Board considered the transactions in the context of the NASDAQ objective standards, the special standards established by the SEC for members of audit committees, and the SEC and U.S. Internal Revenue Service (“IRS”) standards for compensation committee members. Based on all of the foregoing, as required by the NASDAQ rules, the Board made a subjective determination that, because of the nature of the director’s relationship with the entity and/or the amount involved, no relationships exist that, in the opinion of the Board, would impair the director’s independence.

Item 14. Principal Accountant Fees and Services

Fees Billed by Independent Registered Public Accounting Firm

The following table shows the fees and related expenses for audit and other services provided by KCCW Accountancy Corp and its subsidiaries billed for fiscal year 2022 and 2021. The services requiring pre-approval by the audit committee may include audit services, audit related services, tax services and other services. The pre-approval requirement is waived with respect to the provision of non-audit services if (i) the aggregate amount of all such non-audit services provided to us constitutes not more than 5% of the total fees paid by us to our independent auditors during the fiscal year in which such non-audit services were provided, (ii) such services were not recognized at the time of the engagement to be non-audit services, and (iii) such services are promptly brought to the attention of the Audit Committee or by one or more of its members to whom authority to grant such approvals has been delegated by the Audit Committee. During fiscal 2022 and 2021, 100% of the audit related services, tax services and all other services provided by KCCW Accountancy Corp. for the periods as our principal independent registered public accountant were pre-approved by the Audit Committee.

	Fiscal Years Ended August 31,	
	2022	2021
Audit Fees	\$ 178,000	\$ 173,000
Audit-Related Fees	—	—
Tax Fees	7,000	7,000
All Other Fees	—	17,000
Total	<u>\$ 185,000</u>	<u>\$ 197,000</u>

Audit Fees. This category includes the audit of our annual consolidated financial statements, review of our quarterly condensed consolidated financial statements and services that are normally provided by our independent auditors in connection with statutory and regulatory filings or engagements. This category also includes statutory audits required by the Tax Bureau of Taiwan for certain of our subsidiaries in Taiwan.

Tax Fees. The services for the fees disclosed in this category include tax return preparation and technical tax advice.

All Other Fees. The services for the fees disclosed in this category include permitted services other than those that meet the criteria above and represent fees related to our at-the-market equity program in fiscal year 2021.

The Audit Committee concluded that the provision of the non-audit services listed above is compatible with maintaining the independence of KCCW Accountancy Corp.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(2) Exhibits:

Exhibit No	Exhibit Title	Form	File No.	Exhibit	Filing Date	Filed Herewith
3.1	Amended and Restated Certification of Incorporation of Registrant	S-1/A	333-168624	3.1(c)	November 22, 2010	
3.2	Certificate of Amendment of Amended and Restated Certificate of Incorporation	8-K	333-168624	3.1	April 15, 2016	
3.3	Certificate of Amendment of Amended and Restated Certificate of Incorporation	8-K	333-168624	3.1	July 3, 2018	
3.4	Amended and Restated Bylaws of Registrant	S-1/A	333-168624	3.2(b)	November 22, 2010	
4.1	Form of Common Stock Certificate	S-1/A	333-168624	4.1	November 22, 2010	
4.2 (d)	Description of the Registrant's Securities Under Section 12 of the Exchange Act	10-K	001-34992	4.2(d)	November 20, 2019	
10.2†	2010 Equity Incentive Plan, as amended September 25, 2020	10-K	001-34992	10.2	November 17, 2020	
10.3†	Amended and Restated Employment Agreement with Trung T. Doan, dated March 15, 2005	S-1	333-168624	10.3	August 6, 2010	
10.4†	SemiLEDs Corporation 2010 Equity Incentive Plan, Stock Unit Grant Agreement (Director Form)	8-K	001-34992	99.1	February 9, 2012	
10.5†	SemiLEDs Corporation 2010 Equity Incentive Plan, Form of Stock Unit Agreement (Officer Form)	8-K	001-34992	99.1	February 24, 2012	
10.6	Form of Proprietary Information and Inventions Agreement	S-1/A	333-168624	10.8	September 14, 2010	
10.7	Form of Non-competition Agreement	S-1/A	333-168624	10.9	September 14, 2010	
10.8†	Form of Option Agreement for the 2010 Equity Incentive Plan	S-1/A	333-168624	10.10	November 16, 2010	
10.9†	Form of Indemnification Agreement with directors and officers	S-1/A	333-168624	10.11	October 26, 2010	
10.10	Loan Agreement dated January 8, 2019 between SemiLEDs Corporation and Trung Doan	10-Q	001-34992	10.1	January 11, 2019	
10.11	Loan Agreement dated January 8, 2019 between SemiLEDs Corporation and J. R. Simplot Company	10-Q	001-34992	10.2	January 11, 2019	
10.12	The First Loan Agreement between Mega International Commercial Bank and SemiLEDs Optoelectronics Co., Ltd. dated July 5, 2019 (translation)	10-K	001-34992	10.12	November 20, 2019	

10.13	The Second Loan Agreement between Mega International Commercial Bank and SemiLEDs Optoelectronics Co., Ltd. dated July 5, 2019 (translation)	10-K	001-34992	10.13	November 20, 2019	
10.14	Amendment to Convertible Unsecured Promissory Note dated May 26, 2021 to Trung Doan	10-K	001-34992	10.14		
10.15	Amendment to Convertible Unsecured Promissory Note dated May 26, 2021 to Simplot Taiwan Inc.	10-K	001-34992	10.15		
10.16	Second Amendment to Convertible Unsecured Promissory Note dated May 26, 2022 between SemiLEDs Corporation and Simplot Taiwan Inc.	8-K	001-34992	1.1	May 26, 2022	
10.17	Second Amendment to Convertible Unsecured Promissory Note dated May 26, 2022 between SemiLEDs Corporation and Trung Doan	8-K	001-34992	1.2	May 26, 2022	
21	Subsidiaries of the Registrant					X
23.1	Consent of KCCW Accountancy Corp, Independent Registered Public Accounting Firm					X
31.1	Certification of Chief Executive Officer Pursuant to Exchange Act Rule 13a-14(a)/15d-14(a)					X
31.2	Certification of Chief Financial Officer Pursuant to Exchange Act Rule 13a-14(a)/15d-14(a)					X
32.1*	Certification of the Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
32.2*	Certification of the Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
101.INS	Inline XBRL Instance Document					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document					X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)					X
†	Management contract or compensatory arrangement					
*	This certification is deemed not filed for purposes of Section 18 of the Exchange Act, or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act or the Exchange Act.					

Item 16. Form 10-K Summary

None.

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.

Date: November 8, 2022

SemiLEDs Corporation

By: /s/ TRUNG TRI DOAN
 Trung Tri Doan
 Chairman and 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 dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u> /s/ TRUNG TRI DOAN </u> Trung Tri Doan	Chairman and Chief Executive Officer (Principal Executive Officer)	November 8, 2022
<u> /s/ CHRISTOPHER LEE </u> Christopher Lee	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	November 8, 2022
<u> /s/ SCOTT R. SIMPLOT </u> Scott R. Simplot	Director	November 8, 2022
<u> /s/ DR. EDWARD KUAN HSIUNG HSIEH </u> Dr. Edward Kuan Hsiung Hsieh	Director	November 8, 2022
<u> /s/ GOUGH WALTER MICHAEL </u> Gough Walter Michael	Director	November 8, 2022
<u> /s/ ROGER LEE </u> Roger Lee	Director	November 8, 2022

SEMILEDS CORPORATION
SCHEDULE II— VALUATION AND QUALIFYING ACCOUNTS

	Years Ended August 31,	
	2022	2021
	(In thousands)	
Allowance for Doubtful Accounts (Including Related Parties):		
Beginning balance	\$ 199	\$ 187
Charged to bad debt expense	126	—
Write-downs charged against the allowance		
Effect of exchange rate changes	(19)	12
Ending balance	\$ 306	\$ 199

	Years Ended August 31,	
	2022	2021
	(In thousands)	
Valuation Allowance for Deferred Tax Assets:		
Beginning balance	\$ 33,781	\$ 32,254
Charged to income tax expense	(2,932)	(78)
Net operating loss carryforward expired	(3,405)	(368)
Effect of exchange rate changes	(4,934)	1,973
Ending balance	\$ 22,510	\$ 33,781

Subsidiaries of the Registrant

Name	Jurisdiction of Incorporation	Percentage of Our Ownership Interest
Majority Owned Subsidiaries:		
SemiLEDs Optoelectronics Co., Ltd.	Taiwan	100.00 %
Helios Crew Corporation	Delaware	100.00 %
Taiwan Bandaoti Zhaoming Co., Ltd. (Silicon Base Development, Inc.)	Taiwan	97.37 %

Consent of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of SemiLEDs Corporation:

We consent to the incorporation by reference in the registration statements (Nos.333-171107, 333-197417 and 333-251372) on Form S-8 and the registration statement (No. 333-256613) on Form S-3 of SemiLEDs Corporation of our report dated November 7, 2022, with respect to the consolidated balance sheet of SemiLEDs Corporation and its subsidiaries as of August 31, 2022 and 2021, and the related consolidated statements of operations, comprehensive loss, changes in equity and cash flows, and the related consolidated financial statement schedules for the years ended August 31, 2022 and 2021, which report appears in the August 31, 2022 annual report on Form 10-K of SemiLEDs Corporation. Our report dated November 7, 2022 contains an explanatory paragraph that states that the Company has suffered recurring losses from operations, has not generated sufficient net cash flows from operating activities and has an accumulated deficit, which raise substantial doubt about its ability to continue as a going concern. The consolidated financial statements and financial statement schedule do not include any adjustments that might result from the outcome of that uncertainty.

/s/ KCCW Accountancy Corp.

Diamond Bar, California
November 7, 2022

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, Trung Tri Doan, certify that:

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

Dated: November 8, 2022

/s/ Trung Tri Doan

Name: Trung Tri Doan

Title: Chairman and Chief Executive Officer

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, Christopher Lee, certify that:

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

Dated: November 8, 2022

/s/ Christopher Lee

Name: Christopher Lee

Title: Chief Financial Officer

**CERTIFICATION
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 SemiLEDs Corporation (the “Registrant”) on Form 10-K for the year ended August 31, 2022 as filed with the Securities and Exchange Commission as of the date hereof (the “Report”), I, Trung Tri Doan, Chairman and Chief Executive Officer of the Registrant, hereby certify pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 that:

- (1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Registrant.

Dated: November 8, 2022

/s/ Trung Tri Doan

Name: Trung Tri Doan

Title: Chairman and Chief Executive Officer

**CERTIFICATION
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 SemiLEDs Corporation (the “Registrant”) on Form 10-K for the year ended August 31, 2022, as filed with the Securities and Exchange Commission as of the date hereof (the “Report”), I, Christopher Lee, Chief Financial Officer of the Registrant hereby certify pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002 that:

- (1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Registrant.

Dated: November 8, 2022

/s/ Christopher Lee

Name: Christopher Lee

Title: Chief Financial Officer

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