

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

FORM 10-K

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

For the Fiscal Year December 31, 2023

or

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

Commission file number: 000-32929

PERASO INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

77-0291941

(IRS Employer
Identification Number)

2309 Bering Drive

San Jose, California 95131

(Address of principal executive offices)

(408) 418-7500

(Registrant's telephone number, including area code)

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 \$0.001 per share	PRSO	The Nasdaq Stock Market, LLC

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

Title of each class	Name of each exchange on which registered
Series AA Preferred Stock, par value \$0.01 per share	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, a smaller reporting company, or 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 checked="" 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. ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant, based on the closing price of the shares of common stock on the Nasdaq Stock Market on June 30, 2023 was \$11,913,739.

The number of outstanding shares of the Registrant's exchangeable shares, no par value, was 95,093 as of March 18, 2024.

The number of shares of the Registrant's common stock outstanding, par value \$0.001 per share, as of March 18, 2024, was 2,161,160.

**ANNUAL REPORT ON FORM 10-K
FOR THE YEAR ENDED DECEMBER 31, 2023**

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND OTHER INFORMATION CONTAINED IN THIS REPORT

This Annual Report on Form 10-K, or this Report, and the documents incorporated herein by reference contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), which include, without limitation, statements about the market for our products, technology, our strategy, competition, expected financial performance and other aspects of our business identified in this Report, as well as other reports that we file from time to time with the Securities and Exchange Commission, or SEC. Any statements about our business, financial results, financial condition and operations contained in this Report that are not statements of historical fact may be deemed to be forward-looking statements. These forward-looking statements represent our intentions, plans, expectations, assumptions and beliefs about future events and are subject to risks, uncertainties and other factors, including those described in Part I., Item 1A, "Risk Factors" in this Report. Without limiting the foregoing, the words "believes," "anticipates," "expects," "intends," "plans," "projects," or similar expressions are intended to identify forward-looking statements. Our actual results could differ materially from those expressed or implied by these forward-looking statements as a result of various factors, including the risk factors described in Part I., Item 1A, "Risk Factors," and elsewhere in this Report. We undertake no obligation to update publicly any forward-looking statements for any reason, except as required by law, even as new information becomes available or other events occur in the future.

Peraso®, MoSys®, 1T-SRAM® and Bandwidth Engine® are registered trademarks of Peraso Inc. PERSPECTUS™ is a trademark of Peraso Inc.

Unless expressly indicated or the context requires otherwise, the terms "Peraso," the "Company," "we," "us" or "our" in this Report refer to Peraso Inc., a Delaware corporation, and, where appropriate, its subsidiaries.

Note Regarding Reverse Stock Split

We effected a reverse stock split of our outstanding common stock at a ratio of 1-for-40, effective as of January 2, 2024, for the purpose of complying with Nasdaq Listing Rule 5550(a)(2). We have reflected the reverse stock split herein, unless otherwise indicated.

Part I

Item 1. Business.

Overview

We are a fabless semiconductor company focused on the development and sale of: i) millimeter wavelength wireless technology, or mmWave, semiconductor devices and antenna modules based on our proprietary semiconductor devices and ii) performance of non-recurring engineering, or NRE, services and licensing of intellectual property, or IP. Our primary focus is the development of mmWave, which is generally described as the frequency band from 24 Gigahertz, or GHz, to 300 GHz. Our mmWave products enable a range of applications including: multi-gigabit point-to-point, or PtP,

wireless links with a range of up to 25 kilometers and operating in the 60 GHz frequency band; multi-gigabit point-to-multi-point, or PtMP, links in the 60 GHz frequency band used to provide fixed wireless access, or FWA, services; FWA in the 5G operating bands from 24 GHz to 43 GHz to provide multi-gigabit capability and low latency connections; military communications; and consumer applications, such as high performance wireless video streaming and untethered augmented reality and virtual reality. We also have a line of memory-denominated integrated circuits, or ICs, for high-speed cloud networking, communications, security appliance, video, monitor and test, data center and computing markets that deliver time-to-market, performance, power, area and economic benefits for system original equipment manufacturers, or OEMs. As discussed below, we initiated an end-of-life of these products in 2023.

Business Combination

We were formerly known as MoSys, Inc., or MoSys. On September 14, 2021, we and our subsidiaries, 2864552 Ontario Inc. and 2864555 Ontario Inc., entered into an Arrangement Agreement, or the Arrangement Agreement, with Peraso Technologies Inc., or Peraso Tech, a privately-held corporation existing under the laws of the province of Ontario, to acquire all of the issued and outstanding common shares of Peraso Tech, or the Peraso Shares, including those Peraso Shares to be issued in connection with the conversion or exchange of secured convertible debentures and common share purchase warrants of Peraso Tech, as applicable, by way of a statutory plan of arrangement, or the Arrangement, under the Business Corporations Act (Ontario). On December 17, 2021, following the satisfaction of the closing conditions set forth in the Arrangement Agreement, the Arrangement was completed, and we changed our name from MoSys to "Peraso Inc." and began trading on The Nasdaq Stock Market, or the Nasdaq, under the symbol "PRSO." Certain previous shareholders of Peraso Tech elected to convert their Peraso Tech common stock into exchangeable shares in 2864555 Ontario Inc., one of our wholly-owned subsidiaries. These exchangeable shares, which can be converted into our common stock at the option of the holder, are similar in substance to our common stock.

Industry Trends and Market Opportunities

mmWave

Historically, virtually all wireless communications has utilized the frequency spectrum below 6 GHz. Primary examples include cell phone communications, WiFi, Bluetooth, Internet of Things, or IoT, and more recently, broadband internet access or FWA. In parallel, a broad array of applications continues to push the boundaries of available wireless network capacity. These include video streaming services, such as those offered by Netflix, Apple and Amazon, user-generated video content, such as TikTok and Instagram Reels, and broadly, personal video content generated by personal mobile devices.

While the sub-6 GHz band has traditionally been sufficient for these services, with growing demand, the industry is migrating towards mmWave spectrum as an additional source of wireless capacity. Wireless spectrum is an extremely valuable commodity and is highly regulated by federal governments around the world. Spectrum is broadly segmented into either licensed frequencies or unlicensed frequencies, although most frequencies are licensed. This holds true for mmWave frequencies between 24 GHz and 100 GHz. In the case of mmWave, the 3rd Generation Partnership Project, or 3GPP, has included the spectrum from 24 GHz to 43 GHz in its 5G specification. This is licensed spectrum in most jurisdictions around the world, and carriers must license this spectrum if they choose to utilize the mmWave frequency bands within that spectrum. Alternatively, the spectrum from 57 GHz to 71 GHz is generally unlicensed around the world, and, therefore, a license is not required to operate in this spectrum. To that end, the Institute of Electrical and Electronics Engineers, or IEEE, has established two standards which utilize this unlicensed mmWave spectrum, IEEE 802.11ad and IEEE 802.11ay. Peraso has developed silicon products that comply with both the licensed and unlicensed standards.

IEEE 802.11ad/ay: License-Free mmWave Market

A primary opportunity for our mmWave products in unlicensed-band applications is the FWA market. In this market segment, wireless Internet service providers, or WISPs, provide their customers with a fixed wireless link to a base station or small cell, thus providing the customer with high-speed access to the Internet. mmWave can provide both upload and download speeds of over 1 Gbps. In addition, we believe mmWave can be a less expensive alternative to installing fiber and allows FWA carriers a competitive advantage against other access technologies, such as cable broadband. From an equipment perspective, this worldwide market has historically been serviced by FWA OEMs, such as Ubiquiti Inc., or Ubiquiti, Cambium Networks, Ltd. and SIA MikroTik. WISPs are addressing a segment of the broadband market not served by the traditional carriers, or, in some cases, underserved by the carriers.

The FWA market has been helped in recent years with the advent of government incentives aimed at closing the so-called 'digital divide' between urban and rural broadband access. The WISP market is experiencing strong growth. According to *The 2021 Fixed-Wireless and Hybrid ISP Industry Report* prepared by the Carmel Group, the number of subscribers that WISP providers serve in the United States is expected to grow from 6.9 million at the end of 2020 to 12.7 million by the end of 2025. Additionally, the U.S. government has allocated significant support for the improvement of broadband access to underserved and unserved communities. In 2020, the U.S. Federal Communications Commission, or FCC, established the Rural Digital Opportunity Fund, or RDOF, to award up to \$20.4 billion for the development of improved broadband in rural communities. In 2023, the U.S. government established the Broadband Equity, Access, and Deployment, or BEAD, program, which has allocated \$42.45 billion to expand high-speed Internet access by funding planning, infrastructure deployment and adoption programs in all 50 states.

A related opportunity for us in the license-free FWA space is dense urban markets, many of which have a high saturation of informal settlements. As of August 2023, the World Economic Forum estimates there are over 1.1 billion people living in informal settlements around the world. Traditional last mile technology, such as WiFi, is not able to handle the congestion of users in such communities. This is because WiFi radio signals spread out in all directions, much like a bare incandescent light bulb. Due to the very high population density in informal settlements, many WiFi transmitters are required, and as such, tend to cancel each other out with overlapping signals. Because our mmWave technology utilizes beamforming, the signals are more like beams from a car headlight, very narrow and controlled. Therefore, in a dense environment, mmWave is much better at handling high congestion, as the radio signals generally do not overlap. Another advantage our mmWave technology provides in the dense urban environment is reduced power consumption. The power grid in an informal settlement can often be unreliable. Our technology can operate under 12 watts, which enables communications networks to continue to operate on a backup battery power supply for several hours.

An additional market for Peraso 60GHz mmWave products is military applications. Specifically, as a result of our RF beamforming and beamsteering capability, the military is considering the use of mmWave for stealth tactical communications. Unlike traditional wireless technology that radiates equally in all directions (omni), mmWave technology utilizes phased-array RF beams to focus the RF energy into a specific intensity and direction. The military refers to mmWave as an inherently stealthy protocol – Low Probability of Interception (LPI)/Low Probability of Detection (LPD)/Anti-Jamming (AJ). An additional benefit of using the 60GHz spectrum, is since this band is generally unlicensed around the world, these communications will not interfere with locally licensed spectrum. Also, as our devices operate at under 12 watts, a light battery can be used for simple deployment in combat settings. Further, as our mmWave technology can support gigabit speeds, military personnel are able to transmit and receive information in a timely manner. In 2023, we were awarded a proof-of-concept license and technology development contract to enable mmWave-based communications between soldiers and their vehicle.

Our 60 GHz products can also be applied to consumer applications, as we believe our technology can provide key advantages to this market.

For example, we are targeting the high-performance, video-streaming market, specifically the virtual reality, or VR, market. In its market report, *Virtual Reality Data: Devices, Verticals, and Value Chain – 1Q 2022*, ABI Research estimates a market opportunity of over 6 million VR headsets by the end of 2025, which we believe translates into a total available market for us in 2025 of approximately \$180 million, assuming an average selling price to us of \$30 for an antenna module included in each VR headset. Uses of VR are envisioned in a broad variety of markets, including gaming, real estate, healthcare, and transportation. We believe that our mmWave technology has certain characteristics that are ideal for VR applications. First, mmWave's high data rate of 3 Gbps supports high-resolution displays. Second, our proprietary beamforming and beamtracking techniques keep latency to under 5 milliseconds, or ms, so the user does not experience lags in the experience. Third, mmWave technology is less susceptible to interference and, as mentioned above in the context of dense urban environments, can operate in highly congested environments, which limits interruptions in the VR user's experience.

Other market opportunities for 60 GHz mmWave technology include transportation safety, factory automation, and railway communications.

3GPP: Licensed mmWave Market

The frequency band from 24 GHz to 43 GHz has been designated as the mmWave band in 5G communications. In the United States, this band is generally licensed to carriers by the FCC for expensive license fees that can reach billions of dollars. Carriers license this spectrum to ensure there is no interference from other carriers using the same frequencies. We believe that the primary benefit of mmWave to carriers is the availability of additional spectrum within the licensed band, to provide additional capacity to handle the growth of mobile users. In its report, *5G Millimeter Wave 2023*, Mobile Experts Inc. predicts that, based on current user growth predictions, U.S. carriers will saturate the capacity of their networks using existing spectrum by 2025, and will need to utilize mmWave to provide additional capacity.

Our initial target for licensed-band applications is the FWA segment, as carriers can utilize the additional network capacity offered by mmWave to provide FWA services. According to the *Ericsson Mobility Report*, as of November 2023, approximately 80% of mobile service providers have an FWA offering and 121 service providers offer FWA services over 5G, representing 50% of all FWA service providers. According to Mobile Experts Inc.'s report, *5G Millimeter Wave 2023*, mobile operators that have deployed 5G mmWave include Verizon, T-Mobile, AT&T, NTT DoCoMo, KDDI, Softbank and Rakuten Mobile. We believe major Chinese mobile carriers have commenced formal collaborations to advance mmWave solutions in the Chinese telecom market. Regarding U.S. carriers, FWA has become a bright spot for their 5G roll out. According to Light Reading, fixed wireless services accounted for over 90% of all net broadband customer additions in the U.S. during 2022. While U.S. carriers currently use the sub 6 GHz frequency band, eventually, as the network gets saturated, we believe the carriers will commence a broad roll out of mmWave technology. In terms of FWA market potential in the U.S., according to Fierce Wireless, T-Mobile is available to over 50 million homes, and Verizon is available to over 40 million homes. In addition to being used to provide FWA services, our mmWave antenna modules can be utilized in consumer-premises equipment or CPE, including hotspots, laptops and tablets. In its report, *5G Millimeter Wave 2023*, Mobile Experts Inc. forecasts a total volume of approximately 2 million mmWave-enabled CPE units by 2026.

5G mmWave has support from major industry players, such as Apple, which has incorporated mmWave wireless into substantially all versions of the iPhone for sale in the U.S. market. The basic premise is the ever-increasing demand for bandwidth. The initial use case for cellular service providers is to provide their customer base (primarily smart-phone customers) with continuity of network access in highly congested environments, such as sporting events, public beaches, music festivals or generally any large gathering where thousands of users are attempting to access the network simultaneously. We believe that mmWave will gain universal acceptance, as users will demand full continuity in terms of network access, and we are well positioned to address the mobile opportunity for mmWave, which is expected to present an order of magnitude increase in the total available market.

Memory

Our memory solutions deliver time-to-market, performance, power, area and economic benefits for system OEMs. Our Bandwidth Engine memory ICs integrate our proprietary, 1T-SRAM high-density embedded memory and a highly-efficient serial interface protocol resulting in a monolithic memory IC solution optimized for memory bandwidth and transaction access performance. Further performance benefits can be achieved to offload statistical, search or other custom functions using our optional integrated logic and processor elements. As discussed below, we initiated an end-of-life of these products in 2023.

Our Products

Our primary focus is the development, marketing and sale of our mmWave products.

mmWave ICs

Currently, there are two industry standards that incorporate mmWave technology for wireless communications: (i) license-free: IEEE 802.11ad/ay and (ii) licensed: 3GPP Release 15-17 (commonly referred to as 5G). We have developed and continue to develop products that conform to these standards. To date, we have not sold any 5G products.

Our first mmWave IC product line operates in the license-free 60 GHz band and conforms to the IEEE 802.11ad standard. This product line includes a baseband IC, several variations of mmWave radio frequency, or RF, ICs, and associated antenna technology.

Our 60 GHz IEEE802.11ad products have two very important advantages over traditional 2.4 GHz / 5 GHz Wi-Fi products: very high data rates (up to 3.0 Gigabits per second ("Gbps")) and low latency, i.e., less than 5 ms. The first application that had traction was outdoor broadband, including applications such as PtP backhaul links or FWA using PtMP links. As the spectrum is unlicensed (free), WISPs can provide services without having to procure expensive wireless spectrum licenses. We believe that our mmWave technology can be deployed quickly and cost effectively in rural and suburban environments, including in remote and low-income regions where residents often have poor Internet quality. While carriers can provide fiber access, the cost of fiber deployment can be prohibitive and trenching for fiber is time consuming and can limit the rate at which new subscribers are added. Our mmWave products enable WISPs to deploy broadband service using low-cost terminals and infrastructure and avoid the costs of deploying cable or fiber.

We are a leading supplier of semiconductors in the mmWave PtP and PtMP markets. We are currently shipping to leading equipment suppliers in this space, as well as directly to service providers that are building their own equipment. We believe we bring certain advantages to the market. First, our products support the spectrum from 66 GHz to 71 GHz, which is often referred to as channels 5 and 6 in the 802.11ad/ay specifications. The key advantage in supporting these channels is that the signals are able to propagate much further than channels 1 through 4; this is a result of significantly

lower oxygen absorption at frequencies above 66 GHz. To date, our FWA customers have achieved links in the range of 25 kilometers, which is substantially longer than any past 60 GHz links.

In the indoor area, the 802.11ad technology is ideal for high-speed, low-latency video applications. In indoor applications, our products can support 3Gb/s links with under 5 ms of latency. Example applications include:

- AR/VR links between the headset and the video console;
- USB video cameras for corporate video conferencing;
- wireless security cameras; and
- smart factory safety and surveillance.

Our mmWave ICs have been in volume production since 2018. A core competency of the Company is phased-array technology, or beamforming, in which an array of antenna elements work in unison to create a focused RF beam. Through adjustment of the relative phase of the antenna signals, the beams can be directed to support robust wireless connection. We are a leader in the production of mmWave devices and have pioneered a high-volume mmWave production test methodology using standard low-cost production test equipment. It has taken us several years to refine performance of this production test methodology, and we believe this places us in a leadership position in addressing operational challenges of delivering mmWave products into high-volume markets.

Our second product line addresses the 5G mmWave opportunity. Given our extensive experience in the development of mmWave technology, 5G mmWave is a logical adjacent and larger market. We have commenced sampling a highly integrated 5G mmWave beamformer IC, which operates from the 24 GHz to 43 GHz frequency range. The device supports dual-stream multiple input, multiple output, or MIMO, with two 16-channel beamforming arrays. In June 2023, we announced a collaboration with pSemi, a Murata company, for the development of a 5G customer premise receiver utilizing our beamformer IC and pSemi's up-down converter IC. The goals of the collaboration are to reduce the number of components and cost of each RF module to promote faster time to market for more rapid deployment by prospective customers.

mmWave Antenna Modules

In the second half of 2021, we augmented our business model to produce and sell complete mmWave antenna modules for license-free 60 GHz applications. The primary advantage provided by our antenna modules is that our proprietary mmWave ICs and the antenna are integrated into a single device. A differentiating characteristic of mmWave technology is that the RF amplifiers must be as close as possible to the antenna to minimize loss. With our module, we can guarantee the performance of the amplifier/antenna interface and simplify customers' RF engineering, facilitating more opportunities for customer prospects that have not provided RF-type systems, as well as shortening the time to market for new products. It is possible for third parties to provide competitive module products, but, because we utilize our mmWave ICs and incorporate our proprietary mmWave antenna IP, we can provide a highly-competitive solution based on our internally-owned and developed module components.

During 2022, we launched our PERSPECTUS family of mmWave antenna modules to enable WISPs to offer high-capacity FWA networks in the unlicensed 60-GHz spectrum. The PERSPECTUS product family includes a new generation of integrated 60 GHz mmWave antenna modules and enhanced software for PtMP FWA applications. Our PERSPECTUS products allow rapid development of low-cost network equipment utilizing over 14 GHz of spectrum to provide multi-gigabit access services. Leveraging our integrated phased-array antennas and operating in the upper channels of the band, link ranges from 1.5 kilometers up to extended ranges of 30 kilometers can be achieved using a parabolic reflector.

Additionally, we have established an innovative user arbitration protocol called DUNE that is specifically designed to optimize network performance in dense urban environments using our PERSPECTUS antenna modules. DUNE is a result of our decade-long experience in mmWave technology and in-house development of the intellectual property incorporated in media access control, which controls the hardware, the physical layer, which controls the physical connection and software drivers, as well as novel antenna designs and beamforming algorithms. DUNE takes a multi-level approach to reducing contention and interference by incorporating both physical, e.g. antenna and beamforming, and protocol-level innovations.

Memory

Our memory products comprise our Bandwidth Engine ICs, which are memory-dominated ICs that were designed to be i) high-performance companion ICs to packet processors and ii) targeted for high-performance applications where throughput is critical. These products integrate our proprietary, 1T-SRAM high-density embedded memory and a highly-efficient serial interface protocol resulting in a monolithic memory IC solution optimized for memory bandwidth and transaction access performance. Taiwan Semiconductor Manufacturing Corporation, or TSMC, is the sole foundry that manufactures the wafers used to produce our memory IC products. TSMC has informed us that it would be discontinuing the foundry process used to produce wafers, in turn, necessary to manufacture our memory ICs. As a result, in May 2023, we initiated an end-of-life, or EOL, of our memory IC products. We notified our customers to provide purchase orders by December 22, 2023, and we commenced initial EOL shipments during the quarter ended September 30, 2023. We have requested customers to pay a deposit upon purchase order placement to reserve supply and provide funding for our required inventory purchases. In addition, we have requested customers to accelerate payments to improve our cash flows. Under our EOL plan, we expect shipments of our memory products to continue until at least December 31, 2024. However, the timing of EOL shipments will be dependent on receipt of purchase orders from customers, deliveries from our suppliers, and the delivery schedules requested by our customers. As of March 1, 2024, we have received EOL purchase orders totaling approximately \$14.0 million, of which \$3.7 million of these orders were shipped during 2023.

Research and Development

Our ability to compete in the future depends on successfully improving our technology to meet the increasing demand for higher performance and lower cost solutions. Development of new IC products requires specialized chip design and product engineers, expensive computer-aided design software licenses, and significant fabrication and testing costs, including mask costs.

We have over 14 years of technical know-how in the design and manufacturing of mmWave technology. The most important aspect of this knowledge is knowing how mmWave circuits will perform in a real-world environment. Traditionally, semiconductor design utilizes sophisticated computer-aided design software to simulate the performance of a device that is manufactured at a specific semiconductor manufacturing plant. However, mmWave is extremely difficult to model precisely. Therefore, the only path to understand how well a device will perform is to produce the device and test

it in a real-world application. Over the last decade, many companies have attempted to develop mmWave semiconductor devices, however, given that the devices had inconsistent or weak performance, a number of the companies were unsuccessful and abandoned their design and product development efforts. As an example of our leadership and expertise in the development of mmWave technology, we were an active participant in the development of the IEEE 802.11ay wireless specification and, to date, have been granted nine essential claims patents with respect to this standard.

At a system level, there are additional technical challenges presented by mmWave technology that we have overcome and form a key part of our internal know-how. For example, a key technology of mmWave is the concept of beamforming and beam steering using a phased-array antenna. This technology is utilized to concentrate the RF energy into a narrow beam to improve the range and coverage of mmWave devices. We have developed effective beamforming and beam steering technology for phased-array circuits and antennas. While there are many academic examples of successful phased-array implementations, there is a vast barrier between a "laboratory" version of phased-array technology and a version that is deployed for commercial use. One such aspect is the implementation of the beamforming procedure, which seeks to maximize throughput and do so while not impacting latency. While the details of achieving this are complex, it is important-intellectual property that we have gained through real-world experience.

mmWave is not without challenges, as mmWave signals do not typically travel as far as traditional wireless signals and are more attenuated by solid objects. Mitigation strategies must be deployed, particularly with regard to the management of signal propagation. Whereas traditional wireless devices utilize a broad, omni-antenna pattern, mmWave systems rely on phased-array technology, which focusses the radio signal into a narrow beam to improve propagation characteristics. We consider ourselves to be a global leader in implementing these sophisticated radio systems and one of the few providers in the market successfully shipping phased-array devices in mass production.

While we have developed products for the 60 GHz and 5G mmWave markets, we believe there are other market opportunities that could utilize mmWave technology. For example, in the WiFi Alliance there is a pending proposal to utilize mmWave technology in WiFi 8, which is the next generation of WiFi technology. We believe this proposal is primarily driven by the anticipated use of mmWave to support VR applications, which require very high data rates, and to reduce congestion in multi-dwelling units. In the mobile carrier market, there is some early research in the use of terahertz technology to make even more spectrum available for network capacity. While the proposed frequencies are higher than mmWave (above 100 GHz), we believe that many of our technological developments, particularly our beamforming and beamsteering concepts, can be applied to terahertz technology.

With regard to our memory products, we have ceased and do not intend to expend any development efforts or funds to develop new memory products. We believe our Bandwidth Engine IC products will provide us with meaningful revenue and gross margin contributions through at least the end of 2024, as we complete the EOL of these products. We intend to continue to devote substantially all of our research and development efforts toward further expanding our mmWave technology portfolio and expanding our product offerings.

Sales and Marketing

In addition to our direct sales personnel, we sell through sales representatives and distributors in the United States, Asia and Europe. Our distributors have a global presence with offices and technical selling and applications engineering capabilities, which we believe will enable us to reach new potential customers for our products.

We also have applications engineers who support our customer engagements and engage with the customers' system architects and designers to propose and implement our products and solutions to address system design challenges and improve performance.

In the markets we serve, the time from a design win to production volume shipments of our IC products can range from 12 to 36 months. We believe that networking, wireless and wired communication and security appliance systems can have a product life from a few years to over 10 years once a product like ours has been designed into the system. Historically, our revenue has been highly concentrated, with a few customers accounting for a significant percentage of our total revenue.

In the FWA market, our primary customer base is OEMs, but we also have multiple WISP customers in the U.S. and Canada. Our OEM customers in the fixed wireless space include Ubiquiti, WeLink, which operates as both an OEM and a WISP, Tachyon Networks, or Tachyon, and China Unicom. Ubiquiti, an OEM in the unlicensed fixed wireless space, relies on us as its sole source mmWave IC supplier for its "Wave" products, which Ubiquiti introduced in 2022. Ubiquiti introduced three new Wave models in 2023. WeLink has relied on us as its sole source supplier for WeLink designed equipment used to deliver WISP residential service since 2022. WeLink currently deploys 60 GHz technology in multiple U.S. cities, including Las Vegas, Dallas and Los Angeles. Tachyon utilizes our mmWave antenna modules in its TNA-30X family of PtP and PtMP solutions for 60 GHz unlicensed FWA networks. Peraso and Tachyon jointly announced production readiness of the TNA-30X product family in June 2023. Finally, China Unicom is a Chinese mobile carrier that uses our 60 GHz technology for 5G PtP backhaul. In addition to OEMs, we have partnered with several WISPs in the U.S. and Canada that have deployed our 60 GHz technology, including WeLink. We continue to focus on securing new OEM and WISP customers.

During the year ended December 31, 2023, three customers accounted for 10% or more of our net revenues, including Nokia Corporation at 35%, F5/Flextronics at 22% and Altek Technology Corp at 18%. During the year ended December 31, 2022, four customers accounted for 10% or more of our net revenues, including Nokia Corporation at 26%, WeLink Communications LLC, or WeLink, at 21%, CEAC International Limited, or CEAC, a distributor selling to Ubiquiti, at 16%, and F5, Inc. at 11%.

Intellectual Property

We regard our patents, copyrights, trademarks, trade secrets and similar intellectual property as critical to our success and rely on a combination of patent, trademark, copyright, and trade secret laws to protect our proprietary rights.

As of March 1, 2024, we held 96 United States patents and 67 foreign patents on various aspects of our mmWave, antenna, memory and other technology, with expiration dates ranging from 2025 to 2041. We also held 13 pending patent applications in the United States and abroad. There can be no assurance that others will not independently develop or patent similar or competing technology or design around any patents that may be issued to us, or that we will be able to successfully enforce our patents against infringement by others.

We were also an active participant in the development of the IEEE 802.11ay wireless specification and, to date, have been granted nine essential claims patents with respect to this standard. Essential claims patents are of particular value as a specification cannot be implemented without obtaining a license to the patents from us.

The semiconductor industry is characterized by frequent litigation regarding patent and other intellectual property rights. Our IC customers, licensees or we might, from time to time, receive notice of claims that we have infringed patents or other intellectual property rights owned by others. Our successful protection of our patents and other intellectual property rights and our ability to make, use, import, offer to sell, and sell products free from the intellectual property rights of others are subject to a number of factors, particularly those described in Part I, Item 1A, "Risk Factors."

Competition

mmWave

mmWave circuit and system design is a highly specialized engineering skill, as mmWave is a challenging technology to ship in mass production. At frequencies above 24 GHz, circuits are extremely vulnerable to small variances in the semiconductor manufacturing process. Designing circuits that minimize susceptibility to these variances takes years of development, and we believe we are one of the few companies in the world that is skilled in mmWave design. Further, we have shipped mmWave devices in volume, and ensuring all devices sold adhere to strict performance standards is a core competency we have developed. In addition, we have developed our own mmWave phased-array antenna technology, which allows us to be highly competitive in terms of overall system cost. Our customers do not need to engage with third-party antenna suppliers, thus eliminating the additional cost for a third-party antenna.

Unlicensed IEEE 802.11ad/ay Market:

Our primary competitor in the IEEE802.11ad/ay market is Qualcomm. The primary benefit that we provide to the market is the support of the higher frequency bands from 66 GHz to 71 GHz. The advantage at these frequencies is that oxygen attenuation is significantly reduced, and signals can travel much further.

We also have key points of differentiation compared to Qualcomm for wireless video devices. We are well positioned in this market, as we have USB 3.0 built into our devices, so our products generally support USB architectures. A prime example is the replacement of the USB cable with a wireless version using our technology. There are many applications where this can be of use, including USB web cams, wireless displays, and AR/VR headsets. We have invested significant software resources into providing the market with wireless USB solutions, and we believe there is no other mmWave vendor in the world that can offer multi-gigabit solutions as a replacement for wired USB.

Licensed 5G Market:

With 5G, our efforts are focused on the mmWave RF front-end phased-array component of the system. The 5G product instantiation is an RF module utilizing our proprietary intellectual property. Key elements of our mmWave intellectual property include:

- RF circuits;
- phased-array antenna; and
- in-system circuit calibration, beam forming, and real-time system monitoring.

From a competitive perspective, we believe we are currently the only pure-play, 5G vendor to offer a dual-band (28/39 GHz) RF solution for the FWA market. Qualcomm does offer a 5G RF solution for the FWA market, however its solution is based on aggregating its mobile RF solution, which we believe requires several compromises in terms of cost, performance, and power consumption. With an initial focus on FWA, we can derive advantages by optimizing our silicon for that specific market. Furthermore, we have achieved traction in the unlicensed, 60 GHz, FWA market, and we believe we will be able to transfer all of our knowledge gained from the 60 GHz market to the 5G market. However, this market opportunity is more competitive, and potential competitors, in addition to Qualcomm, include MediaTek Inc. and Samsung Electronics Co., Ltd.

Manufacturing

We depend on third-party vendors to manufacture, package, assemble and test our IC and module products, as we do not own or operate a semiconductor fabrication, packaging or production testing facility. By outsourcing manufacturing, we can avoid the high cost associated with owning and operating our own facilities, allowing us to focus our efforts on the design and marketing of our products.

We perform an ongoing review of our product manufacturing and testing processes. Our IC products are subjected to extensive testing to assess whether their performance meets design specifications. Our test vendors provide us with immediate test data and the ability to generate characterization reports that are made available to our customers.

Employees

As of December 31, 2023, we had 48 employees, including 13 located in the United States and 35 located in Canada. Our headcount consisted of 34 in research and development and manufacturing-related operations and 14 in sales, marketing and general and administrative functions. These headcount amounts exclude employees in Canada that were placed on temporary lay-off in November 2023. We believe our current headcount is adequate to conduct our business.

Available Information

We were founded in 1991 and reincorporated in Delaware in 2000. Our website address is www.perasoinc.com. The information in our website is not incorporated by reference into this report. Through a link on the Investor section of our website, we make available our annual reports 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(a) or 15(d) of the Exchange Act, as soon as reasonably practicable after they are filed with, or furnished to, the SEC. You can also read any materials submitted electronically by us to the SEC on its website (www.sec.gov), which contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including us.

Item 1A. Risk Factors.

The following risks could materially and adversely affect our business, financial condition, cash flows, and results of operations, and could cause the trading price of our common stock to decline. These risk factors do not identify all of the risks that we face. Our operations could also be affected by factors that are not presently known to us or that we currently consider to be immaterial to our operations. Due to risks and uncertainties, known and unknown, our past financial results may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. Refer also to the other information set forth in this Report, including in Part II, Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations*, as well as our Consolidated Financial Statements and the related notes in Part II, Item 15.

Summary of Risk Factors

The following summarizes the risks and uncertainties that could materially adversely affect our business, financial condition, results of operation and stock price. You should read this summary together with the more detailed description of each risk factor contained below.

- We intend to discontinue the production of our memory products.
- We have a history of losses, and we will need to raise additional capital.
- Our failure to generate the significant capital necessary or raise additional capital to expand our operations and invest in new products could reduce our ability to compete and could harm our business.
- We may fail to achieve the intended cost savings and related benefits from our reduction in workforce and temporary lay-offs.
- Our failure to successfully market our products could seriously harm our ability to execute our business strategy and may force us to curtail our research and development plans or existing operations.

- Future revenue growth depends on our winning designs with existing and new customers, retaining current customers, and having those customers design our solutions into their product offerings and successfully selling and marketing such products. If we do not continue to win designs in the short term, our product revenue in the following years will not grow.
- To date, we have not achieved the anticipated benefits of a fabless semiconductor company.
- Our main objective is the development and sale of our technologies to service providers, cloud networking, security, test and video system providers and their subsystem and component vendors and, if demand for these products does not grow, we may not achieve revenue growth and our strategic objectives.
- Our failure to continue to develop new products and enhance our products on a timely basis could diminish our ability to attract and retain customers.
- Our products have a lengthy sales cycle, which makes it difficult to predict success in this market and the timing of future revenue.
- The semiconductor industry is cyclical in nature and subject to periodic downturns, which can negatively affect our revenue.
- Our revenue has been highly concentrated among a small number of customers, and our results of operations could be harmed if we lose a key revenue source and fail to replace it.
- Our revenue concentration may also pose credit risks which could negatively affect our cash flow and financial condition.
- Our products must meet exact specifications and defects and failures may occur, which may cause customers to return or stop buying our products.
- Because we sell our products on a purchase order basis and rely on estimated forecasts of our customers' needs, inaccurate forecasts could adversely affect our business.
- We rely on independent foundries and contractors for the manufacture, assembly, testing and packaging of our integrated circuits and modules, and the failure of any of these third parties to deliver products or otherwise perform as requested could damage our relationships with our customers and harm our sales and financial results.
- Disruptions in our supply chain due to shortages in the global semiconductor supply chain could cause delays for customers and impact revenue.
- Any claim that our products or technology infringe third party IP rights could increase our costs of operation and distract management and could result in expensive settlement costs or the discontinuance of our technology licensing or product offerings. In addition, we may incur substantial litigation expense which would adversely affect our profitability.
- The discovery of defects in our technology and products could expose us to liability for damages.
- We might not be able to protect and enforce our IP rights which could impair our ability to compete and reduce the value of our technology.
- Third parties might attempt to gain unauthorized access to our network or seek to compromise our products and services.
- There may be future sales of our common stock, which could adversely affect the market price of our common stock and dilute a stockholder's ownership of common stock.
- Provisions of our certificate of incorporation and bylaws or Delaware law might delay or prevent a change-of-control transaction and depress the market price of our stock.
- If we are unable to satisfy the continued listing requirements of the Nasdaq, our common stock could be delisted and the price and liquidity of our common stock may be adversely affected.

We might not be able to continue as a going concern.

Our consolidated financial statements as of December 31, 2023 have been prepared under the assumption that we will continue as a going concern for the next twelve months. As of December 31, 2023, we had cash and cash equivalents of \$1.6 million and an accumulated deficit of \$166.0 million. In February 2024, we completed a public offering of our common stock and warrants for net proceeds of approximately \$3.4 million. We believe

that the net proceeds that we received from our February 2024 offering, together with our existing cash and cash equivalents, will enable us to meet our capital needs through at least the fourth quarter of 2024.

Our ability to continue as a going concern is dependent upon our ability to raise additional capital and to achieve sustainable revenues and profitable operations. We will need to increase revenues substantially beyond levels that we have attained in the past in order to generate sustainable operating profit and sufficient cash flows to continue doing business without raising additional capital from time to time. As a result of our expected operating losses and cash burn for the foreseeable future and recurring losses from operations, if we are unable to raise sufficient capital through additional debt or equity arrangements, there will be uncertainty regarding our ability to maintain liquidity sufficient to operate our business effectively, which raises substantial doubt as to our ability to continue as a going concern. If we cannot continue as a viable entity, our stockholders would likely lose most or all of their investment in us.

If we are unable to generate sustainable operating profit and sufficient cash flows, then our future success will depend on our ability to raise capital. We cannot be certain that raising additional capital, whether through selling additional debt or equity securities or obtaining a line of credit or other loan, will be available to us or, if available, will be on terms acceptable to us. If we issue additional securities to raise funds, these securities may have rights, preferences, or privileges senior to those of our common stock, and our current stockholders may experience dilution. If we are unable to obtain funds when needed or on acceptable terms, we may be required to curtail our current product development programs, cut operating costs, forego future development and other opportunities or even terminate our operations.

Our forecast of the period of time through which our financial resources will be adequate to support our operating requirements is a forward-looking statement and involves risks and uncertainties, and actual results could vary as a result of a number of factors, including the factors discussed elsewhere in this "Risk Factors" section. We have based this estimate on a number of assumptions that may prove to be wrong and changing circumstances beyond our control may cause us to consume capital more rapidly than we currently anticipate. Our inability to obtain additional funding when we need it could seriously harm our business.

We intend to discontinue the production of our memory products.

Taiwan Semiconductor Manufacturing Corporation, or TSMC, is the sole foundry that manufactures the wafers used to produce our memory IC products. TSMC has informed us that it will be discontinuing the foundry process used to produce the wafers necessary to produce our memory ICs. We are not in a position to transition wafer production to a new foundry and continue to manufacture these products. As a result, we have informed our customers that we have initiated an end-of-life, or EOL, of our memory IC products. We expect to fulfill product EOL orders through at least December 31, 2024. Our memory IC products represented over 50% of our revenues for the year ended December 31, 2022 and over 60% of our revenues for the year ended December 31, 2023. The discontinuation of the production and sale of our memory IC products will negatively impact our future revenues, results of operations and cash flows.

Our gross profit may fluctuate due to a variety of factors, which could negatively impact our results of operations and our financial condition.

Our gross profit may fluctuate due to a number of factors, including customer and product mix, market acceptance of our new products, yield, wafer pricing, packaging and testing costs, competitive pricing dynamics, charges for inventory write-downs and geographic and market pricing strategies. To the extent we may offer or be contractually obligated to offer certain customers favorable prices, it would decrease our average selling prices and likely impact our gross profit. In the possible event our customers, including our larger customers, exert more pressure with respect to pricing and other terms, it could put downward pressure on our profit.

Because we do not operate our own wafer fabrication, assembly, or testing facilities, we may not be able to reduce our costs as rapidly as companies that operate their own facilities, and in fact, our costs may even increase, which could further reduce our gross profit. We seek yield improvements and volume-based cost reductions to enable cost reductions. To the extent that such cost reductions do not occur at a sufficient level and in a timely manner, our business, financial condition, and results of operations could be adversely affected and may vary from our estimates.

In addition, we maintain an inventory of our products at various stages of production, as well as an inventory of finished goods. As we are generally a sole-source supplier, we hold these inventories in anticipation of customer orders. If those customer purchase orders do not materialize in a timely manner or customers do not honor those purchase orders, we can have excess or obsolete inventory which we would have to write-down, and our gross profit and results of operations would be adversely affected. During the years ended December 31, 2023 and 2022, we recorded inventory write-downs of approximately \$3.5 million and \$0.4 million, respectively.

We have a history of losses, and we will need to raise additional capital.

We incurred net losses of approximately \$16.8 million and \$32.4 million for the years ended December 31, 2023 and 2022, respectively, and we had an accumulated deficit of approximately \$166.4 million as of December 31, 2023. These and prior-year losses have resulted in significant negative cash flows. To remain competitive and expand our product offerings to customers, we will need to increase revenues substantially beyond levels that we have attained in the past in order to generate sustainable operating profit and sufficient cash flows to continue doing business without raising additional capital from time to time. Given our history of fluctuating revenues and operating losses, and the challenges we face in securing customers for our products, we cannot be certain that we will be able to achieve and maintain profitability on either a quarterly or annual basis in the future. As a result, we may need to raise additional capital in the future, which may or may not be available to us at all or only on unfavorable terms.

Our failure to generate the significant capital necessary or raise additional capital to expand our operations and invest in new products could reduce our ability to compete and could harm our business.

We intend to continue spending to grow our business. If we do not achieve and maintain profitability, we will need additional financing to pursue our business strategy, develop new products, respond to competition and market opportunities and acquire complementary businesses or technologies. There can be no assurance that such additional capital, whether in the form of debt or equity financing, will be sufficient or available and, if available, that such capital will be offered on terms and conditions acceptable to us.

If we were to raise additional capital through sales of our equity securities, our stockholders would suffer dilution of their equity ownership. If we engage in debt financing, we may be required to accept terms that restrict our ability to incur additional indebtedness, prohibit us from paying dividends, repurchasing our stock or making investments, and force us to maintain specified liquidity or other ratios, any of which could harm our business, operating results and financial condition. If we need additional capital and cannot raise it on acceptable terms, we may not be able to, among other things:

- develop or enhance our products;
- continue to expand our product development and sales and marketing organizations;
- acquire complementary technologies, products or businesses;

- expand operations, in the United States or internationally;
- hire, train and retain employees; or
- respond to competitive pressures or unanticipated working capital requirements.

We may fail to achieve the intended cost savings and related benefits from our reduction in workforce and temporary lay-offs.

In February 2023, we implemented a reduction in our workforce and eliminated five positions to help us achieve a more cost-efficient organization. In November 2023, we further reduced our workforce by eliminating three full-time equivalent positions, which included one employee and two consultants, and we initiated a temporary lay-off in Canada of 16 positions, all intended to preserve cash while keeping capital expenditures to minimum levels in order to reduce operating costs and our short-term cash needs.

We may fail to effectively execute on, or achieve the intended goals of, the reductions in operating costs. Our plans may also change as we continue to refocus on reducing operating costs and streamlining operations, while at the same time conserving cash by delaying or deferring certain expenditures as well. These actions may take more time than we currently estimate and we may not be able to achieve the cost-efficiencies sought. In addition, if we do not recall the impacted Canadian employees, we estimate that the total non-recurring charges would approximate \$0.5 million to \$1.0 million, primarily consisting of severance payments, notice pay, and employee benefit payments. We expect that the majority of the charges would be incurred by June 30, 2024. The charges that we expect to incur are subject to a number of assumptions, including legal requirements in various jurisdictions, and actual expenses may differ materially from the estimates disclosed above.

Moreover, the reduction in workforce may negatively impact employee morale for those who are not directly impacted, which may increase employee attrition and hurt future recruiting efforts, hindering our ability to achieve our key priorities. Any failure to achieve the expected benefits from the reduction in workforce and any charges we incur if we do not recall the impacted Canadian employees could adversely affect our stock price, financial condition and ability to achieve our goals.

Failure to comply with laws relating to employment could subject us to penalties and other adverse consequences.

We are subject to various employment-related laws in the jurisdictions in which our employees are based. We face risks if we fail to comply with applicable U.S. federal or state employment and wage laws, or employment wage laws applicable to our employees located in Canada. In November 2023, we initiated a temporary lay-off in Canada of 16 positions. The temporary lay-offs create an additional risk of claims being made on behalf of affected employees. Recently, the Company has received and, may in the future receive, claims made on behalf of employees, whom were part of the temporary lay-off, regarding statutory and common law severance payments. If such claims are successful and not mitigated by employment practices insurance coverage, our required payments may be higher than we have initially estimated. In addition, any violations of applicable wage laws or other labor- or employment-related laws could result in complaints by current or former employees, adverse media coverage, investigations, and damages or penalties which could have a materially adverse effect on our reputation, business, operating results, and prospects. In addition, responding to any such proceeding may result in a significant diversion of management's attention and resources, significant defense costs, and other professional fees.

Our failure to successfully market our products could seriously harm our ability to execute our business strategy and may force us to curtail our research and development plans or existing operations.

Our success depends upon the acceptance by our target markets of our products and technologies. Our prospective customers, which include original equipment manufacturers, or OEMs, and service providers, may be unwilling to adopt and design-in our products due to the uncertainties and risks surrounding designing a new IC or module and/or incorporating new IP into their systems and relying on a small, sole-sourced supplier. Thus, currently, we do not know whether we will be able to generate adequate profit from making and selling our products and licensing our technologies to sustain our operations.

An important part of our strategy to gain market acceptance is to penetrate new markets by targeting market leaders to accept our technology solutions. This strategy is designed to encourage other participants in those markets to follow these leaders in adopting our solutions. If a high-profile industry participant adopts our products for one or more of its products but fails to achieve success with those products, or is unable to successfully implement our products, other industry participants' perception of our solutions could be harmed. Any such event could reduce the amount of future sales of our products.

Future revenue growth depends on our winning designs with existing and new customers, retaining current customers, and having those customers design our solutions into their product offerings and successfully selling and marketing such products. If we do not continue to win designs in the short term, our product revenue in the following years will not grow.

We sell our ICs to customers that include our ICs and modules in their products. Our technology is generally incorporated into products at the design stage, which we refer to as a design win, and which we define as the point at which a customer has made a commitment to build a board against a fixed schematic for its system, and this board will utilize our products. As a result, our future revenue depends on our OEM customers designing our products into their products, and on those products being produced in volume and successfully commercialized. If we fail to retain our current customers or convince our current or prospective customers to include our products in their products and fail to achieve a consistent number of design wins, our results of operations and business will be harmed. In addition, if a current or prospective customer designs a competitor's offering into its product, it becomes significantly more difficult for us to sell our products to that customer because changing suppliers involves significant cost, time, effort and risk for the OEM. Even if a customer designs one of our ICs or modules into its product, we cannot be assured that the OEM's product will be commercially successful over time, or at all, or that we will receive or continue to receive any revenue from that customer. Furthermore, the customer product for which we obtain a design win may be canceled before the product enters production or before or after it is introduced into the market. Because of our extended sales cycle, our revenue in future years is highly dependent on design wins we are awarded today. Our lack of capital and uncertainty about our future technology roadmap also may limit our success in achieving additional design wins, as discussed under "We may experience difficulties in transitioning to new wafer fabrication process technologies or in achieving higher levels of design integration, which may result in reduced manufacturing yields, delays in product deliveries and increased costs."

The design win process for our products is generally lengthy, expensive and competitive, with no guarantee of revenue, and, if we fail to generate sufficient revenue to offset our expenses, our business and operating results would suffer.

Achieving a design win for one of our products is typically a lengthy, expensive and competitive process because our customers generally take a considerable amount of time to evaluate our products. In the markets we serve, the time from initial customer engagement to design win to production volume shipments can range from one to three years, though it may take longer for new customers or markets we intend to address. In order to win designs, we are required to both incur design and development costs and dedicate substantial engineering resources in pursuit of a single customer opportunity. Even though we incur these costs we may not prevail in the competitive selection process, and, even if we do achieve a design win, we may never generate sufficient, or any, revenue to offset our development expenditures. Our customers have the option to decide whether or not to put our solutions into production after initially designing our products in the specification. The customer can make changes to its product after a design win has been awarded to us, which can have the effect of canceling a previous design win. The delays inherent in our protracted sales cycle increase the risk that a customer will decide to cancel, curtail, reduce or delay its product plans, causing us to lose anticipated revenue. In addition, any change, delay or cancellation of a customer's plans could harm our financial results, as we may have incurred significant expense while generating no revenue.

If our foundries do not achieve satisfactory yields or quality, our cost of net revenue will increase, our operating margins will decline and our reputation and customer relationships could be harmed.

We depend not only on sufficient foundry manufacturing capacity and wafer prices, but also on good production yields (the number of good die per wafer) and timely wafer delivery to meet customer demand and maintain profit margins. The fabrication of our products is a complex and technically demanding process. Minor deviations in the manufacturing process can cause substantial decreases in yields and, in some cases, cause production to be suspended. From time to time, our foundries experience manufacturing defects and reduced manufacturing yields. Changes in manufacturing processes or the inadvertent use of defective or contaminated materials by our foundries could result in lower than anticipated manufacturing yields, which would harm our revenue or increase our costs. For example, in the past, one of our foundries produced ICs and met its process specification range but did not meet our customer's specifications causing us to write off a portion of our production lot. Many of these problems are difficult to detect at an early stage of the manufacturing process and may be time consuming and expensive to correct. Poor yields from our foundry, or defects, integration issues or other performance problems in our ICs, could cause us significant customer relations and business reputation problems, harm our operating results and give rise to financial or other damages to our customers. Our customers might consequently seek damages from us for their losses. A product liability claim brought against us, even if unsuccessful, would likely be time consuming and costly to defend.

We may experience difficulties in transitioning to new wafer fabrication process technologies or in achieving higher levels of design integration, which may result in reduced manufacturing yields, delays in product deliveries and increased costs.

We aim to use the most advanced manufacturing process technology appropriate for our solutions that is available from our foundries. As a result, we periodically evaluate the benefits of migrating our solutions to other technologies in order to improve performance and reduce costs. These ongoing efforts require us from time to time to modify the manufacturing processes for our products and to redesign some products, which in turn may result in delays in product deliveries. We are dependent on our foundries to support the production of wafers for future versions of our IC. Such production may require changes to the foundry's existing process technology. If the foundry elects to not alter their process technology to support future versions of our ICs, we would need to identify a new foundry.

As discussed under "*We intend to discontinue the production of our memory products*," TSMC, which is the sole foundry that manufactures the wafers used to produce our memory IC products, has informed us that it will be discontinuing the foundry process used to produce the wafers necessary to produce our memory ICs. We are not in a position to transition wafer production to a new foundry and continue to manufacture these products. As a result, we initiated an EOL of our memory IC products. The discontinuation of the production and sale of our memory IC products will negatively impact our future revenues, results of operations and cash flows.

To date, we have not achieved the anticipated benefits of a fabless semiconductor company.

Our primary goal has been to increase our total available market by creating high-performance ICs and modules for mmWave applications using our proprietary technology and design expertise. Historically, this development effort required that we add headcount and design resources, such as expensive software tools, which increased our losses from, and cash used in, operations. Our efforts to increase our revenue and expand our markets have been subject to various risks and uncertainties, including, but not limited to:

- a lack of working capital;
- customer acceptance;
- difficulties and delays in our product development, manufacturing, testing and marketing activities;
- timeliness of new product introductions;
- the anticipated costs and technological risks of developing and bringing our products to market;
- the willingness of our manufacturing partners to assist successfully with fabrication;
- our ability to qualify our products for mass production and achieve wafer yield levels and the final test results necessary to be price competitive;
- the availability of quantities of our products supplied by our manufacturing partners at a competitive cost;
- our ability to generate the desired gross margin percentages and return on our product development investment;
- competition from established competitors;
- the adequacy of our IP protection for our proprietary IC designs and technologies;
- customer concerns over our financial condition and viability to be a long-term profitable supplier; and
- the vigor and growth of markets served by our current and prospective customers.

If we experience significant delays in bringing our products to market, if customer adoption of our products is delayed or if our customers' products that include our products are not successful, this could have a material adverse effect on our anticipated revenues in upcoming years due to the potential loss of design wins and future revenues.

Our main objective is the development and sale of our technologies to service providers, cloud networking, security, test and video system providers and their subsystem and component vendors and, if demand for these products does not grow, we may not achieve revenue growth and our strategic objectives.

We market and sell our products and technology to mmWave, cloud networking, communications, data center and other equipment providers and their subsystem and component vendors. We believe our future business and financial success depends on market acceptance and increasing sales of these products. To meet our growth and strategic objectives, networking infrastructure OEMs must incorporate our products into their systems and the demand for their systems must grow as well. We cannot provide assurance that sales of our products to these OEMs will increase substantially in the future or that the demand for our customers' systems will increase. Our future revenues from these products may not increase in accordance with our growth and strategic objectives if, instead, our OEM customers modify their product designs, select products sold by our competitors or develop their own proprietary technologies. Moreover, demand for their products that incorporate our technologies may not grow or result in significant sales of such products due to factors affecting the customers and their business such as industry downturns, declines in capital spending in the enterprise and carrier markets or unfavorable macroeconomic conditions. Thus, the future success of our business depends in large part on factors outside our control, and sales of our products may not meet our revenue growth and strategic objectives.

Our failure to continue to develop new products and enhance our products on a timely basis could diminish our ability to attract and retain customers.

The existing and potential markets for our products are characterized by ever-increasing performance requirements, evolving industry standards, rapid technological change and product obsolescence. These characteristics lead to periodic changes in customer requirements, shorter product life cycles and changes in industry demands and mandate new product introductions and enhancements to maintain customer engagements and design wins. In order to attain and maintain a significant position in the market, we will need to continue to enhance and evolve our products and the underlying proprietary technologies in anticipation of these market trends although we do not have a large engineering staff.

Our future performance depends on a number of factors, including our ability to:

- identify target markets and relevant emerging technological trends;
- develop and maintain competitive technology by improving performance and adding innovative features that differentiate our products from alternative technologies;
- enable the incorporation of our products into customers' products on a timely basis and at competitive prices; and
- respond effectively to new technological developments or new product introductions by others.

Our failure to enhance our existing products and develop future products that achieve broad market acceptance will harm our competitive position and impede our future growth.

Our products have a lengthy sales cycle, which makes it difficult to predict success in this market and the timing of future revenue.

Our products have a lengthy sales cycle, ranging from six to 24 months from the date of our initial proposal to a prospective customer until the date on which the customer confirms that it has designed our product into its system. An even lengthier period could ensue before we would know the volume of products that such customer will, or is likely to, order. A number of factors can contribute to the length of the sales cycle including technical evaluations of our products by the customers, the design process required to integrate our products into the customers' products and the timing of the customers' new product announcements. In anticipation of product orders, we may incur substantial costs before the sales cycle is complete and before we receive any customer payments. As a result, in the event that a sale is not completed or is cancelled or delayed, we may have incurred substantial expenses, making it more difficult for us to become profitable or otherwise negatively impacting our financial results. Furthermore, because of this lengthy sales cycle, the recording of revenues from our selling efforts may be substantially delayed, our ability to forecast our future revenue may be more limited and our revenue may fluctuate significantly from quarter to quarter. We cannot provide any assurances that our efforts to build a strong and profitable business based on the sale of ICs will succeed. If these efforts are not successful, in light of the substantial resources that we have invested, our future operating results and cash flows could be materially and adversely affected.

The semiconductor industry is cyclical in nature and subject to periodic downturns, which can negatively affect our revenue.

The semiconductor industry is cyclical and has experienced pronounced downturns for sustained periods of up to several years. To respond to any downturn, many semiconductor manufacturers and their customers will slow their research and development activities, cancel or delay new product developments, reduce their workforces and inventories and take a cautious approach to acquiring new equipment and technologies. As a result, our business has been in the past and could be adversely affected in the future by an industry downturn which could negatively impact our future revenue and profitability. Also, the cyclical nature of the semiconductor industry may cause our operating results to fluctuate significantly from year-to-year.

Our revenue has been highly concentrated among a small number of customers, and our results of operations could be harmed if we lose a key revenue source and fail to replace it.

Our overall revenue has been highly concentrated, with a few customers accounting for a significant percentage of our total revenue. For the years ended December 31, 2023 and 2022, our three largest customers represented approximately 75% and 63% of total revenue, respectively. We expect that a relatively small number of customers will continue to account for a substantial portion of our revenue for the foreseeable future.

As a result of this revenue concentration, our results of operations could be adversely affected by the decision of a single key customer to cease using our technology or products or by a decline in the number of products that incorporate our technology that are sold by a single licensee or customer or by a small group of licensees or customers.

Our revenue concentration may also pose credit risks which could negatively affect our cash flow and financial condition.

We might also face credit risks associated with the concentration of our revenue among a small number of licensees and customers. At December 31, 2023 and 2022, four customers represented approximately 83% and 79% of total trade receivables, respectively. Our failure to collect

receivables from any customer that represents a large percentage of receivables on a timely basis, or at all, could adversely affect our cash flow or results of operations.

Our products must meet exact specifications and defects and failures may occur, which may cause customers to return or stop buying our products.

Our customers generally establish demanding specifications for quality, performance and reliability that our products must meet. However, our products are highly complex and may contain defects and failures when they are first introduced or as new versions are released. If defects and failures occur in our products during the design phase or after, we could experience lost revenues, increased costs, including warranty and customer support expenses and penalties for non-performance stipulated in customer purchase agreements, delays in or cancellations or rescheduling of orders or shipments, product returns or discounts, diversion of management resources or damage to our reputation and brand equity, and in some cases consequential damages, any of which would harm our operating results. In addition, delays in our ability to fill product orders as a result of quality control issues may negatively impact our relationship with our customers. We cannot assure you that we will have sufficient resources to satisfy any asserted claims. Furthermore, any such defects, failures or delays may be particularly damaging to us as we attempt to establish our reputation as a reliable provider of IC and module products.

Because we sell our products on a purchase order basis and rely on estimated forecasts of our customers' needs, inaccurate forecasts could adversely affect our business.

We sell our products pursuant to individual purchase orders rather than long-term purchase commitments. Therefore, we will rely on estimated demand forecasts, based upon input from our customers, to determine how much product to manufacture. Because our sales are based primarily on purchase orders, our customers may cancel, delay or otherwise modify their purchase commitments with little or no notice to us. For these reasons, we will generally have limited visibility regarding our customers' product needs. In addition, the product design cycle for our customers can be lengthy and it may be difficult for us to accurately anticipate when they will commence commercial shipments of products that include our ICs or modules.

Furthermore, if we experience substantial warranty claims, our customers may cancel existing orders or cease to place future orders. Any cancellation, delay or other modification in our customers' orders could significantly reduce our revenue, cause our operating results to fluctuate from period to period and make it more difficult for us to predict our revenue. In the event of a cancellation or reduction of an order, we may not have enough time to reduce operating expenses to mitigate the effect of the lost revenue on our business.

If we overestimate customer demand for our products, we may purchase products from our manufacturers that we cannot sell. Conversely, if we underestimate customer demand or if sufficient manufacturing and testing capacity are unavailable, we would forego revenue opportunities and could lose market share in the markets served by our products and could incur penalty payments under our customer purchase agreements. In addition, our inability to meet customer requirements for our products could lead to delays in product shipments, force customers to identify alternative sources and otherwise adversely affect our ongoing relationships with our customers.

We depend on contract manufacturers for a significant portion of our revenue from the sale of our products.

Many of our current and prospective OEM customers use third party contract manufacturers to manufacture their systems and these contract manufacturers purchase our products directly from us on behalf of the OEMs. Although we expect to work with our OEM customers in the design and development phases of their systems, these OEMs often give contract manufacturers some authority in product purchasing decisions. If we cannot compete effectively for the business of these contract manufacturers, or if any of the contract manufacturers that work with our OEM customers experience financial or other difficulties in their businesses, our revenue and our business could be adversely affected. For example, if a contract manufacturer becomes subject to bankruptcy proceedings, we may not be able to obtain our products held by the contract manufacturer or recover payments owed to us by the contract manufacturer for products already delivered to the contract manufacturer. If we are unable to persuade contract manufacturers to purchase our products, or if the contract manufacturers are unable to deliver systems with our products to OEMs on a timely basis, our business would be adversely affected.

We rely on independent foundries and contractors for the manufacture, assembly, testing and packaging of our integrated circuits and modules, and the failure of any of these third parties to deliver products or otherwise perform as requested could damage our relationships with our customers and harm our sales and financial results.

As a fabless semiconductor company, we rely on third parties for substantially all of our manufacturing operations. We depend on these parties to supply us with material in a timely manner that meets our standards for yield, cost and quality. We do not have long-term supply contracts with any of our suppliers or manufacturing service providers, and therefore they are not obligated to manufacture products for us for any specific period, in any specific quantity or at any specified price except as may be provided in a particular purchase order. Any problems with our manufacturing supply chain could adversely impact our ability to ship our products to our customers on time and in the quantity required which in turn could damage our customer relationships and impede market acceptance of our IC products.

Our third-party wafer foundry and testing and assembly vendors are located in regions at high risk for earthquakes and other natural disasters and adverse consequences related to the outbreak of contagious diseases, such as COVID-19. Any disruption to the operations of these foundries and vendors resulting from earthquakes or other natural disasters could cause significant delays in the development, production, shipment and sales of our IC products.

Certain vendors that we utilize to manufacture our products are located in Asia, as are other foundries we may use in the future. Our vendors that provide substrates and wafer sorting and handle the testing of our products are headquartered in either Asia or the San Francisco Bay Area of California. The risk of an earthquake in the Pacific Rim region is significant due to the proximity of major earthquake fault lines. The occurrence of earthquakes or other natural disasters could result in the disruption of the wafer foundry or assembly and test capacity of the third parties that supply these services to us and may impede our research and development efforts as well as our ability to market and sell our products. We may not be able to obtain alternate capacity on favorable terms, if at all.

Global pandemics, such as the COVID-19 pandemic, which was declared a pandemic by the World Health Organization and a national emergency by the U.S. government in March 2020, along with outbreaks of new contagious diseases or the resurgence of existing diseases that significantly affect the Asia-Pacific region could disrupt the operations of our key suppliers and manufacturing partners.

Disruptions in our supply chain due to shortages in the global semiconductor supply chain could cause delays for customers and impact revenue.

We have and may continue to experience disruptions in our global semiconductor supply chain, with suppliers increasing lead times or placing products on allocation, including procuring necessary components, wafers, substrates and assembly services in a timely fashion. As a result of these supply chain disruptions, we have had to increase customer order lead times, and we may be required to purchase some products on allocation. We may be unable to satisfy all of the demand for our products, which may adversely affect customer relationships and impact revenue.

Price increases from our supply chain can adversely impact revenue or reduce margins.

Our suppliers can increase the price of products and services provided to us. Finding and qualifying alternate or additional suppliers in response to increased pricing from suppliers can be a lengthy process and can lead to production delays or additional costs, and such alternatives are sometimes not available. If we are unable to increase the price of our products to our customers in response to increased costs, we would face reduced margins.

Any claim that our products or technology infringe third party IP rights could increase our costs of operation and distract management and could result in expensive settlement costs or the discontinuance of our technology licensing or product offerings. In addition, we may incur substantial litigation expense which would adversely affect our profitability.

The semiconductor industry is characterized by vigorous protection and pursuit of IP rights or positions which has resulted in often protracted and expensive litigation. We are not aware of any third party IP that our products or technology would infringe. However, like many companies of our size with limited resources, we have not searched for all potentially applicable IP in the public databases. It is possible that a third party now has, or may in the future obtain, patents or other intellectual property rights that our products or technology may now, or in the future, infringe. Our licensees and IC customers, or we, might, from time to time, receive notice of claims that we have infringed patents or other IP rights of others. Litigation against us can result in significant expense and divert the efforts of our technical and management personnel whether or not the litigation has merit or results in a determination adverse to us.

The discovery of defects in our technology and products could expose us to liability for damages.

The discovery of a defect in our technologies and products could lead our customers to seek damages from us. Many of our agreements with customers include provisions waiving implied warranties regarding our technology and products and limiting our liability to our customers. We cannot be certain, however, that the waivers or limitations of liability contained in our agreements with customers will be enforceable.

We might not be able to protect and enforce our IP rights which could impair our ability to compete and reduce the value of our technology.

Our technology is complex and is intended for use in complex systems. For example, our licensees' products utilize our embedded memory and/or interface technology and a large number of companies manufacture and market these products. Because of these factors, policing the unauthorized use of our IP is difficult and expensive. We cannot be certain that we will be able to detect unauthorized use of our technology or prevent other parties from designing and marketing unauthorized products based on our technology. In the event we identify any past or present infringement of our patents, copyrights or trademarks, or any violation of our trade secrets, confidentiality procedures or licensing agreements, we cannot assure you that the steps taken by us to protect our proprietary information will be adequate to prevent misappropriation of our technology. Our inability to adequately protect our IP would reduce significantly the barriers of entry for directly competing technologies and could reduce the value of our technology. Furthermore, we might initiate claims or litigation against third parties for infringement of our proprietary rights or to establish the validity of our proprietary rights. Litigation by us could result in significant expense and divert the efforts of our technical and management personnel whether or not such litigation results in a determination favorable to us.

Our existing patents might not provide us with sufficient protection of our IP, and our patent applications might not result in the issuance of patents, either of which could reduce the value of our core technology and harm our business.

We rely on a combination of patents, trademarks, trade secret laws and confidentiality procedures to protect our IP rights. We cannot be sure that any patents will be issued from any of our pending applications or that any claims allowed from pending applications will be of sufficient scope or strength, or issued in all countries where our products can be sold, to provide meaningful protection or any commercial advantage to us. Failure of our patents or patent applications to provide meaningful protection might allow others to utilize our technology without any compensation to us.

If our intangible assets become impaired, we would be required to record a charge to earnings.

We review our intangible assets for impairment when events or changes in circumstances, such as a decline in our stock price and/or market capitalization, indicate the carrying value may not be recoverable. If our intangible assets are deemed to be impaired, an impairment loss equal to the amount by which the carrying amount exceeds the fair value of the assets would be recognized. We would be required to record an impairment charge in our financial statements during the period in which any impairment of our intangible assets is determined, which would negatively affect our results of operations.

If we fail to retain key personnel, our business and growth could be negatively affected.

Our business has been dependent to a significant degree upon the services of a small number of executive officers and technical employees. The loss of key personnel could negatively impact our technology development efforts, our ability to deliver products under our existing agreements, maintain strategic relationships with our partners and obtain new customers. We generally have not entered into employment or non-competition agreements with any of our employees and do not maintain key-man life insurance on the lives of any of our key personnel.

Our ability to utilize our net operating loss carryforwards is limited as a result of an "ownership change," as defined in Section 382 of the Internal Revenue Code of 1986, as amended.

As of December 31, 2023, we had approximately \$212.7 million of net operating loss, or NOL, carryforwards for U.S. federal tax purposes. Under U.S. federal income tax law, we generally can use our NOL carryforwards (and certain related tax credits) to offset ordinary taxable income, thereby reducing our U.S. federal income tax liability, for up to 20 years from the year in which the losses were generated, after which time they will expire. Our California NOL carryforwards (and certain related tax credits) generally may be used to offset future state taxable income for 20 years from the year in which the losses are generated, depending on the state, after which time they will expire. The rate at which we can utilize our NOL carryforwards is limited (which could result in NOL carryforwards expiring prior to their use) each time we experience an "ownership change," as determined under Section 382 of the Internal Revenue Code. A Section 382 ownership change generally occurs if a shareholder or a group of shareholders who are deemed to own at least 5% of our common stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. If an ownership change occurs, Section 382 generally would impose an annual limit on the amount of post-ownership

change taxable income that may be offset with pre-ownership change NOL carryforwards equal to the product of the total value of our outstanding equity immediately prior to the ownership change (reduced by certain items specified in Section 382) and the U.S. federal long-term tax-exempt interest rate in effect at the time of the ownership change. A number of special and complex rules apply in calculating this Section 382 limitation. While the complexity of Section 382 makes it difficult to determine whether and when an ownership change has occurred, and a formal study has not been performed, we believe that a Section 382 ownership change occurred as a result of our business combination with Peraso Technologies Inc. in 2021. We believe this Section 382 limitation will result in substantially all of our federal and state NOLs and federal tax credit carryforwards incurred prior to December 2021 expiring before they can be utilized. In addition, our ability to use our NOL carryforwards will be limited to the extent we fail to generate enough taxable income in the future before they expire. Existing and future Section 382 limitations and our inability to generate enough taxable income in the future could result in a substantial portion of our NOL carryforwards expiring before they are used. We have recorded a full valuation allowance for our deferred tax assets.

Third parties might attempt to gain unauthorized access to our network or seek to compromise our products and services.

Our business is dependent on the security and efficacy of our networks and computer and data management systems, and we rely on our internal computer networks for many of the systems we use to operate our business generally. From time to time, we may face attempts by others to gain unauthorized access through the Internet or otherwise or to introduce malicious software to our IT systems. We or our products may be a target of computer hackers, organizations or malicious attackers who attempt to:

- gain access to our network;
- steal proprietary information related to our business, products, employees and customers; or
- interrupt our systems.

From time to time, we may encounter attempts at gaining unauthorized access to our network, and we periodically run security checks. While we seek to detect and investigate unauthorized attempts and attacks against our network and products of which we become aware, and to prevent their recurrence where practicable through changes to our internal processes and tools and/or changes to our products, we remain potentially vulnerable to additional known or unknown threats. In addition to intentional security breaches, the integrity and confidentiality of company and customer data and our intellectual property may be compromised as a result of human error, product defects, or technological failures. Different geographic markets may have different regulations regarding data protection, raising potential compliance risks. Further, retaliatory acts by foreign governments or terrorist organizations in response to policies of the United States government could include cyber attacks that could disrupt the economy more generally or that could also impact our operations directly or indirectly.

Any failure or perceived failure by us or our service providers to prevent information security breaches or other incidents or system disruptions, or any compromise of security that results in or is perceived or reported to result in unauthorized access to, or loss, theft, alteration, release or transfer of, our information, or any personal information, confidential information, or other data could result in loss or theft of proprietary or sensitive data and intellectual property, could harm our reputation and competitive position and could expose us to legal claims, regulatory investigations and proceedings, and fines, penalties, and other liability. Any such actual or perceived security breach, incident or system disruption could also divert the efforts of our personnel, and could require us to incur significant costs and operational consequences in connection with investigating, remediating, eliminating and putting in place additional tools, devices, policies, and other measures designed to prevent actual or perceived security breaches and other incidents and system disruptions, and in, for example, rebuilding internal systems, reduced inventory value, providing modifications to our products and services, defending against claims and litigation, responding to regulatory inquiries or actions, paying damages, or taking other remedial steps with respect to third parties. Moreover, we could be required or otherwise find it appropriate to expend significant capital and other resources to respond to, notify third parties of, and otherwise address the incident or breach and its root cause, and to notify individuals, regulatory authorities and others of security breaches involving certain types of data.

Further, we cannot assure that any limitations of liability provisions in our current or future contracts that may be applicable would be enforceable or adequate or would otherwise protect us from any liabilities or damages with respect to any particular claim relating to a security breach or other security-related matter. We also cannot be sure that our existing insurance coverage will continue to be available on acceptable terms or will be available in sufficient amounts to cover claims related to a security breach or incident, or that the insurer will not deny coverage as to any future claim. The successful assertion of claims against us that exceed available insurance coverage, or the occurrence of changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could have a material adverse effect on our business, including our financial condition, operating results, and reputation.

Acquisitions or other business combinations that we pursue in the future, whether or not consummated, could result in other operating and financial difficulties.

In the future we may seek to acquire additional product lines, technologies or businesses in an effort to increase our growth, enhance our ability to compete, complement our product offerings, enter new and adjacent markets, obtain access to additional technical resources, enhance our IP rights or pursue other competitive opportunities. If we seek acquisitions or other business combinations, we may not be able to identify suitable candidates at prices we consider appropriate. We cannot readily predict the timing or size of our future acquisitions or combinations, or the success of any such transactions.

To the extent that we consummate acquisitions, combinations or investments, we may face financial risks as a result, including increased costs associated with merged or acquired operations, increased indebtedness, economic dilution to gross and operating profit and earnings per share, or unanticipated costs and liabilities. Acquisitions may involve additional risks, including:

- the acquired product lines, technologies or businesses may not improve our financial and strategic position as planned;
- we may determine we have overpaid for the product lines, technologies or businesses, or that the economic conditions underlying our acquisition have changed;
- we may have difficulty integrating the operations and personnel of the acquired company;
- we may have difficulty retaining the employees with the technical skills needed to enhance and provide services with respect to the acquired product lines or technologies;

- the acquisition may be viewed negatively by customers, employees, suppliers, financial markets or investors;
- we may have difficulty incorporating the acquired product lines or technologies with our existing technologies;
- we may encounter a competitive response, including price competition or IP litigation;
- we may become a party to product liability or IP infringement claims as a result of our sale of the acquired company's products;
- we may incur one-time charges, such as for acquired in-process research and development costs, and restructuring charges;
- we may acquire goodwill and other intangible assets that are subject to impairment tests, which could result in future impairment charges;
- our ongoing business and management's attention may be disrupted or diverted by transition or integration issues and the complexity of managing geographically or culturally diverse enterprises; and
- our due diligence process may fail to identify significant existing issues with the target business.

From time to time, we may enter into negotiations for acquisitions or investments that are not ultimately consummated. These negotiations could result in significant diversion of management time, as well as substantial out-of-pocket costs, any of which could have a material adverse effect on our business, operating results and financial condition.

Holders of exchangeable shares are expected to experience a delay in receiving shares of our common stock from the date they request an exchange, which may affect the value of the shares the holder receives in an exchange.

Holders of exchangeable shares who request to receive shares of our common stock in exchange for their exchangeable shares will not receive shares of our common stock until several business days after the applicable request is received. During this period, the market price of our common stock may increase or decrease. Any such increase or decrease would affect the value of the consideration to be received by such holder of exchangeable shares upon a subsequent sale of the common stock received in the exchange.

We are a "smaller reporting company" and, as a result of the reduced disclosure and governance requirements applicable to smaller reporting companies, our common stock may be less attractive to investors.

We are a "smaller reporting company," and are subject to lesser disclosure obligations in our SEC filings compared to other issuers. Specifically, "smaller reporting companies" are able to provide simplified executive compensation disclosures in their filings, are exempt from the provisions of Section 404(b) of the Sarbanes-Oxley Act requiring that independent registered public accounting firms provide an attestation report on the effectiveness of internal control over financial reporting and have certain other decreased disclosure obligations in their SEC filings, including, among other things, only being required to provide two years of audited financial statements in annual reports. Decreased disclosures in our SEC filings due to our status as a "smaller reporting company" may make it harder for investors to analyze our operating results and financial prospects.

War, terrorism, other acts of violence, natural disasters and global pandemics, such as the COVID-19 pandemic and associated macroeconomic pressures in the markets in could adversely impact our business.

Geopolitical issues around the world can impact macroeconomic conditions and could have a material adverse impact on our business. For instance, world unrest due to wars, terrorist attacks and other disruptive events, such as the COVID-19 pandemic, have led to global economic disruptions, and mounting inflationary cost pressures and recessionary fears have negatively impacted the global and domestic economy. Since mid-2022, the U.S. Federal Reserve has addressed elevated inflation by periodically increasing interest rates. Given current market conditions, we may be unable to access the capital markets, and additional capital may only be available to us on terms that could be significantly detrimental to our existing stockholders and to our business.

Sustained inflation could have a material adverse effect on our business, financial condition, results of operations and liquidity.

Inflation rates in the markets in which we operate have increased and may continue to rise. Inflation over the last several months has led us to experience higher costs, including, among others, labor, wafer and transportation. Our suppliers have raised their prices and may continue to raise prices, and, although we have made minimal price increases thus far, in the competitive markets in which we operate, we may not be able to make corresponding price increases to preserve our gross margins and profitability. In addition, inflationary pressures could cause customers to delay or reduce purchases of our products or delay payments to us. If inflation rates continue to rise or remain elevated for a sustained period of time, they could have a material adverse effect on our business, financial condition, results of operations and liquidity.

There may be future sales of our common stock, which could adversely affect the market price of our common stock and dilute a stockholder's ownership of common stock.

The sale of our common stock resulting from exercise of any options or vesting of restricted stock units granted to executive officers and other employees under our equity compensation plan and of any warrants, and other issuances of our common stock could have an adverse effect on the market price of the shares of our common stock. We are generally not restricted from issuing additional shares of common stock, including any securities that are convertible into or exchangeable for, or that represent the right to receive shares of common stock, provided that we are subject to the listing rules of the Nasdaq Stock Market (which generally require stockholder approval for any transactions which would result in the issuance of more than 20% of our then outstanding shares of common stock or voting rights representing over 20% of our then outstanding shares of stock). Sales of a substantial number of shares of our common stock in the public market or the perception that such sales might occur could materially adversely affect the market price of the shares of our common stock. Because our decision to issue securities in any future offering will depend on market conditions and other factors beyond our control, we cannot predict or estimate the amount, timing or nature of our future offerings. Accordingly, our stockholders bear the risk that our future offerings will reduce the market price of our common stock and dilute their stock holdings in us.

Potential volatility of the price of our common stock could negatively affect your investment.

We cannot assure you that there will continue to be an active trading market for our common stock. Historically, the stock market, as well as our common stock, has experienced significant price and volume fluctuations. Market prices of securities of technology companies can be highly volatile and frequently reach levels that bear no relationship to the operating performance of such companies. These market prices generally are not sustainable and are subject to wide variations. If our common stock trades to unsustainably high levels, it is likely that the market price of our common stock will thereafter experience a material decline. As a result of fluctuations in the price of our common stock, you may be unable to sell your shares at or above the price you paid for them. In addition, if we seek additional financing, including through the sale of equity or convertible securities, such sales could cause our stock price to decline and result in dilution to existing stockholders.

In addition, the stock markets in general, and the markets for semiconductor stocks in particular, have experienced significant volatility that has often been unrelated to the financial condition or results of operations of particular companies. These broad market fluctuations may adversely affect the trading price of our common stock and, consequently, adversely affect the price at which you could sell the shares that you have purchased. In the past, following periods of volatility in the market or significant price declines, securities class-action litigation has often been instituted against companies. Such litigation, if instituted against us, could result in substantial costs and diversion of management's attention and resources, which could materially and adversely affect our business, financial condition, results of operations and growth prospects.

The effective increase in the number of shares of our common stock available for issuance as a result of our reverse stock split could result in further dilution to our existing stockholders and have antitakeover implications.

The reverse stock split alone had no effect on our authorized capital stock, and the total number of authorized shares remains the same as before the reverse stock split. The reverse stock split of our issued and outstanding shares increased the number of shares of our common stock (or securities convertible or exchangeable for our common stock) available for issuance by decreasing the number of shares of our common stock issued and outstanding. The additional available shares are available for issuance from time to time at the discretion of our board of directors when opportunities arise, without further stockholder action or the related delays and expenses, except as may be required for a particular transaction by law, the rules of any exchange on which our securities may then be listed, or other agreements or restrictions. Any issuance of additional shares of our common stock would increase the number of outstanding shares of our common stock and (unless such issuance was pro-rata among existing stockholders) the percentage ownership of existing stockholders would be diluted accordingly. In addition, any such issuance of additional shares of our common stock could have the effect of diluting the earnings per share and book value per share of outstanding shares of our common stock.

Additionally, the effective increase in the number of shares available for issuance could, under certain circumstances, have anti-takeover implications. For example, the additional shares of common stock that have become available for issuance could be used by us to oppose a hostile takeover attempt or to delay or prevent changes in control or our management. Although our reverse stock split is prompted by other considerations and not by the threat of any hostile takeover attempt, stockholders should be aware that our reverse stock split could facilitate future efforts by us to deter or prevent changes in control, including transactions in which our stockholders might otherwise receive a premium for their shares over then-current market prices.

Provisions of our certificate of incorporation and bylaws or Delaware law might delay or prevent a change-of-control transaction and depress the market price of our stock.

Various provisions of our certificate of incorporation and bylaws might have the effect of making it more difficult for a third party to acquire, or discouraging a third party from attempting to acquire, control of our company. These provisions could limit the price that certain investors might be willing to pay in the future for shares of our common stock. Certain of these provisions eliminate cumulative voting in the election of directors, limit the right of stockholders to call special meetings and establish specific procedures for director nominations by stockholders and the submission of other proposals for consideration at stockholder meetings.

We are also subject to provisions of Delaware law which could delay or make more difficult a merger, tender offer or proxy contest involving our company. In particular, Section 203 of the Delaware General Corporation Law prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years unless specific conditions are met. Any of these provisions could have the effect of delaying, deferring or preventing a change in control, including without limitation, discouraging a proxy contest or making more difficult the acquisition of a substantial block of our common stock.

Under our certificate of incorporation, our board of directors may issue up to a maximum of 20,000,000 shares of preferred stock without stockholder approval on such terms as the board might determine. The rights of the holders of common stock will be subject to, and might be adversely affected by, the rights of the holders of any preferred stock that might be issued in the future.

Our common stock warrants outstanding at December 31, 2023 are accounted for as a warrant liability and recorded at fair value with changes in fair value each period reported in earnings, which may have an adverse effect on the market price of our common stock.

In accordance with generally accepted accounting principles in the United States, we are required to evaluate our outstanding common stock warrants to determine whether they should be accounted for as a warrant liability or as equity. At each reporting period (i) the warrants will be reevaluated for proper accounting treatment as a liability or equity and (ii) the fair value of the liability of the warrants will be re-measured. The change in the fair value of the liability will be recorded as other income (expense) in our consolidated statement of operations and comprehensive loss. This accounting treatment may adversely affect the market price of our securities, as we may incur additional expense. In addition, changes in the inputs and assumptions for the valuation model we use to determine the fair value of such liability may have a material impact on the estimated fair value of the warrant liability. As a result, our financial statements and results of operations will fluctuate quarterly, based on various factors, many of which are outside of our control, including the share price of our common stock. We expect that we will recognize non-cash gains or losses on our warrants or any other similar derivative instruments in each reporting period and that the amount of such gains or losses could be material. The impact of changes in fair value on earnings may have an adverse effect on the market price of our common stock.

If we are unable to satisfy the continued listing requirements of the Nasdaq, our common stock could be delisted and the price and liquidity of our common stock may be adversely affected.

Our common stock may lose value and could be delisted from Nasdaq due to several factors or a combination of such factors. While our common stock is currently listed on Nasdaq, we can give no assurance that we will be able to satisfy the continued listing requirements of Nasdaq in the future, including, but not limited to, the corporate governance requirements and the minimum closing bid price requirement or the minimum equity requirement.

On February 1, 2023, we received a deficiency letter from the Nasdaq Listing Qualifications Department of Nasdaq notifying us that, for 30 consecutive business days, the closing bid price of our common stock was below the minimum \$1.00 per share required for continued listing pursuant to Nasdaq Listing Rule 5550(a)(2). The Nasdaq deficiency letter had no immediate effect on the listing of our common stock, and our common stock continued to trade on the Nasdaq under the symbol "PRSO." We were initially given 180 calendar days, or until July 31, 2023, to regain compliance with Nasdaq Listing Rule 5550(a)(2), which was extended by an additional 180 calendar days, or January 29, 2024. On January 2, 2024, we effected a reverse stock split of our issued and outstanding shares of common stock at a ratio of one post-split share for every 40 pre-split shares. On January 18,

2024, we received written confirmation from Nasdaq notifying us that we had regained compliance with Nasdaq Listing Rule 5550(a)(2).

There can be no assurance that we will be able to maintain compliance with the continued listing requirements for Nasdaq. If we fail to maintain compliance with any such continued listing requirement, there can also be no assurance that we will be able to regain compliance with any such continued listing requirement in the future or that our common stock will not be delisted in the future.

If we were to be delisted, we would expect our common stock to be traded in the over-the-counter market which could adversely affect the liquidity of our common stock. Additionally, we could face significant material adverse consequences, including:

- a limited availability of market quotations for our common stock;
- a decreased ability to issue additional securities or obtain additional financing in the future;

- reduced liquidity for our stockholders;
- potential loss of confidence by customers, collaboration partners and employees; and
- loss of institutional investor interest.

In the event of a delisting, we can provide no assurance that any action taken by us to restore compliance with listing requirements would allow our common stock to become listed again, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the Nasdaq minimum bid price requirement, or prevent future non-compliance with Nasdaq's listing requirements.

Item 1B. Unresolved Staff Comments.

None.

Item 1C. Cybersecurity.

Risk Management and Strategy

We have established policies and processes for assessing, identifying, and managing material risk from cybersecurity threats and integrated these processes into our overall risk management systems and processes. We assess material risks from cybersecurity threats, including any potential unauthorized occurrence on or conducted through our information systems that may result in adverse effects on the confidentiality, integrity, or availability of our information systems or any information residing therein.

We conduct technical risk assessments to identify cybersecurity threats, as well as assessments in the event of a material change in our business practices that may affect information systems that are vulnerable to such cybersecurity threats. We also plan to conduct programmatic risk assessments including identification of reasonably foreseeable internal and external risks, the likelihood and potential damage that could result from such risks, and the sufficiency of existing policies, procedures, systems, and safeguards in place to manage such risks.

Following these risk assessments, we will evaluate whether and how to re-design, implement, and maintain reasonable safeguards to minimize identified risks; evaluate how to reasonably address any identified gaps in existing safeguards; and regularly monitor the effectiveness of our safeguards. Our Manager of Information Technology, who has over 20 years of information technology experience, and our Chief Operating Officer, who has over 10 years of information technology management experience, manage the risk assessment and mitigation process.

As part of our overall risk management system, we monitor and test our safeguards and train our employees on these safeguards, in collaboration with human resources, information technology and management. Personnel at all levels and departments are made aware of our cybersecurity policies through internal communications, training and annual policy updates, and are requested to promptly report any suspected breach of our information systems to management.

For additional information regarding whether any risks from cybersecurity threats, including as a result of any previous cybersecurity incidents, have materially affected or are reasonably likely to materially affect us, including our business strategy, results of operations, or financial condition, please refer to Item 1A, "Risk Factors," in this Report on Form 10-K, including the risk factors entitled *"Third parties might attempt to gain unauthorized access to our network or seek to compromise our products and services."*

Governance

A role of our board of directors is informed oversight of our risk management process, including risks from cybersecurity threats. Our board of directors is responsible for monitoring and assessing strategic risk exposure, and our management is responsible for the day-to-day management of the material risks we face. Our board of directors administers its cybersecurity risk function in coordination with the oversight and periodic review of the audit committee. In the event of a cybersecurity incident impacting us, management will report to our board of directors and provide updates on management's incident response plan for addressing and mitigating any risks associated with such an incident.

Our cybersecurity incident response and vulnerability management policies are designed to escalate certain cybersecurity incidents and threats to management members depending on the circumstances, including the Chief Executive Officer and Chief Financial Officer. The Chief Executive Officer and Chief Financial Officer work with our incident response team in an effort to help the Company mitigate and remediate cybersecurity incidents of which they are notified. In addition, the Company's management and its designees report to the board of directors for certain cybersecurity incidents.

Our board of directors will receive periodic reports from management and its designees concerning our significant cybersecurity threats and risks, and the processes we plan to implement and/or have implemented in an effort to address them.

Item 2. Properties.

We currently maintain leased facilities for our administrative, sales, marketing, support and research and development functions. We believe that

our existing facilities are adequate to meet our current needs. The table below summarizes our leased facilities.

Location	Square Footage (approximate)	Lease Expiration
Markham, Ontario, Canada	9,500	September 2027
Toronto, Ontario, Canada	12,700	December 2024
San Jose, California	10,000	January 2025

Item 3. Legal Proceedings.

The information set forth under the “Legal Matters” subheading in Note 5 (Commitments and Contingencies) of the Notes to Consolidated Financial Statements in Part II, Item 15, of this Report is incorporated herein by reference.

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 Information for Common Stock

Our common stock is currently listed on the Nasdaq Stock Market under the symbol “PRSO.”

Holders of Record

As of December 31, 2023, there were 67 holders of record of our common stock and 58 holders of record of our exchangeable shares. The actual number of common stockholders is significantly greater than this number of record stockholders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees. This number of stockholders of record also does not include stockholders whose shares may be held in trust by other entities.

Securities Authorized for Issuance under Equity Compensation Plan

For information regarding securities authorized for issuance under equity compensation plans, please refer to Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

Item 6. [Reserved]

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

This Management’s Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with the accompanying consolidated financial statements and notes included in this Report. Some of the information contained in this discussion and analysis or set forth elsewhere in this Report, including information with respect to our plans and strategy for our business, include forward-looking statements that involve risks and uncertainties. You should review “Risk Factors” for a discussion of important factors that could cause our actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We were formerly known as MoSys, Inc. (“MoSys”), and we were incorporated in California in 1991 and reincorporated in 2000 in Delaware. On September 14, 2021, we and our subsidiaries, 2864552 Ontario Inc. and 2864555 Ontario Inc., entered into an Arrangement Agreement (the “Arrangement Agreement”) with Peraso Technologies Inc. (“Peraso Tech”), a corporation existing under the laws of the province of Ontario, to acquire all of the issued and outstanding common shares of Peraso Tech (the “Peraso Shares”), including those Peraso Shares to be issued in connection with the conversion or exchange of secured convertible debentures and common share purchase warrants of Peraso Tech, as applicable, by way of a statutory plan of arrangement (the “Arrangement”) under the Business Corporations Act (Ontario). On December 17, 2021, following the satisfaction of the closing conditions set forth in the Arrangement Agreement, the Arrangement was completed and we changed our name to “Peraso Inc.” and began trading on the Nasdaq Stock Market (the “Nasdaq”) under the symbol “PRSO.”

Our strategy and primary business objective is to be a profitable, IP-rich fabless semiconductor company offering integrated circuits, or ICs, antenna modules and related non-recurring engineering services. We specialize in the development of mmWave semiconductors, primarily in the unlicensed 60 GHz spectrum band for 802.11ad/ay-compliant devices and in the 28/39 GHz spectrum bands for 5G-compliant devices. We derive our revenue from selling semiconductor devices, as well as antenna modules based on using those mmWave semiconductor devices. We have pioneered a high-volume mmWave IC production test methodology using standard, low-cost production test equipment. It has taken us several years to refine performance of this production test methodology, and we believe this places us in a leadership position in addressing operational challenges of delivering mmWave products into high-volume markets. We also produce and sell complete mmWave antenna modules. The primary advantage provided by our antenna modules is that our proprietary mmWave ICs and the antenna are integrated into a single device. A differentiating characteristic of mmWave technology is that the RF amplifiers must be as close as possible to the antenna to minimize loss. With our module, we can guarantee the performance of the amplifier/antenna interface and simplify customers’ radio frequency (“RF”) engineering, facilitating more opportunities for customer prospects that have not provided RF-type systems, as well as shortening the time to market for new products.

We also acquired a memory product line comprising our Bandwidth Engine IC products. These products integrate our proprietary, 1T-SRAM high-density embedded memory and a highly-efficient serial interface protocol resulting in a monolithic memory IC solution optimized for memory bandwidth and transaction access performance. Taiwan Semiconductor Manufacturing Corporation, or TSMC, is the sole foundry that manufactures the wafers used to produce our memory IC products. TSMC has informed us that it would be discontinuing the foundry process used to produce wafers, in turn, necessary to manufacture our memory ICs. As a result, in May 2023, we initiated an end-of-life, or EOL, of our memory IC products. We notified our

customers to provide purchase orders by December 22, 2023, and we commenced initial EOL shipments during the quarter ended September 30, 2023. We have requested customers to pay a deposit upon purchase order placement to reserve supply and provide funding for our required inventory purchases. In addition, we have requested customers to accelerate payments to improve our cash flows. Under our EOL plan, we expect shipments of our memory products to continue until at least December 31, 2024. However, the timing of EOL shipments will be dependent on receipt of purchase orders from customers, deliveries from our suppliers, and the delivery schedules requested by our customers.

We incurred net losses of approximately \$16.8 million and \$32.4 million for the years ended December 31, 2023 and 2022, respectively, and we had an accumulated deficit of approximately \$166.4 million as of December 31, 2023. These and prior year losses have resulted in significant negative cash flows and historically have required us to raise substantial amounts of additional capital. As discussed below, this raises significant doubt about our ability to continue as a going concern. We will need to increase revenues substantially beyond levels that we have attained in the past in order to generate sustainable operating profit and sufficient cash flows to continue doing business without raising additional capital from time to time.

Recent Developments

Cost Reductions

In November 2023, we implemented a reduction in our workforce and eliminated three full-time equivalent positions, which included one employee and two consultants. In addition, we initiated a temporary lay-off in Canada of 16 positions, all intended to preserve cash while keeping capital expenditures to minimum levels in order to reduce operating costs and our short-term cash needs.

Reverse Stock Split

On December 15, 2023, at our annual meeting of stockholders, our stockholders approved a certificate of amendment to our Second Amended and Restated Certificate of Incorporation (the "Charter Amendment") to effect a reverse stock split of our outstanding shares of common stock at a ratio to be determined by our board of directors. On December 15, 2023, we filed the Charter Amendment with the Secretary of State of Delaware which effected a 1-for-40 reverse stock split of our outstanding shares of common stock as of 4:01 p.m. Eastern Time on January 2, 2024. As a result of the reverse stock split, every forty shares of common stock were combined into one issued and outstanding share of common stock, with no change in the \$0.001 par value per share. Holders of fractional shares received, in lieu of any fractional share, the number of shares rounded up to the next whole number. All equity awards outstanding and common stock reserved for issuance under our equity incentive plans and warrants outstanding immediately prior to the reverse stock split were appropriately adjusted by dividing the number of affected shares of common stock by 40 and, as applicable, multiplying the exercise price by 40, as a result of the reverse stock split. Exchangeable shares, which can be converted to common stock at any time by their respective holders, were also adjusted to reflect the reverse stock split.

Compliance with Nasdaq Minimum Bid Price Requirement

On January 18, 2024, we received a notification letter from the Listing Qualifications Department of the Nasdaq Stock Market notifying us that we had regained compliance with the minimum bid price requirement set forth under Nasdaq Listing Rule 5550(a)(2).

Termination of Advisory Agreement Related to Strategic Alternative Exploration

In August 2023, we engaged an investment bank to assist with the exploration of strategic alternatives, including a merger, sale of assets or other similar transaction, with the intention to maximize stockholder value and further our business operations. In January 2024, we terminated such advisory agreement. We currently have no commitments or agreements and are not negotiating with any parties relating to a merger, sale of assets or other similar transaction with us.

Public Offering

On February 6, 2024, we entered into an underwriting agreement (the "Underwriting Agreement") with Ladenburg Thalmann & Co. Inc., as the sole underwriter (the "Underwriter"), relating to the issuance and sale in a public offering (the "Offering") of: (i) 480,000 shares of our common stock, (ii) pre-funded warrants to purchase up to 1,424,760 shares of our common stock, (iii) Series A warrants to purchase up to 3,809,520 shares of our common stock, (iv) Series B warrants to purchase up to 3,809,520 shares of our common stock, and (v) up to 285,714 additional shares of our common stock, Series A warrants to purchase up to 571,428 shares of our common stock and Series B warrants to purchase up to 571,428 shares of our common stock, which may be purchased pursuant to a 45-day option to purchase additional securities granted to the Underwriter by the Company. The Underwriter partially exercised this option on February 7, 2024 for 82,500 shares of common stock, Series A warrants to purchase up to 165,000 shares of common stock and Series B warrants to purchase up to 165,000 shares of common stock. The combined public offering price of each share of common stock, together with the accompanying Series A warrants and Series B warrants, was \$2.10, less underwriting discounts and commissions. The combined public offering price of each pre-funded warrant, together with the accompanying Series A warrants and Series B warrants, was \$2.099, less underwriting discounts and commissions.

The Offering, including the additional shares of common stock, Series A warrants and Series B warrants sold pursuant to the partial exercise of the Underwriter's option, closed on February 8, 2024.

The net proceeds from the Offering, including the additional shares of common stock, Series A warrants and Series B warrants sold pursuant to the partial exercise of the Underwriter's option, after deducting underwriting discounts and commissions and other estimated Offering expenses payable by us and excluding any net proceeds from the exercise of the Series A warrants, Series B warrants and pre-funded warrants, were approximately \$3.4 million.

The Series A warrants and Series B warrants each have an exercise price of \$2.25 per share and are immediately exercisable upon issuance. The Series A warrants expire on the five-year anniversary of the date of issuance and the Series B warrants expire on the six-month anniversary of the date of issuance. The pre-funded warrants have an exercise price of \$0.001 per share, are exercisable immediately and may be exercised at any time until all of the pre-funded warrants are exercised in full. Subsequent to the closing of the Offering, as of March 18, 2024, the holders exercised pre-funded warrants for 1,001,110 shares of common stock.

On February 8, 2024, pursuant to the Underwriting Agreement, we issued warrants to the Underwriter to purchase up to 139,108 shares of our common stock at an exercise price of \$2.625, subject to adjustments, which are exercisable at any time and from time to time, in whole or in part, until

February 8, 2029, and have substantially similar terms to the Series A warrants.

All securities issued in the Offering (including the shares of common stock issuable from time to time upon exercise of the warrants) were offered pursuant to our registration statement on Form S-1, as amended (File No. 333-276247), which became effective on February 6, 2024, including a prospectus contained therein.

COVID-19 and World Unrest

The global outbreak of the coronavirus disease 2019 (COVID-19) was declared a pandemic by the World Health Organization and a national emergency by the U.S. government in March 2020. This negatively affected the U.S. and global economy, disrupted global supply chains, significantly restricted travel and transportation, resulted in mandated closures and orders to “shelter-in-place” and created significant disruption of the financial markets. While the U.S. national emergency expired in May 2023 and substantially all closures and “shelter-in-place” orders have ended, there can be no assurance that the COVID-19 pandemic will not impact our operational and financial performance in the future, as the duration and spread of the pandemic and related actions taken by U.S. and foreign government agencies to prevent disease spread are uncertain, out of our control, and cannot be predicted.

World unrest due to wars and terrorist attacks have led to further economic disruptions. Mounting inflationary cost pressures and recessionary fears have negatively impacted the global economy. Since mid-2022, at times, the U.S. Federal Reserve has addressed elevated inflation by increasing interest rates. Market conditions may prevent us from accessing the capital markets, and additional capital may only be available to us on terms that could be significantly detrimental to our existing stockholders and to our business.

Critical Accounting Policies and Estimates

The discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States (GAAP). The preparation of these consolidated financial statements requires us to make certain estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses. On an ongoing basis we make these estimates based on our historical experience and on assumptions that we consider reasonable under the circumstances. Actual results may differ from these estimates and reported results could differ under different assumptions or conditions. Our significant accounting policies and estimates are disclosed in Note 1 of the “Notes to Consolidated Financial Statements” as of and for the years ended December 31, 2023 and 2022 included elsewhere in this Report. As of December 31, 2023, there have been no material changes to our significant accounting policies and estimates.

Business Combination

We allocate the fair value of purchase consideration to the tangible assets acquired, liabilities assumed and intangible assets acquired based on their estimated fair values. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is recorded as goodwill to reporting units based on the expected benefit from the business combination. Allocation of purchase consideration to identifiable assets and liabilities affects the amortization expense, as acquired finite-lived intangible assets are amortized over the useful life, whereas any indefinite-lived intangible assets, including goodwill, are not amortized. During the measurement period, which is not to exceed one year from the acquisition date, our records adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Upon the conclusion of the measurement period, any subsequent adjustments are recorded to earnings. Acquisition-related expenses are recognized separately from business combinations and are expensed as incurred.

Acquired Intangibles

Acquired intangible assets consist of developed technology and customer relationships that are measured at fair value at date of acquisition. In valuing acquired intangible assets, we make assumptions and estimates based in part on projected financial information, which makes assumptions and estimates inherently uncertain, particularly for early-stage technology companies. The significant estimates and assumptions used by us in the determination of the fair value of acquired intangible technology assets include the revenue growth rate, the royalty rate and the discount rate. The significant estimates and assumptions used by us in the determination of the fair value of acquired customer contract intangible assets include the revenue growth rate and the discount rate.

As a result of the judgments that need to be made, we obtain the assistance of independent valuation firms. We complete these assessments as soon as practical after the closing dates. Any excess of the purchase price over the estimated fair values of the identifiable net assets acquired is recorded as goodwill.

Revenue Recognition

We recognize revenue in accordance with FASB ASC Topic 606, *Revenue from Contracts with Customers*, and its amendments (ASC 606). As described below, the analysis of contracts under ASC 606 supports the recognition of revenue at a point in time, resulting in revenue recognition timing that is materially consistent with our historical practice of recognizing product revenue when title and risk of loss pass to the customer.

We generate revenue primarily from sales of integrated circuits and module products, performance of engineering services and licensing of its intellectual property. Revenues are recognized when control is transferred to customers in amounts that reflect the consideration we expect to be entitled to receive in exchange for those goods. Revenue recognition is evaluated through the following five steps: (i) identification of the contract, or contracts, with a customer; (ii) identification of the performance obligations in the contract; (iii) determination of the transaction price; (iv) allocation of the transaction price to the performance obligations in the contract; and (v) recognition of revenue when or as a performance obligation is satisfied.

Product revenue

Revenue is recognized when performance obligations under the terms of a contract with a customer are satisfied. The majority of our contracts have a single performance obligation to transfer products. Accordingly, we recognize revenue when title and risk of loss have been transferred to the customer, generally at the time of shipment of products. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring products and is generally based upon a negotiated, formula, list or fixed price. We sell our products both directly to customers and through distributors generally under agreements with payment terms typically 60 days or less.

We may record an estimated allowance, at the time of shipment, for future returns and other charges against revenue consistent with the terms of sale.

Royalty and other

Our licensing contracts typically provide for royalties based on the licensee's use of our memory technology in its currently shipping commercial products. We estimate its royalty revenue in the calendar quarter in which the licensee uses the licensed technology. Payments are received in the subsequent quarter. We also generate revenue from licensing its technology. We recognize License fee as revenue at the point of time when the control of the license has been transferred and we have no continuing performance obligations to the customer.

Engineering services revenue

Engineering and development contracts with customers generally contain a single performance obligation that is delivered over time. Revenue is recognized using an output method that is consistent with the satisfaction of the performance obligation as a measure of progress.

Deferred cost of net revenue

During the year ended December 31, 2022, the Company had \$1.1 million of product shipments for which the revenue recognition criteria under ASC 606 had not been met. Accordingly, the Company deferred the cost of net revenue associated with these shipments, and the amount deferred was presented as deferred cost of net revenue in the consolidated balance sheets as of December 31, 2022. During the three months ended March 31, 2023, the Company recognized the associated revenue and cost of net revenue.

Contract liabilities - deferred revenue

Our contract liabilities consist of advance customer payments and deferred revenue. We classify advance customer payments and deferred revenue as current or non-current based on the timing of when we expect to recognize revenue. As of December 31, 2023 and 2022, contract liabilities were in a current position and included in deferred revenue.

Fair Value Measurements of Financial Instruments

We measure the fair value of financial instruments using a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels, as follows:

- Level 1-Inputs used to measure fair value are unadjusted quoted prices that are available in active markets for the identical assets or liabilities as of the reporting date.
- Level 2-Pricing is provided by third party sources of market information obtained from investment advisors rather than models. We do not adjust for or apply any additional assumptions or estimates to the pricing information we receive from advisors. Our Level 2 securities include cash equivalents and available-for-sale securities, which consisted primarily of corporate debt, and government agency and municipal debt securities from issuers with high quality credit ratings. Our investment advisors obtain pricing data from independent sources, such as Standard & Poor's, Bloomberg and Interactive Data Corporation, and rely on comparable pricing of other securities because the Level 2 securities we hold are not actively traded and have fewer observable transactions. We consider this the most reliable information available for the valuation of the securities.
- Level 3-Unobservable inputs that are supported by little or no market activity and reflect the use of significant management judgment are used to measure fair value. These values are generally determined using pricing models for which the assumptions utilize management's estimates of market participant assumptions. The determination of fair value for Level 3 investments and other financial instruments involves the most management judgment and subjectivity.

The carrying amounts of financial assets and liabilities, such as cash and cash equivalents, accounts receivable, accounts payable, notes payable and other payables, approximate their fair values because of the short maturity of these instruments. The carrying values of lease obligations and long-term financing obligations approximate their fair values because interest rates on these obligations are based on prevailing market interest rates. We measure the fair value of our warrant liabilities using Level 3 inputs.

Valuation of long-lived assets

We evaluate our long-lived assets for impairment at least annually, or more frequently when a triggering event is deemed to have occurred. This assessment is subjective in nature and requires significant management judgment to forecast future operating results, projected cash flows and current period market capitalization levels. If our estimates and assumptions change in the future, it could result in a material write-down of long-lived assets. We amortize our finite-lived intangible assets, such as developed technology and patent license, on a straight-line basis over their estimated useful lives of three to seven years. We recognize an impairment charge as the difference between the net book value of such assets and the fair value of the assets on the measurement date.

Deferred tax valuation allowance

When we prepare our consolidated financial statements, we estimate our income tax liability for each of the various jurisdictions where we conduct business. This requires us to estimate our actual current tax exposure and to assess temporary differences that result from differing treatment of certain items for tax and accounting purposes. These differences result in deferred tax assets, which we show on our consolidated balance sheet under the category of other assets. The net deferred tax assets are reduced by a valuation allowance if, based upon weighted available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. We must make significant judgments to determine our provision for income taxes, our deferred tax assets and liabilities and any valuation allowance to be recorded against our net deferred tax asset. We believe that utilization of our net operating loss and tax credit carryforwards, which comprise the majority of our deferred tax assets, may be subject to a substantial annual limitation due to the ownership change limitations provided by the Internal Revenue Code and similar state provisions. See Note 4 to the consolidated financial statements in Item 15 of this report for an additional description of these limitations.

Derivatives and liability-classified instruments

We account for common stock warrants as either equity-classified or liability-classified instruments based on an assessment of the specific terms of the warrants and the guidance provided by FASB ASC 480, *Distinguishing Liabilities from Equity* (ASC 480) and ASC 815, *Derivatives and Hedging* (ASC 815). The assessment considers whether the warrants are freestanding financial instruments pursuant to ASC 480, meet the definition of a liability pursuant to ASC 480, and meet all of the requirements for equity classification under ASC 815, including whether the warrants are indexed to our stock

and whether the holders of the warrants could potentially require net cash settlement in a circumstance outside of our control, among other conditions for equity classification. This assessment, which requires the use of professional judgment, is conducted at the time of warrant issuance and as of each subsequent quarterly period end date while the warrants are outstanding.

Stock-based compensation

We recognize stock-based compensation for equity awards on a straight-line basis over the requisite service period, usually the vesting period, based on the grant-date fair value. We estimate the value of employee stock options on the date of grant using the Black-Scholes option pricing model. The determination of fair value of share-based payment awards on the date of grant using an option pricing model is affected by our stock price, as well as assumptions regarding a number of highly complex and subjective variables. These variables include, but are not limited to, the expected stock price volatility over the term of the awards, and actual and projected employee stock option exercise behaviors. The expected term of options granted is derived from historical data on employee exercises and post-vesting employment termination behavior. The expected volatility is based on the historical volatility of our stock price.

Results of Operations

Net Revenue

	Years Ended December 31,		Year-Over-Year Change	
	2023	2022	2022 to 2023	
	(dollar amounts in thousands)			
Product	\$ 12,853	\$ 14,199	\$ (1,346)	(9)%
Percentage of total net revenue	93%	96%		

The following table details revenue by product category:

(amounts in thousands)	Years Ended December 31,		Year-Over-Year change
Product category	2023	2022	
Memory ICs	\$ 8,446	\$ 7,722	724
mmWave ICs	2,726	3,289	(563)
mmWave modules	1,677	3,170	(1,493)
mmWave other products	4	18	(14)
	<u>\$ 12,853</u>	<u>\$ 14,199</u>	<u>\$ (1,346)</u>

Product revenue decreased for the year ended December 31, 2023 compared with the same period of 2022 primarily due to the decrease in shipments of our mmWave ICs and antenna modules, which was partially offset by increases in EOL shipments of our memory IC products. We initiated price increases on certain of our antenna module products in 2022, however, through December 31, 2023, we had not realized any material increase in revenue as a result of those price increases.

We expect revenues to increase in 2024, as we anticipate increased sales of our memory IC products, based on EOL purchase orders received from customers to date. In addition, we expect sales of our mmWave products to increase from a volume and revenue perspective over the next 12 months, as we expect new customers to commence production during 2024.

	Years Ended December 31,		Year-Over-Year Change	
	2023	2022	2022 to 2023	
	(dollar amounts in thousands)			
Royalty and other	\$ 896	\$ 669	\$ 227	34%
Percentage of total net revenue	7%	4%		

Royalty and other includes royalty, non-recurring engineering services and license revenues. The increase in royalty and other revenue for the year ended December 31, 2023 compared with the same period of 2022 was due to an increase in non-recurring engineering services revenue related to our mmWave technology combined with a modest increase in royalties from licensees of our memory technology.

Cost of Net Revenue and Gross Profit

	Years Ended December 31,		Year-Over-Year Change	
	2023	2022	2022 to 2023	
	(dollar amounts in thousands)			
Cost of net revenue	\$ 11,877	\$ 8,915	\$ 2,962	33%
Percentage of total net revenue	86%	60%		

Cost of net revenue is primarily comprised of direct and indirect costs related to the sale of our products, including amortization of intangible assets and depreciation of production-related fixed assets.

Cost of net revenue increased for the year ended December 31, 2023 when compared with the same period in 2022, due to the increase in sales of our memory IC products and inventory write-down charges, as partially offset by a decrease in sales of our mmWave IC and module products. The inventory write-down charges recorded during 2023 totaled approximately \$3.5 million and comprised approximately \$0.5 million related to memory IC product inventory and \$3.0 million related to mmWave product inventory. The write-downs were primarily attributable to inventory identified as excess and obsolete based on inventory expiration and customer purchase orders received to date and current customer forecasts. If our utilization of inventory is, or if our estimates of our inventory's potential utility become, less favorable than currently expected, additional inventory write-downs may be required.

	Years Ended December 31,		Year-Over-Year Change	
	2023	2022	2022 to 2023	
	(dollar amounts in thousands)			
Gross profit	\$ 1,872	\$ 5,953	\$ (4,081)	(69)%
Percentage of total net revenue	14%	40%		

Gross profit decreased for the year ended December 31, 2023 compared with the same period in 2022 due to inventory write-down charges and decreased mmWave product shipments, partially offset by increases in memory IC product shipments. The decrease in our gross profit margin for the year ended December 31, 2023 compared with the prior year periods was primarily attributable to the inventory write-down charges incurred during 2023.

Research and Development (R&D)

	Years Ended December 31,		Year-Over-Year Change	
	2023	2022	2022 to 2023	
	(dollar amounts in thousands)			
Research and development	\$ 14,398	\$ 19,768	\$ (5,370)	(27)%
Percentage of total net revenue	105%	133%		

Our R&D expenses include costs related to the development of our products. We expense R&D costs as they are incurred.

The decrease for the year ended December 31, 2023 compared with the same period of 2022 was primarily due to reduced salary and consulting costs. During the quarter ended December 31, 2022, we began implementing cost reductions, which included a reduction of consulting positions and the elimination of certain employee positions in February 2023, as well as targeted reductions in certain longer-term research and development projects. In August 2022, we entered into a Technology License and Patent Assignment Agreement, or the Agreement, with Intel Corporation, or Intel, and as a result we transferred certain employees and consultants to Intel. As a result of the Agreement and other cost reductions, our memory-related R&D expenses declined by approximately \$1.2 million for the year ended December 31, 2023. In addition, during the year ended December 31, 2022, we incurred mask fabrication (i.e., tape-out) expenses of \$0.7 million for one of our mmWave ICs, and we incurred no mask fabrication costs in 2023.

In November 2023, we implemented a reduction in our workforce and eliminated three full-time equivalent positions, which included one employee and two consultants. In addition, we initiated a temporary lay-off in Canada of 16 positions, all intended to preserve cash while keeping capital expenditures to minimum levels in order to reduce operating costs and our short-term cash needs. We expect that total R&D expenses will decrease during 2024 compared with 2023, as a result of our cost reduction initiatives initiated during 2022 and 2023.

Selling, General and Administrative (SG&A)

	Years Ended December 31,		Year-Over-Year Change	
	2023	2022	2022 to 2023	
	(dollar amounts in thousands)			
SG&A	\$ 8,505	\$ 11,108	\$ (2,603)	(23)%
Percentage of total net revenue	62%	75%		

Selling, general and administrative, or SG&A, expenses consist primarily of personnel and related overhead costs for sales, marketing, finance, human resources and general management and amortization of certain intangible assets.

The decrease for the year ended December 31, 2023 compared with the same period of 2022 was primarily related to cost reductions, which we initiated during the three months ended December 31, 2022. The reductions in SG&A expense in 2023 primarily resulted from lower headcount, including the elimination of certain employee and consulting positions and reductions of other discretionary operating expenses.

We expect that total SG&A expense will decrease for the remainder of 2023 compared with 2022 due to our continued cost reduction initiatives, including headcount reductions.

Liquidity and Capital Resources; Changes in Financial Condition

At December 31, 2023, we had cash and cash equivalents totaling \$1.6 million compared with cash, cash equivalents and investments of \$2.9 million as of December 31, 2022.

In 2023, we used \$4.7 million in cash from operating activities, which primarily resulted from our net loss of \$16.8 million and changes to operating assets and liabilities of approximately \$2.8 million, adjusted for non-cash charges and gains, including stock-based compensation expenses of \$5.2 million, and depreciation and amortization expenses of \$3.8 million, \$3.6 million in inventory write-downs and \$0.3 million of asset impairment charges, partially offset by a \$3.5 million non-cash gain on the change in fair value of warrant liability and \$0.1 million of other changes. The changes in assets and liabilities primarily related to the timing of the collection of receivables from customers, payments to vendors and increases in inventory balances.

In 2022, we used \$16.0 million in cash from operating activities, which primarily resulted from the net loss of \$32.4 million and changes to operating assets and liabilities of approximately \$2.4 million, adjusted for non-cash charges and gains, including stock-based compensation expenses of \$5.7 million, depreciation and amortization expenses of \$3.1 million, a \$9.9 million goodwill impairment charge and \$0.1 million of other changes. The changes in assets and liabilities primarily related to the timing of the collection of receivables from customers, payments to vendors and increases in inventory balances.

In 2023, net cash provided from investing activities of \$1.0 million represented \$1.1 million of proceeds from maturities and sales of short-term investments, partially offset by \$0.1 million of purchases of fixed assets.

In 2022, net cash provided from investing activities of \$10.0 million represented \$11.5 million of proceeds from maturities and sales of short-term investments, partially offset by \$0.5 million purchases of short and long-term investments and \$1.0 million of purchases of fixed assets and intangible assets.

In 2023, net cash provided by financing activities was \$3.4 million and consisted of \$3.6 million in net proceeds from a registered direct offering of

our common stock and common stock purchase warrants completed in June 2023, partially offset by taxes paid to net share settle equity awards and repayment of finance lease liabilities.

In 2022, net cash provided by financing activities was \$1.9 million and consisted of \$2.1 million in net proceeds from a registered direct offering of our common stock and common stock purchase warrants completed in November 2022, partially offset by \$0.1 million of taxes paid to net share settle equity awards and \$0.1 million of repayment of finance lease.

Our future liquidity and capital requirements are expected to vary from quarter-to-quarter, depending on numerous factors, including:

- level of revenue;
- cost, timing and success of technology development efforts;
- inventory levels, as supply chain disruption has required us to maintain higher inventory levels and place purchase orders with our suppliers longer into the future, which exposes us to additional inventory risk;
- timing of product shipments, which may be impacted by supply chain disruptions;
- length of billing and collection cycles, which may be impacted in the event of a global recession or economic downturn;
- fabrication costs, including mask costs, of our ICs, currently under development;
- variations in manufacturing yields, material lead time and costs and other manufacturing risks;
- costs of acquiring other businesses and integrating the acquired operations; and
- profitability of our business.

Purchase Obligations

The Company's primary purchase obligations include non-cancelable purchase orders for inventory and computer-aided-design (CAD) software. At December 31, 2023, the Company had outstanding non-cancelable purchase orders for inventory, primarily wafers and substrates, and related expenditures of approximately \$2.3 million and non-cancelable purchase orders for CAD software of \$3.1 million over 24 months.

Going Concern - Working Capital

We incurred net losses of approximately \$16.8 million and \$32.4 million for the years ended December 31, 2023 and 2022, respectively, and we had an accumulated deficit of approximately \$166.4 million as of December 31, 2023. These and prior year losses have resulted in significant negative cash flows and have required us to raise substantial amounts of additional capital. To date, we have primarily financed our operations through loans, offerings of common stock and warrants and issuances of convertible notes.

We expect to continue to incur operating losses during 2024, as we continue to secure new customers for and continue to invest in the development of our products. Further, we expect our cash expenditures to continue to exceed receipts for at least the next 12 months, as our revenues will not be sufficient to offset our operating expenses.

We will need to increase revenues beyond the levels that we have attained in the past in order to generate sustainable operating profit and sufficient cash flows to continue doing business without raising additional capital from time to time. As a result of our expected operating losses and cash burn and recurring losses from operations, if we are unable to raise sufficient capital through additional debt or equity arrangements, there will be uncertainty regarding our ability to maintain liquidity sufficient to operate our business effectively, which raises substantial doubt as to our ability to continue as a going concern within one year from the date of issuance of these consolidated financial statements. The consolidated financial statements presented in Item 8 of this Report have been prepared assuming that we will continue as a going concern, and do not include any adjustments that might result from the outcome of this uncertainty. There can be no assurance that such additional capital, whether in the form of debt or equity financing, will be sufficient or available and, if available, that such capital will be offered on terms and conditions acceptable to us. We are currently seeking additional financing in order to meet our cash requirements for the foreseeable future. If we are unsuccessful in these efforts, we will need to implement additional cost reduction strategies, which could further affect its near- and long-term business plan. These efforts may include, but are not limited to, reducing headcount and curtailing business activities. As further discussed in Note 13 to the consolidated financial statements, in February 2024, we completed a public offering of our common stock and warrants for net proceeds of approximately \$3.3 million. Further, in November 2023, we implemented a reduction in our workforce and eliminated three full-time equivalent positions, which included one employee and two consultants. In addition, we initiated a temporary lay-off in Canada of 16 positions. The initial cost reduction benefits from the November 2023 actions began to be realized during the three months ended December 31, 2023, and we expect annualized savings of up to approximately \$2.2 million dollars, if we do not recall the impacted employees. These cost reduction actions are intended to preserve cash while keeping capital expenditures to minimum levels in order to reduce operating costs and our short-term cash needs.

If we were to raise additional capital through sales of our equity securities, our stockholders would suffer dilution of their equity ownership. If we engage in debt financing, we may be required to accept terms that restrict our ability to incur additional indebtedness, prohibit us from paying dividends, repurchasing our stock or making investments, and force us to maintain specified liquidity or other ratios, any of which could harm our business, operating results and financial condition. If we need additional capital and cannot raise it on acceptable terms, we may not be able to, among other things:

- develop or enhance our products;
- continue to expand our product development and sales and marketing organizations;
- acquire complementary technologies, products or businesses;
- expand operations, in the United States or internationally;

- hire, train and retain employees; or
- respond to competitive pressures or unanticipated working capital requirements.

Our failure to do any of these things could seriously harm our ability to execute our business strategy and may force us to curtail our existing operations.

Off-Balance Sheet Arrangements

We do not maintain any off-balance sheet arrangements or obligations that are reasonably likely to have a material current or future effect on our financial condition, results of operations, liquidity or capital resources.

Indemnifications

In the ordinary course of business, we enter into contractual arrangements under which we may agree to indemnify the counter-party from losses relating to a breach of representations and warranties, a failure to perform certain covenants, or claims and losses arising from certain external events as outlined within the contract, which may include, for example, losses arising from litigation or claims relating to past performance. Such indemnification clauses may not be subject to maximum loss clauses. We have also entered into indemnification agreements with our officers and directors. No material amounts related to these indemnifications are reflected in our consolidated financial statements for the years ended December 31, 2023 or 2022.

Recent Accounting Pronouncements

See Note 1 to the consolidated financial statements in Item 15 of this Report for a description of recent accounting pronouncements.

Item 8. Financial Statements and Supplementary Data.

Reference is made to the consolidated financial statements listed under the heading (a) (1) Consolidated Financial Statements and Report of Independent Registered Public Accounting Firm of Item 15, which consolidated financial statements are incorporated by reference in response to this Item 8.

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

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our chief executive officer and chief financial officer, we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act. Based on this evaluation, our management concluded that as of December 31, 2023, our disclosure controls and procedures were effective.

Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. 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, and management necessarily is required to apply its judgment in evaluating the cost-benefit relationship of possible controls. Under the supervision and with the participation of our management, including our chief executive officer and chief financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control-Integrated Framework (2013 Framework)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2023.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the fourth fiscal quarter of 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

None of the Company's directors or officers adopted, modified or terminated a Rule 10b5-1 trading arrangement or a non-Rule 10b5-1 trading arrangement during the Company's fiscal quarter ended December 31, 2023, as such terms are defined under Item 408(a) of Regulation S-K.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not Applicable.

Part III

Item 10. Directors, Executive Officers and Corporate Governance.

The names of our directors and certain information about each of them are set forth below.

Name	Age	Position(s) with the Company
Ronald Glibbery	62	Chief Executive Officer and Director
Daniel Lewis	74	Director
Ian McWalter(1)(2)	72	Director
Andreas Melder(1)(2)	65	Director
Robert Y. Newell(1)(2)	75	Director

(1) Member of Audit Committee

(2) Member of Compensation Committee

The principal occupations and positions for at least the past five years of our directors are described below. There are no family relationships among any of our directors or executive officers.

Ronald Glibbery. Mr. Glibbery was appointed as our chief executive officer and to our board of directors in December 2021. He founded Peraso Technologies Inc. (Peraso Tech) in 2008 and served as its chief executive officer. In June 2020, Peraso Tech applied for and obtained an order under the Companies' Creditors Arrangement Act (the CCAA), providing certain relief. Pursuant to the Initial Order issued by the Ontario Superior Court of Justice (Commercial List) (the Court), Ernst & Young Inc. was appointed as the Monitor of Peraso Tech. In addition, the Monitor, in its capacity as Foreign Representative, filed a voluntary petition in the United States under Chapter 15 of the U.S. Bankruptcy Code, seeking recognition of the CCAA proceeding. In October 2020, the Court granted an order authorizing the termination of Peraso Tech's CCAA proceedings upon the completion of certain defined steps. In December 2020, the United States Bankruptcy Court for the Southern District of New York issued an Order that: (i) recognized and gave full force and effect in the United States to the Court's order approving the Settlement Agreement; and (ii) terminated the Chapter 15 Proceedings. Mr. Glibbery has over 25 years of experience in the semiconductor industry. Prior to co-founding Peraso Tech, Mr. Glibbery held executive positions at Kleer Semiconductor, a fabless semiconductor company focused on wireless audio technology and Intellon Corporation (Intellon), a pioneer and leader in the development of semiconductor devices used for powerline communications. He has held other executive roles at Cogency Semiconductor, LSI Logic Canada, Inc. and LSI Logic Corporation. Mr. Glibbery holds a B.E.Sc. in Electrical and Electronics Engineering from the University of Western Ontario.

We believe that Mr. Glibbery's qualifications to serve on the board of directors include his service as an officer of ours and his extensive general management and technical expertise in the semiconductor industry, as well as his experience as a chief executive officer.

Daniel Lewis. Mr. Lewis has served as a member of the board of directors since September 2017. He served as our Vice President, General Manager of Memory Products from April 2022 until his retirement in December 2022. Mr. Lewis previously served as our President from August 2018 until April 2022 and chief executive officer from August 2018 until the business combination with Peraso Tech in December 2021. Before joining MoSys, Mr. Lewis served as the managing member and an owner of GMS Manufacturing Solution LLC, a firm focused on providing engineering services to manufacturing companies. He previously held various executive and leadership roles at View Box Group, Xicor, Integrated Device Technology, Accelerant Networks, Intel Corporation, Zilog and Digital Equipment Corporation. Mr. Lewis holds a B.S. in Electrical Engineering from the University of Michigan. We believe that Mr. Lewis's qualifications to serve on the board of directors include his service as an officer of ours and his extensive business experience, having held senior management positions at several companies in the semiconductor, computer and networking industries, which brings strategic and operational insight to the board of directors.

Ian McWalter. Dr. McWalter was appointed to our board of directors in December 2021. He currently serves as a member of the board of directors for Evertz Technologies, a publicly traded manufacturer of video and audio infrastructure solutions for television, telecom and new-media industries. Dr. McWalter served as the president and chief executive officer of CMC Microsystems from 2007 until 2018. Prior to this role, Dr. McWalter was chief executive officer of Toumaz Technology. Before joining Toumaz, Dr. McWalter spent 15 years at Gennum Corporation, including five years as president and chief executive officer from 2000 to 2005. Previously, he held management and technical positions at Bell Northern Research Ltd., the research and development arm of Northern Telecom and Bell Canada, and Plessey Semiconductors. Dr. McWalter was awarded a B.Sc. in physics and a Ph.D. in Electrical Engineering from the Imperial College of Science and Technology in London, England. We believe that Dr. McWalter's qualifications to serve on the board of directors include his extensive general management and technical expertise in the semiconductor industry, as well as his experience as a chief executive officer and his experience serving as a director on public-company boards of directors.

Andreas Melder. Mr. Melder was appointed to our board of directors in December 2021. He is a veteran technology executive in the semiconductor, communications and consumer electronics industries and previously served as vice president of business development at Gige Networks, which was acquired in 2011 by Broadcom, where he continued to serve in executive marketing roles. Prior to Broadcom, Mr. Melder served as senior vice president of sales, marketing and business development for Intellon, which was acquired by Atheros Communications, Inc., which was subsequently acquired by Qualcomm Inc. (Qualcomm), and held similar positions with Atheros and Qualcomm. Previously, he was founder and vice president of marketing and business development for Microtune, a designer of RF integrated circuits and subsystem modules, which was acquired by Zoran Semiconductor, and vice president of sales and marketing for Tripath, an audio controller company acquired by Etelos. Additionally, Mr. Melder was a senior executive for companies that were acquired by Broadcom, Cirrus Logic and RFMD. Mr. Melder earned a B.S. in Electrical Engineering/Business from Carnegie-Mellon University and a M.S. in Electrical Engineering and Operations Research from Southern Methodist University. We believe that Mr. Melder's qualifications to serve on the board of directors include his extensive business experience, having held senior management positions at several companies in the semiconductor, computer and networking industries. Additionally, he brings additional operational, and fund-raising expertise, and business development, mergers and acquisitions and public markets experience.

Robert Y. Newell. Mr. Newell has served as a member of our board of directors since October 2018 and is currently a consultant and advisor to emerging technology and healthcare companies. He has held financial management positions for companies in Silicon Valley for over 25 years. From 2003 to 2018, Mr. Newell was chief financial officer of Dextera Surgical, Inc. (Dextera) a developer of advanced surgical stapling and medical devices. In December 2017, after entering into an agreement to sell substantially all of its assets, Dextera filed a voluntary petition for reorganization under Chapter 11 of Title 11 of the United States Code in the United States Bankruptcy Court for the District of Delaware. He served on the board of directors of ARI Network Services, a leading publicly traded supplier of SaaS and data as a service solutions. Previously, Mr. Newell served as chief financial officer of Omnicell, an automated medication and hospital supply management company, and prior to 2000, he held executive positions with the Beta Group and Cardiometrics. Prior to his business career, he was a pilot in the United States Air Force. Mr. Newell holds a B.A. in mathematics from the College of William & Mary and an MBA from Harvard Business School. We believe that Mr. Newell's qualifications to serve on the board of directors include his substantial financial and public-company experience, as he has served as chief financial officer at multiple medical device and other technology companies. He also has previous experience serving as a director on public-company boards of directors.

The names of our executive officers and certain information about them are set forth either above or below, as the case may be:

Name	Age	Position(s) with the Company
Ronald Glibbery	62	Chief Executive Officer and Director
James Sullivan	55	Chief Financial Officer
Bradley Lynch	51	Chief Operating Officer

Mark Lunsford	66	Chief Revenue Officer
Alexander Tomkins	40	Chief Technology Officer

James Sullivan. Mr. Sullivan has served as our chief financial officer since January 2008. From July 2006 until January 2008, Mr. Sullivan served as Vice President of Finance and Chief Financial Officer at Apptera, Inc., a venture-backed company providing software for mobile advertising, search and commerce. From July 2002 until June 2006, Mr. Sullivan was the chief financial officer at 8x8, Inc., a publicly-traded SAAS provider of VoIP and unified communication solutions. Mr. Sullivan's prior experience includes various positions at 8x8, Inc. and PricewaterhouseCoopers LLP. He received a Bachelor of Science degree in Accounting from New York University and is a certified public accountant.

Bradley Lynch. Mr. Lynch has served as chief operating officer since December 2021. He co-founded Peraso Tech in 2009 and served as executive vice president of engineering and operations. In June 2020, Peraso Tech applied for and obtained an order under the Companies' Creditors Arrangement Act (the CCAA), providing certain relief. Pursuant to the Initial Order issued by the Ontario Superior Court of Justice (Commercial List) (the Court), Ernst & Young Inc. was appointed as the Monitor of Peraso Tech. In addition, the Monitor, in its capacity as Foreign Representative, filed a voluntary petition in the United States under Chapter 15 of the U.S. Bankruptcy Code, seeking recognition of the CCAA proceeding. In October 2020, the Court granted an order authorizing the termination of Peraso Tech's CCAA proceedings upon the completion of certain defined steps. In December 2020, the United States Bankruptcy Court for the Southern District of New York issued an Order that: (i) recognized and gave full force and effect in the United States to the Court's order approving the Settlement Agreement; and (ii) terminated the Chapter 15 Proceedings. Prior to founding Peraso Tech, Mr. Lynch worked as a system architect at Kleer Semiconductor, a fabless company focused on wireless audio technology. Before Kleer, he was director of software engineering at Intellon Corporation, a pioneer and leader in the development of semiconductor devices used for powerline communications. Previously, Mr. Lynch held various technical roles at Cogency Semiconductor and Power Trunk. Mr. Lynch holds a B.A.Sc in Computer Engineering from the University of Waterloo.

Mark Lunsford. Mr. Lunsford was appointed as our chief revenue officer in October 2022. Prior to joining Peraso, Mr. Lunsford held numerous positions of responsibility with companies in the semiconductor industry. From 1988 to 1999, he worked for Asia Pacific at Monolithic Memories, where he served in multiple roles, including vice president of sales for the Americas and director of marketing. From 1999 to 2001, Mr. Lunsford was the vice president of worldwide sales and director of business development at Pivotal Technologies. In 2001, and for a period of eight years, he served as vice president of worldwide sales at Micrel Semiconductor. From 2009 to 2013, he worked at NXP, where he served as vice president of sales and marketing for the Americas. In 2013, and for a period of six years, he served as the executive vice president of worldwide sales at SiTime Inc., a provider of MEMS-based timing devices. From January 2019 until April 2020, he provided consulting services for a range of high-technology businesses. Finally, he served as the vice president of global sales at Chasm Advanced Materials, a provider of carbon nano tube based product solutions, from November 2020 until April 2022. Mr. Lunsford holds a degree in Mechanical Engineering from the University of California at Davis.

Alexander Tomkins. Mr. Tomkins has served as our chief technology officer since December 2021. He co-founded Peraso Tech in 2009 and served as its chief technology officer. In June 2020, Peraso Tech applied for and obtained an order under the Companies' Creditors Arrangement Act (the CCAA), providing certain relief. Pursuant to the Initial Order issued by the Ontario Superior Court of Justice (Commercial List), Ernst & Young Inc. was appointed as the Monitor of Peraso Tech. In addition, the Monitor, in its capacity as Foreign Representative, filed a voluntary petition in the United States under Chapter 15 of the U.S. Bankruptcy Code, seeking recognition of the CCAA proceeding. In October 2020, the Court granted an order authorizing the termination of Peraso Tech's CCAA proceedings upon the completion of certain defined steps. In December 2020, the United States Bankruptcy Court for the Southern District of New York issued an Order that: (i) recognized and gave full force and effect in the United States to the Court's order approving the Settlement Agreement; and (ii) terminated the Chapter 15 Proceedings. Mr. Tomkins holds a Masters of Applied Science from the University of Toronto and a B.S. in Engineering Physics from Carleton University. He also attended the University of Toronto as a doctoral candidate in Applied Science.

Audit Committee

Our board of directors established the Audit Committee for the purpose of overseeing the accounting and financial reporting processes and audits of our financial statements. The Audit Committee also is charged with reviewing reports regarding violations of our code of ethics and complaints with respect thereto, and internal control violations under our whistleblower policy are directed to the members of the Audit Committee. The responsibilities of our Audit Committee are described in the Audit Committee Charter adopted by our board of directors, a current copy of which can be found on the investors section of our website, www.perasoinc.com.

Ian McWalter, Andreas Melder and Robert Y. Newell are the current members of the Audit Committee. All are independent, as determined in accordance with Rule 5605(a)(2) of the Nasdaq listing rules and Rule 10A-3 of the Exchange Act. Mr. Newell serves as the chair and has been designated by the board of directors as the "audit committee financial expert," as defined by Item 407(d)(5) of Regulation S-K under the Securities Act and the Exchange Act. That status does not impose duties, liabilities or obligations that are greater than the duties, liabilities or obligations otherwise imposed on him as a member of the Audit Committee and the board of directors, however. The Audit Committee has delegated authority to Mr. Newell for review and pre-approval of services proposed to be provided by our independent registered public accounting firm.

Compensation Committee

Ian McWalter, Andreas Melder and Robert Y. Newell are the current members of the Compensation Committee, and Dr. McWalter serves as the chair. The Compensation Committee is responsible for reviewing, recommending and approving our compensation policies and benefits, including the compensation of all of our executive officers and directors. Our Compensation Committee also has the principal responsibility for the administration of our equity incentive and stock purchase plans. The responsibilities of our Compensation Committee are described in the Compensation Committee Charter adopted by our board of directors, a current copy of which can be found on the investors section of our website, www.perasoinc.com.

Nominations Process

We do not have a nominating committee, as we are a small company and currently only have five directors. Instead of having such a committee, our board of directors historically has appointed all of the independent directors on our board to search for and evaluate qualified individuals to become nominees for director and board committee members. The independent directors recommend candidates for nomination for election or reelection at each annual meeting of stockholders and, as necessary, to fill vacancies and newly created directorships, and evaluate candidates for appointment to and removal from committees. The independent directors operate in this capacity under authority granted by resolution of the board of directors, rather than by charter.

When new candidates for our board of directors are sought, the independent directors evaluate each candidate for nomination as a director within the context of the needs and the composition of the board of directors as a whole. The independent directors conduct any appropriate and necessary inquiries into the backgrounds and qualifications of candidates. When evaluating director nominees, our board of directors generally seeks to identify individuals with diverse, yet complementary business backgrounds. Although we have no formal policy regarding diversity, our directors consider both the personal characteristics and experience of director nominees, including each nominee's independence, diversity, age, skills, expertise, time availability and industry background in the context of the needs of the board of directors and the Company. The board of directors believes that director nominees should exhibit proven leadership capabilities and experience at a high level of responsibility within their chosen fields and must have the experience and ability to analyze the complex business issues facing us, and specifically, the issues inherent in the semiconductor industry. In addition to business expertise, the board of directors requires that director nominees have the highest personal and professional ethics, integrity and values and, above all, are committed to representing the long-term interests of our stockholders and other stakeholders. To date, we have not paid any fee to a third party to assist in the process of identifying or evaluating director candidates. Our independent directors will consider candidates for nomination as director who are recommended by a stockholder and will not evaluate any candidate for nomination for director differently because the candidate was recommended by a stockholder. To date, we have not received or rejected any suggestions for a director candidate recommended by any stockholder or group of stockholders owning more than 5% of our common stock. The recommendation must include the information specified in our bylaws for stockholder nominees to be considered at an annual meeting, including the following:

- The stockholder's name and address and the beneficial owner, if any, on whose behalf the nomination is proposed;
- The stockholder's reason for making the nomination at the annual meeting, and the signed consent of the nominee to serve if elected;

- The number of shares owned by, and any material interest of, the record owner and the beneficial owner, if any, on whose behalf the record owner is proposing the nominee;
- A description of any arrangements or understandings between the stockholder, the nominee and any other person regarding the nomination; and
- Information regarding the nominee that would be required to be included in our proxy statement by the rules of the SEC, including the nominee's age, business experience for the past five years and any other directorships held by the nominee.

The information listed above is not a complete list of the information required by our bylaws. The secretary will forward any timely recommendations containing the required information to our independent directors for consideration.

Board of Directors Leadership Structure

Our bylaws provide the board of directors with flexibility to combine or separate the positions of chair of the board of directors and chief executive officer in accordance with its determination that utilizing one or the other structure is in the best interests of our company. Currently, the board of directors has not appointed a chair or lead independent director. From time to time, each of the independent directors works with our chief executive officer to perform a variety of functions related to our corporate governance, including coordinating activities of the board of directors, setting the agenda for meetings (in consultation with our chief executive officer, as necessary or appropriate) and ensuring adequate communication between the board of directors and management. Our Audit Committee oversees critical matters such as our relationship with our auditors, our financial reporting practices, system of disclosure controls and procedures and internal controls over financial reporting. Our Compensation Committee oversees our executive compensation program. Each of these committees consists entirely of independent directors.

Risk Oversight

The board of directors is actively involved in the oversight of risks — including strategic, credit, liquidity, operational and other risks — which could affect our business. The board of directors does not have a standing risk management committee and administers this oversight function directly through the board of directors as a whole and through its committees, which oversee risks relevant to their respective functions. For example, in addition to the oversight matters described in the preceding paragraph, the Audit Committee also assists the board of directors in its risk oversight function by reviewing and discussing with management our compliance with accounting principles and the treasury function, including management of our cash and investments. The Compensation Committee assists the board of directors in its risk oversight function by considering risks relating to the design of our executive compensation programs and arrangements and employee benefit plans. The full board of directors considers strategic risks and opportunities and receives reports from the committees regarding risk oversight in their areas of responsibility as necessary. The board of directors and each committee administers its respective risk oversight function by evaluating management's monitoring, assessment and management of risks, including steps taken to limit our exposure to known risks, through regular interaction with our senior management and in board and committee deliberations that are closed to members of management. The interaction with management occurs not only at formal board and committee meetings but also periodically through other written and oral communications.

Compensation Committee Interlocks and Insider Participation

During 2023, none of our executive officers served as a member of the board of directors or Compensation Committee of any entity that had one or more of its executive officers serving as a member of our board of directors or Compensation Committee. Dr. McWalter and Messrs. Melder and Newell, the members of the Compensation Committee, were not officers or employees of ours during 2023 or at any other time.

Code of Ethics

We have adopted a code of ethics that applies to all of our employees. The code of ethics is designed to deter wrongdoing and to promote, among other things, honest and ethical conduct, full, fair, accurate, timely, and understandable disclosures in reports and documents submitted to the SEC and other public communications, compliance with applicable governmental laws, rules and regulations, the prompt internal reporting of violations of the code to an appropriate person or persons identified in the code and accountability for adherence to such code.

The code of ethics is available on our website, www.perasoinc.com. If we make any substantive amendments to the code of ethics or grant any waiver, including any implicit waiver, from a provision of the code to our chief executive officer or chief financial officer, or persons performing similar functions, where such amendment or waiver is required to be disclosed under applicable SEC rules, we intend to disclose the nature of such amendment

or waiver on our website.

Employee, Officer, and Director Hedging

Our policy against insider trading prohibits all directors, officers or other employees from engaging in any short sales of our securities, transactions in puts, calls or other derivative securities on an exchange or in any other organized market and hedging transactions.

Item 11. Executive Compensation.

Overview of Compensation Program

The Compensation Committee of the board of directors has responsibility for establishing, implementing and monitoring adherence to our compensation philosophy. The board of directors has delegated to the Compensation Committee the responsibility for determining our compensation policies and procedures for senior management, including the named executive officers, periodically reviewing these policies and procedures, and making recommendations concerning executive compensation to be considered by the full board of directors, when such approval is required under any of our plans or policies or by applicable laws.

The compensation received by our named executive officers is set forth in the Summary Compensation Table, below. For 2023, our named executive officers included Ronald Glibbery, our chief executive officer, James Sullivan, our chief financial officer, and Bradley Lynch, our chief operating officer.

Compensation Philosophy

In general, our executive compensation policies are designed to recruit, retain and motivate qualified executives by providing them with a competitive total compensation package based in large part on the executive's contribution to our financial and operational success, the executive's personal performance and increases in stockholder value, as measured by the price of our common stock. We believe that the total compensation paid to our executives should be fair, reasonable and competitive.

We seek to have a balanced approach to executive compensation with each primary element of compensation (base salary, variable compensation and equity incentives) designed to play a specific role. Overall, we design our compensation programs to allow for the recruitment, retention and motivation of the key executives and high-level talent required in order for us to:

- supply high-value and high-quality integrated circuit solutions to our customer base;
- achieve or exceed our annual financial plan and be profitable;
- make continuous progression towards achieving our long-term strategic objectives to be a high-growth company with growing profitability; and
- increase our share price to provide greater value to our stockholders.

Role of Executive Officers in Compensation Decisions

The chief executive officer (the "CEO") makes recommendations for equity and non-equity compensation for executives to be approved by the Compensation Committee. The Compensation Committee reviews these guidelines annually. The CEO annually reviews the performance of our executives (other than himself) and presents his recommendations for proposed salary adjustments, bonuses and equity awards to the Compensation Committee once a year. In its discretion, the Compensation Committee may accept, modify or reject the CEO's recommendations. The Compensation Committee evaluates the compensation of the CEO on its own without the participation or involvement of the CEO. Only the Compensation Committee and the board of directors are authorized to approve the compensation for any named executive officer. Compensation of new executives is based on hiring negotiations between the individuals and our CEO and/or Compensation Committee.

Elements of Compensation

Consistent with our compensation philosophy and objectives, we offer executive compensation packages consisting of the following three components:

- base salary;
- annual incentive compensation; and
- equity awards.

In each fiscal year, the Compensation Committee determines the amount and relative weighting of each component for all executives, including the named executive officers. Base salaries are paid in fixed amounts and thus do not encourage risk taking. Our widespread use of long-term compensation, consisting of stock options and restricted stock units (the "RSUs"), focuses recipients on the achievement of our longer-term goals and conserves cash for other operating expenses. For example, the RSUs granted to our executives generally vest in increments over three years, while stock options granted to our executives generally vest over 36 months from the date of grant. The Compensation Committee does not believe that these awards encourage unnecessary or excessive risk taking because the ultimate value of the awards is tied to our stock price, and the use of multi-year vesting schedules helps to align our employees' interests even more closely with those of our long-term investors.

Base Salary

Because our compensation philosophy stresses performance-based awards, base salary is intended to be a smaller portion of total executive compensation relative to long-term equity. The Compensation Committee takes into account the executive's scope of responsibility and significance to the execution of our long-term strategy, past accomplishments, experience and personal performance and compares each executive's base salary with those of the other members of senior management. The Compensation Committee may give different weighting to each of these factors for each executive, as it deems appropriate. The Compensation Committee did not retain a compensation consultant or determine a compensation peer group for 2023.

There were no changes to the annual base salaries of our executive officers in 2023. In April 2023, we entered into amendments to our employment agreements with each of our executive officers based in Canada, namely Messrs. Glibbery, Lynch and Tomkins, which provide that for

purposes of calculating any cash compensation amounts payable by us under their employment agreements, each payment shall be converted into Canadian dollars at the exchange rate reported by the Bank of Canada (or such other equivalent exchange rate source, as determined by the Company) as of 5:00 p.m. Pacific Time on the first business day of each calendar quarter during which the payment is made.

Annual Incentive Compensation

There were no changes to the incentive compensation targets for our named executive officers in 2023.

Equity Awards

Although we do not have a mandated policy regarding the ownership of shares of common stock by officers and directors, we believe that granting equity awards to executives and other key employees on an ongoing basis gives them a strong incentive to maximize stockholder value and aligns their interests with those of our other stockholders on a long-term basis. Our Amended and Restated Peraso Inc. 2019 Stock Incentive Plan (the "2019 Plan"), which was approved by our stockholders and became effective in August 2019, enables us to grant equity awards, as well as other types of stock-based compensation, to our executive officers and other employees. The Compensation Committee reviews and approves all equity awards granted under the 2019 Plan to the named executive officers. We grant equity awards to achieve retention and motivation:

- upon the hiring of key executives and other personnel;
- annually, when we review progress against corporate and personal goals; and
- when we believe that competitive forces or economic conditions threaten to cause our key executives to lose their motivation and/or where retention of these key executives is in jeopardy.

With the Compensation Committee's approval, we grant equity awards to acquire shares of common stock when we initially hire executives and other employees, as a long-term performance incentive. The Compensation Committee has determined the size of the initial equity awards to newly hired executives with reference to equity awards held by existing executives, the percentage that such award represents of our total shares outstanding and hiring negotiations with the individual. In addition, the Compensation Committee would consider other relevant information regarding the size and type of compensation package considered necessary to enable us to recruit, retain and motivate the executive.

Typically, when we hire an executive, the equity awards vest over a three-year period. The options granted to executives in connection with annual performance reviews typically vest monthly over a three-to four-year period, and RSUs granted typically vest annually over a period of from one- to three-years, as the Compensation Committee may decide. As matters of policy and practice, we grant stock options with an exercise price equal to fair market value, although the 2019 Plan allows us to use a different exercise price. In determining fair market value, we use the closing price of the common stock on the Nasdaq on the grant date.

Historically, no employee has been eligible for an annual performance grant until the employee has been employed for at least six months. Annual performance reviews are generally conducted in the first half of each fiscal year. Our CEO conducts the performance review of all other executives, and he makes his recommendations to the Compensation Committee. The Compensation Committee also reviews the CEO's annual performance and determines whether he should receive additional equity awards. Aside from equity award grants in connection with annual performance reviews, we do not have a policy of granting additional awards to executives during the year. The board of directors and Compensation Committee have not adopted a policy with respect to setting the dates of award grants relative to the timing of the release of material non-public information. Our policy with respect to prohibiting insider trading restricts sales of shares during specified black-out periods, including at all times that our insiders are considered to possess material non-public information.

In determining the size of equity awards in connection with the annual performance reviews of our executives, the Compensation Committee takes into account the executive's current position with and responsibilities to us, and current and past equity awards to the executive.

In 2023, we did not grant equity awards to any of our named executive officers.

Going forward, we intend to continue to evaluate and consider equity grants to our executives on an annual basis. We expect to consider potential equity awards for executives at the same time as we annually review our employees' performance and determine whether to award grants for all employees.

Accounting and Tax Considerations

Our Compensation Committee has reviewed the impact of tax and accounting treatment on the various components of our executive compensation program. Section 162(m) of the Internal Revenue Code, as amended (the "Code"), generally disallows a tax deduction to publicly-held companies for compensation paid to "covered" executive officers, to the extent that compensation paid to such an officer exceeds \$1 million during the taxable year. The Tax Cuts and Jobs Act repealed the performance-based exception to the deduction limit for remuneration that is deductible in tax years commencing after December 31, 2017. However, certain remuneration is specifically exempt from the deduction limit under a transition rule to the extent that it is "performance-based," as defined in Section 162(m) of the Code, and subject to a "written binding contract" in effect as of November 2, 2017 that is not later modified in any material respect. We endeavor to award compensation that will be deductible for income tax purposes, though other factors will also be considered. None of the compensation paid to our covered executive officers for the year ended December 31, 2023 that would be taken into account for purposes of Section 162(m) exceeded the \$1 million limitation. Because of ambiguities and uncertainties as to the application and interpretation of Section 162(m) of the Code and the regulations issued thereunder, including the uncertain scope of the transition relief under the Tax Cuts and Jobs Act, no assurance can be given that compensation intended to satisfy the requirements for exemption from Section 162(m) of the Code in fact will satisfy such requirements. Our Compensation Committee may authorize compensation payments that do not comply with the exemptions to Section 162(m) when we believe that such payments are appropriate to attract and retain executive talent.

Say-on-Pay and Say-on-Frequency

We gave our stockholders an opportunity to provide feedback on our executive compensation through an advisory vote at our 2023 annual stockholder meeting (the "2023 Meeting"), which was held on December 15, 2023. Stockholders were asked to approve, on an advisory basis, the compensation paid to our named executive officers. A majority of stockholders indicated approval of the compensation of the named executive officers,

with approximately 81% of the shares that voted on such matter voting in favor of the proposal. Additionally, at the 2023 Meeting, stockholders were asked to approve, on an advisory basis, in favor of having a stockholder vote to approve the compensation of our named executive officers every three years. A majority of stockholders indicated approval of having a stockholder vote to approve the compensation of our named executive officers every three years, with approximately 71% of the shares that voted on such matter voting in favor of the proposal. Based on these results and consistent with the previous recommendation and determination of our board of directors, we will hold non-binding advisory votes on executive compensation every three years until the next vote on the frequency of the stockholder advisory vote on executive compensation.

In light of the results of the advisory vote, the Compensation Committee intends to continue to apply principles that were substantially similar to those applied historically in determining compensation policies and decisions with respect to 2024 executive compensation.

SUMMARY COMPENSATION TABLE

The following table sets forth compensation information for fiscal years 2023 and 2022 for each of our named executive officers.

Name and principal position	Year	Salary (\$)	Stock Option Awards (\$)(1)	Restricted Stock Awards (\$)(1)	Non-Equity Incentive Plan Compensation (\$)	Total (\$)
Ronald Glibbery	2023	400,000	—	—	—	400,000
Chief Executive Officer	2022	400,000	—	430,000	—	830,000
James Sullivan	2023	305,000	—	—	—	305,000
Chief Financial Officer	2022	306,719	—	215,000	—	521,719
Bradley Lynch	2023	275,000	—	—	—	275,000
Chief Operating Officer	2022	279,992	—	161,250	—	441,242

- (1) The dollar amounts in this column represent base salary earned during the indicated fiscal year. Pursuant to the employment agreements for Messrs. Sullivan and Lynch, each as amended in April 2022, such named executive officers received a base salary increase that was retroactive to December 17, 2021. Accordingly, the amounts in this column for fiscal year 2022 for Messrs. Sullivan and Lynch reflect retroactive salary increases for the time period from December 17, 2021 through December 31, 2021 in the aggregate amounts of \$1,719 and \$4,992, respectively, plus fiscal year 2022 base salary.
- (2) Award amounts reflect the aggregate grant date fair value with respect to awards granted during the years indicated, as determined pursuant to FASB ASC Topic 718. The assumptions used to calculate the aggregate grant date fair value of option and stock awards are set forth in the notes to the consolidated financial statements included elsewhere in this Report. These amounts do not reflect actual compensation earned or to be earned by our named executive officers.

GRANTS OF PLAN-BASED AWARDS

We did not grant plan-based awards in 2023 to any of our named executive officers.

OUTSTANDING EQUITY AWARDS AT FISCAL YEAR-END

The following table and accompanying footnotes set forth information regarding the outstanding equity awards held by our named executive officers as of December 31, 2023.

Name	Option Awards					Stock Awards	
	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Options (#)	Option Exercise Price(\$)	Option Expiration Date(1)	Number of Units That Have Not Vested (#)	Market Value of Units That Have Not Vested (\$)
Ron Glibbery	566(2)	—	—	69.20	11/17/2024	—	—
	453(2)	—	—	103.60	12/29/2025	—	—
	6,973(2)	—	—	103.60	9/17/2030	—	—
	2,740(2)	—	—	103.60	12/16/2031	—	—
						1,667(7)	18,670(8)
James Sullivan	8(3)	—	—	16,400.00	3/30/2025	—	—
	20(4)	—	—	5,760.00	8/23/2026	—	—
	138(5)	—	—	156.80	2/6/2029	—	—
	500(6)	—	—	62.80	11/20/2029	—	—
						834(7)	9,341(8)
Bradley Lynch	227(2)	—	—	103.60	9/17/2030	—	—
	4,365(2)	—	—	103.60	9/17/2030	—	—
	1,644(2)	—	—	103.60	12/16/2031	—	—
						625(7)	7,000(8)

- (1) The standard option term is generally ten years, but all of the options expire automatically unless exercised within 90 days after the cessation of service as an employee, director or consultant.
- (2) The stock options were acquired on December 17, 2021 as consideration for the person's securities of Peraso Technologies Inc., which we acquired by way of a reverse takeover.
- (3) The stock option was granted on March 30, 2015, and the shares subject to this option vested monthly over 48 months subject to continued employment (or service as a director or consultant).

- (4) In August 2016, officers tendered their eligible options and received new options at a rate of 1 replacement option share for each 1.75 option shares tendered. The stock option was granted on August 23, 2016, and the shares subject to this option vested monthly over 48 months subject to continued employment (or service as a director or consultant).

- (5) The stock option was granted on February 6, 2019, and the shares subject to this option vest monthly over three years subject to continued service as an employee, director or consultant).
- (6) The stock option was granted on November 20, 2019, and the shares subject to this option vested monthly over three years subject to continued service as an employee, director or consultant.
- (7) The shares subject to each restricted stock unit grant vest on each semi-annual anniversary over a three-year period commencing on December 17, 2021 subject to continued employment (or service as a director or consultant).
- (8) The amount is calculated using the Company's closing price on the Nasdaq of \$11.20 per share of common stock on December 29, 2023.

OPTION EXERCISES AND STOCK VESTED

The following table sets forth the number of shares acquired and aggregate dollar amount realized pursuant to the exercise of options and vesting of stock awards by our named executive officers during the year ended December 31, 2023.

Name	Option Awards		Stock Awards	
	Number of Shares Acquired on Exercise(#)	Value Realized on Exercise(\$)	Number of Shares Acquired on Vesting(#)	Value Realized on Vesting\$(1)
Ronald Glibbery	—	—	1,668	29,514
James Sullivan	—	—	626	11,076
Bradley Lynch	—	—	834	14,757

- (1) The aggregate dollar value realized upon vesting represents the closing price of a share of common stock on the Nasdaq at the date of vesting, multiplied by the total number of shares vested.

Employment and Change-in-Control Arrangements and Agreements

Our Executive Change-in-Control and Severance Policy (the "Policy") provides benefits that are intended to encourage the continued dedication of our executive officers and to mitigate potential disincentives to the consideration of a transaction that would result in a change in control, particularly where the services of our named executive officers may not be required by a potential acquirer. The Policy provides for benefits for our named executive officers in the event of a "Change-in-Control," which is generally defined as:

- an acquisition of 45% or more of our common stock or voting securities by any "person," as defined under the Exchange Act; or
- consummation of a complete liquidation or dissolution of the Company or a merger, consolidation, reorganization or sale of all or substantially all of our assets (collectively, a "Business Combination") other than a Business Combination in which (A) our stockholders receive 50% or more of the stock of the corporation resulting from the Business Combination and (B) at least a majority of the board of directors of such resulting corporation were our incumbent directors immediately prior to the consummation of the Business Combination, and (C) after which no individual, entity or group (excluding any corporation or other entity resulting from the Business Combination or any employee benefit plan of such corporation or of ours) who did not own 45% or more of the stock of the resulting corporation or other entity immediately before the Business Combination owns 45% or more of the stock of such resulting corporation or other entity.

Under the Policy, the following compensation and benefits are to be provided to our chief executive officer upon the occurrence of a Change-in-Control, and in the case of our other named executive officers, upon a Change-in-Control combined with a termination of the named executive officer's employment without cause, or due to disability or resignation for good reason (as defined in the Policy) in connection with the Change-in-Control or within 24 months after it:

- any base salary earned but not yet paid through the date of termination;
- any annual or discretionary bonus earned but not yet paid to him for any calendar year prior to the year in which his termination occurs;
- any compensation under any deferred compensation plan of ours or deferred compensation agreement with us then in effect;
- a single lump sum payment equal to the sum of (a) one year of his or her then-current base salary plus (b) the average of his or her annual bonus payments in the preceding three years or such shorter time as he or she has been employed by us (with prorated weighting assigned to any bonus earned for a partial year of employment), which payment will be made within 60 days following the Change-in-Control (in the case of the chief executive officer), or 60 days following the date of employment termination (in the case of all other named executive officers).
- vesting in 100% of all outstanding equity awards as of the date of the Change-in-Control for the chief executive officer, or as of the date of termination of employment for all other named executive officers;
- reimbursement of any business expenses incurred by him through the date of termination but not yet paid;
- reimbursement of the cost of continuation of medical benefits for a period of 12 months; and

- outstanding equity awards that are structured as stock options, stock appreciation rights or similar awards shall be amended effective as of the date of termination to provide that such awards will remain outstanding and exercisable until the earlier of (a) 12 months following the date of the Change-in-Control for the chief executive officer, or the termination of employment for the other named executive officers, and (b) the expiration of the award's initial term.

Under the Policy, "cause" means the executive's:

- willful failure to attend to the executive's duties that is not cured by the executive within 30 days of receiving written notice from the CEO (or, in the case of the CEO, from the board of directors) specifying such failure;
- material breach of the executive's then-current employment agreement (if any) that is not cured by the executive within 30 days of receiving written notice from the CEO (or, in the case of the CEO, from the board of directors) specifying such breach;
- conviction of (or plea of guilty or *nolo contendere* to) any felony or any misdemeanor involving theft or embezzlement; or
- misconduct resulting in material harm to our business or reputation, including fraud, embezzlement, misappropriation of funds or a material violation of the executive's employment, confidential information, non-disclosure, invention assignment and arbitration agreement.

Under the Policy, "good reason" means the occurrence of any of the following conditions without the executive's consent, but only if such condition is reported by the executive within 90 days of the executive's knowledge of such condition and remains uncured 30 days after written notice from the executive to the board of directors of said condition:

- a material reduction in the executive's then-current base salary or annual target bonus (expressed as a percentage of Executive's then-current base salary), except for a reduction proportionate to reductions concurrently imposed on all other members of the Company's executive management;
- a material reduction in the executive's then-current employee benefits package, taken as a whole, except for a reduction proportionate to reductions concurrently imposed on all other members of executive management;
- a material reduction in the executive's responsibilities with respect to our overall operations, such that continuity of responsibilities with respect to business operations existing prior to a corporate transaction will serve as a material reduction in responsibilities if such business operations represent only a subsidiary or business unit of the larger enterprise after the corporate transaction;
- a material reduction in the responsibilities of the executive's direct reports, including a requirement for the chief executive officer to report to another officer as opposed to our board of directors or a requirement for any other executive to report to any officer other than our chief executive officer;
- a material breach by us of any material provision of the executive's then-current employment agreement (if any);
- a requirement that the executive relocate to a location more than 35 miles from the executive's then-current office location, unless such office relocation results in the distance between the new office and Executive's home being closer or equal to the distance between the prior office and the executive's home;
- a failure of a successor or transferee to assume our obligations under this Policy; or
- a failure to nominate the executive for election as a board of directors director, if, at the proper time for nomination, the executive is a member of the board of directors.

Notwithstanding the above, in lieu of the payments and benefits payable under the Policy to Mr. Glibbery as the Company's chief executive officer, Mr. Glibbery will receive change-in control payments and benefits in accordance with the terms and conditions of his employment agreement. The table below summarizes the payments Mr. Glibbery would be entitled to depending on the respective type of termination of his employment.

Termination Type

Payments and Benefits

Termination for Cause or Voluntary Resignation	(i)	accrued and unpaid base salary and any other payments required by law, including those in connection with accrued vacation; and
	(ii)	reimbursement for business expenses.
Termination Without Cause, for Good Reason, upon Change of Control, Death or Disability	(i)	accrued and unpaid base salary and any other payments required by law including those in connection with accrued vacation;
	(ii)	reimbursement for business expenses;
	(iii)	the payment of the greater of (A) the sum of: (x) pay in lieu of notice of termination, in the amount required pursuant to the ESA (as defined in Mr. Glibbery's employment agreement), and (y) statutory severance pay (if applicable) in the amount required to be provided pursuant to the ESA; or (B) twenty-four (24) months of base salary in lieu of notice, calculated solely by reference to the base salary except and only to the extent as otherwise minimally required by the ESA, to be paid in the form of a lump sum;
	(iv)	any bonus awarded but not yet paid in respect of the fiscal year preceding the termination date;
	(v)	bonus for the year in which the employment terminates, prorated pursuant to the employment agreement;
	(vi)	all benefits (as existed on the date notice of termination is provided) for the duration of the Severance Period (as defined in the employment agreement);
	(vii)	any unvested equity and equity-related compensation that has been issued pursuant to the Plan will be immediately accelerated and vested as of the termination date;
	(viii)	any vested equity and equity-related compensation that has been issued under the Plan will remain exercisable until 24 months following such termination; and
	(ix)	any other benefits and/or perquisites shall continue until the end of the ESA Notice Period (as defined in the employment agreement).

The information below describes the severance benefits payable to (i) Mr. Glibbery under his employment agreement and (ii) Messrs. Lynch and Sullivan under the Policy, as if such arrangements had been in effect and a Change-in-Control occurred on December 31, 2023, and the employment of each of our named executive officers was terminated without cause immediately following the Change-in-Control.

Name	Base Salary \$(1)	Incentive Plans \$(2)	Continuation of Benefits(\$) (3)	Stock Option Vesting(\$) (4)	Stock Award Vesting(\$) (5)	Total(\$)
Ronald Glibbery	800,000	300,000	11,004	17,237	18,670	1,146,911
James Sullivan	305,000	183,000	12,743	—	9,341	510,084
Bradley Lynch	275,000	137,500	5,502	22,545	7,000	447,547

- (1) Represents cash severance payments based on the executive's salary at December 31, 2023, in an amount equal to two years of base salary for Mr. Glibbery and one year of base salary for each of Messrs. Sullivan and Lynch.
- (2) For Mr. Glibbery, the amount represents payment of his annual target bonus amount. For Messrs. Sullivan and Lynch, the amounts represent the average of each executive's annual performance incentive payments in the preceding three years.
- (3) Represents the aggregate amount of all premiums payable for the continuation of the executive's health benefits for one or two years, as applicable, based on the amounts of such premiums at December 31, 2023.
- (4) The value is calculated as the intrinsic value per share, multiplied by the number of shares that would become fully vested upon the Change-in-Control. The intrinsic value per share would be calculated as the excess of the closing price of the common stock on the Nasdaq of \$11.20 on December 29, 2023 over the exercise price of the option. If the value is less than zero, it is deemed to be zero for the purposes of these calculations.
- (5) The value is calculated as the intrinsic value per share, multiplied by the number of shares that would become fully vested upon the Change-in-Control. The intrinsic value per share is considered as the closing price of our common stock on the Nasdaq of \$11.20 on December 29, 2023.

If a Change-in-Control occurred on December 31, 2023, under the Policy, the following numbers of option and award shares would have vested immediately as a result of acceleration on December 31, 2023:

Name	Number of Accelerated Option and Award Shares
Ronald Glibbery	3,208
James Sullivan	834
Bradley Lynch	2,641

Employment Agreements

In addition to the agreements containing the Change-in-Control provisions summarized above, we have entered into our standard form of employment, confidential information, invention assignment and arbitration agreement with each of the named executive officers.

We also have entered into agreements to indemnify our current and former directors and certain executive officers, in addition to the indemnification provided for in our certificate of incorporation and bylaws. These agreements, among other things, provide for indemnification of our directors and certain executive officers for many expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by any such person in any action or proceeding, including any action by or in the right of the Company, arising out of such person's services as a director or executive officer of the Company, any subsidiary of the Company or any other company or enterprise to which the person provided services at our request.

Director Compensation

The following table summarizes the compensation we paid to our non-employee directors in the year ended December 31, 2023:

Name	Fee Compensation (\$)	Restricted Stock Awards \$(1)	All Other Compensation (\$)	Total (\$)
Robert Y. Newell	56,250(1)	19,876	—	76,126
Ian McWalter	55,000(2)	19,876	—	74,876
Andreas Melder	50,000(3)	19,876	—	69,876
Daniel Lewis	35,000(4)	19,876	105,000(5)	159,876

- (1) Consists of (i) \$45,000 of fees earned in 2023, of which \$22,500 was not paid in 2023, and (ii) \$11,250 of fees earned in 2022 and paid in 2023.
- (2) Consists of (i) \$44,000 of fees earned in 2023, of which \$22,000 was not paid in 2023, and (ii) \$11,000 of fees earned in 2022 and paid in 2023.
- (3) Consists of (i) \$40,000 of fees earned in 2023, of which \$20,000 was not paid in 2023, and (ii) \$10,000 of fees earned in 2022 and paid in 2023.
- (4) Includes \$17,500 of fees earned but not paid in 2023.
- (5) Represents a cash bonus paid to Mr. Lewis in January 2023 equal to 3% of the gross proceeds we received from the sale of our Virtual Accelerator Engine intellectual property, pursuant to the terms of his offer of employment, dated August 8, 2018, as amended on April 15, 2022. Mr. Lewis resigned as our Vice President, General Manager of Memory Products in December 2022.

Director Fee Compensation

As a small company, it can be challenging for us to attract new non-employee directors. Nasdaq and SEC regulations require that a majority of the directors on our board of directors and its committees be independent, non-employee directors, as defined by each entity. In December 2021, we

amended our director compensation structure and adopted our Outside Director Compensation Plan (the "Director Plan"). Under the Director Plan, we pay the following annual cash retainer fees, payable in quarterly installments, to our non-employee directors for their service on our board of directors and, as applicable, for service on committees of our board of directors:

- \$35,000 for service on the board of directors;
- \$8,000 for service as chairperson of the Audit Committee;
- \$3,000 for service as a member of the Audit Committee;
- \$6,000 for service as chairperson of the Compensation Committee; and
- \$2,000 for service as a member of the Compensation Committee.

Director Equity Compensation

Under the Director Plan, upon initial appointment to our board of directors, each non-employee director will receive a stock option with a value of \$100,000, calculated by dividing the \$100,000 by the closing trading price of our common stock on the date of grant. The initial stock option will have an exercise price equal to the closing price of our common stock on the date of grant and will vest as to one-third of the shares on the first annual anniversary of the grant and the remaining shares quarterly over the subsequent two years, provided the non-employee director continues to serve on the board of directors. In the event of a merger, sale of substantially all of our assets or similar transaction, vesting of all director options would accelerate as to 100% of the unvested shares subject to the award.

Non-employee directors will also receive an annual equity award of restricted stock units of common stock equal to \$50,000 of value per non-employee director. The restricted stock unit award will be made upon initial appointment to our board of directors and then subsequently at the first scheduled meeting of the board of directors following our annual meeting of stockholders. The number of restricted stock units will be calculated by dividing \$50,000 by the closing trading price of our common stock on the date of the award, provided, however, that such annual equity award for each non-employee director cannot exceed 500 shares per year in accordance with the 2019 Plan. The restricted stock unit award will vest in full on the earlier to occur of the next annual meeting of stockholders or the one-year anniversary of the award. All equity awards granted under the Director Plan will be made from the 2019 Plan.

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

The table below sets forth certain information as of March 1, 2024 concerning the ownership of our common stock by:

- each stockholder known by us to be the beneficial owner of more than 5% of the outstanding shares of our common stock (currently our only class of voting securities);
- each of our directors;
- each of our executive officers; and
- all directors and executive officers as a group.

Beneficial ownership is determined in accordance with Rule 13d-3 of the Exchange Act and includes all shares over which the beneficial owner exercises voting or investment power. Shares that are issuable upon the exercise of options, warrants and other rights to acquire common stock that are presently exercisable or exercisable within 60 days of March 1, 2024 are reflected in a separate column in the table below. These shares are taken into account in the calculation of the total number of shares beneficially owned by a particular holder and the total number of shares outstanding for the purpose of calculating percentage ownership of the particular holder. We have relied on information supplied by our officers, directors and certain stockholders and on information contained in filings with the SEC. Except as otherwise indicated, and subject to community property laws where applicable, we believe, based on information provided by these persons, that the persons named in the table have sole voting and investment power with respect to all shares of common stock shown as beneficially owned by them. The percentage of beneficial ownership is based on 2,256,253 shares of our common stock and exchangeable shares outstanding as of March 1, 2024.

Unless otherwise stated, the business address of each of our directors and executive officers listed in the table is 2309 Bering Drive, San Jose, California 95131.

Name and Principal Position	Amount and Nature of Beneficial Ownership		Percent of Class
	Number of Shares Beneficially Owned (Excluding Outstanding Options)(1)	Number of Shares Issuable on Exercise of Outstanding Options or Convertible Securities(2)	
Iroquois Capital Management, LLC	120,000(3)	117,000(3)	9.99%
Ionic Ventures, LLC	120,000(4)	117,000(4)	9.99%
Brio Capital, LLC	120,000(5)	—	5.32%
Directors and Officers:			
Ronald Glibbery	3,534	9,361	*
Daniel Lewis	2,667	1,875	*
Robert Y. Newell	2,947	454	*
Ian McWalter	3,997	329	*
Andreas Melder	851	329	*
James Sullivan	1,379	665	*
Bradley Lynch	1,283	4,595	*
Alexander Tomkins	993	4,886	*
Mark Lunsford	627	—	*
All current directors and executive officers as a group (9 persons)	18,278	22,494	1.8%

* Represents holdings of less than one percent.

- (1) Excludes shares subject to outstanding options, warrants, convertible securities or other rights to acquire common stock that are exercisable within 60 days of March 1, 2024.
- (2) Represents the number of shares subject to outstanding options, restricted stock units, convertible securities or other rights to acquire common stock that are exercisable within 60 days of March 1, 2024.
- (3) Based on information reported on a Schedule 13G filed with the SEC on February 15, 2024 by Iroquois Capital Management L.L.C. ("Iroquois Capital"), Richard Abbe and Kimberly Page. The filing reflects that (i) Iroquois Capital, Mr. Abbe and Ms. Page share voting and dispositive power over 31,200 shares of common stock and 587,840 shares of common stock issuable upon exercise of pre-funded warrants, Series A warrants and Series B warrants (collectively, the "Warrants"), which securities are directly held by Iroquois Master Fund Ltd. ("Iroquois Master Fund"), and (ii) Mr. Abbe has sole voting and dispositive power over 88,800 shares of common stock and 1,673,110 shares of common stock issuable upon exercise of the Warrants, which securities are directly held by Iroquois Capital Investment Group LLC ("ICIG"). The table above excludes 2,143,950 shares of common stock issuable upon exercise of the Warrants because the warrants are subject to a 9.99% beneficial ownership blocker. Mr. Abbe shares authority and responsibility for the investments made on behalf of Iroquois Master Fund with Ms. Kimberly Page, each of whom is a director of the Iroquois Master Fund. As such, Mr. Abbe and Ms. Page may each be deemed to be the beneficial owner of all shares of common stock held by and underlying the Warrants held by, Iroquois Master Fund. Iroquois Capital is the investment advisor for Iroquois Master Fund and Mr. Abbe is the President of Iroquois Capital. Mr. Abbe has the sole authority and responsibility for the investments made on behalf of ICIG. As such, Mr. Abbe may be deemed to be the beneficial owner of all shares of Common Stock held by and underlying the Warrants held by, Iroquois Master Fund and ICIG. Iroquois Capital, Mr. Abbe and Ms. Page each disclaims any beneficial ownership of any such shares of common stock except to the extent of their pecuniary interest therein.
- (4) Based on information reported on a Schedule 13G filed with the SEC on February 12, 2024 by Ionic Ventures, LLC ("Ionic"), Ionic Management, LLC ("Ionic Management"), Brendan O'Neil and Keith Coulston, which each report shared voting and dispositive power with respect to the shares. The table above excludes 2,143,950 shares of common stock issuable upon exercise of the Series A warrants, Series B warrants and pre-funded warrants because the warrants are subject to a 9.99% beneficial ownership blocker. Ionic has the power to dispose of and the power to vote the shares beneficially owned by it, which power may be exercised by its manager, Ionic Management. Each of the managers of Ionic Management, Mr. O'Neil and Mr. Coulston, has shared power to vote and/or dispose of the shares beneficially owned by Ionic and Ionic Management.
- (5) Based on information reported on a Schedule 13G filed with the SEC on February 7, 2024 by Brio Capital Master Fund Ltd. and Brio Capital Management LLC. Brio Capital Management LLC, is the investment manager of Brio Capital Master Fund Ltd. and has the voting and investment discretion over securities held by Brio Capital Master Fund Ltd. Shaye Hirsch, in his capacity as Managing Member of Brio Capital Management LLC, makes voting and investment decisions on behalf of Brio Capital Management LLC in its capacity as the investment manager of Brio Capital Master Fund Ltd. The amount of shares in the table above excludes 2,260,950 shares of common stock issuable upon exercise of pre-funded warrants, Series A warrants and Series B warrants which are subject to a 4.99% ownership blocker.

Securities Authorized for Issuance under Equity Compensation Plans

The following table provides information as of December 31, 2023 regarding equity compensation plans approved by our security holders. As of December 31, 2023, we had no awards outstanding under equity compensation plans that have not been approved by our security holders.

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance under Equity Compensation Plans (excluding Securities reflected in Column (a))(1)
	(a)	(b)	(c)
Equity compensation plans approved by security holders	50,960(2)	\$ 122.80	39,268

(1) Consists of shares of common stock available for future issuance under the 2019 Plan.

(2) Consists of 1,031 shares of common stock subject to outstanding equity awards under the 2010 Plan, 18,694 shares of common stock subject to outstanding equity awards under the 2019 Plan and 31,235 of common stock subject to outstanding options assumed by us in connection with the business combination with Peraso Technologies Inc. that was completed in December 2021.

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

Related Party Transactions

Below we describe any transactions to which we have been a participant, in which the amount involved in the transaction exceeds or will exceed the lesser of \$120,000 or one percent of the average of our total assets at year end for each of the last two completed fiscal years and in which any of our directors, director nominees, executive officers, or holders of more than 5% of our capital stock, or any immediate family member of, or person sharing the household with, any of these individuals, had or will have a direct or indirect material interest since January 1, 2022.

A family member of one of our executive officers is employed by us. During the years ended December 31, 2023 and 2022, we paid approximately \$111,400 and \$101,000, respectively, to the employee. The amount paid in 2022 includes the aggregate grant date fair value, as determined pursuant to FASB ASC Topic 718, of an RSU awarded in April 2022. Additionally, a family member of one of our executive officers previously served as a consultant to the Company. During the year ended December 31, 2022, we paid approximately \$162,000 to the consultant family member.

Director Independence

Our board of directors has determined that each of the current directors, with the exception of Daniel Lewis and Ronald Glibbery, is "independent," as defined by the listing rules of the NASDAQ Stock Market, or Nasdaq, and the rules and regulations of the SEC. Our board of directors has standing Audit and Compensation Committees, each of which is comprised solely of independent directors in accordance with the Nasdaq listing rules. No director qualifies as independent unless the board of directors affirmatively determines that he has no direct or indirect relationship with us that would impair his independence. We independently review the relationship of the Company to any entity employing a director or on whose board of directors he is serving currently.

Item 14. Principal Accountant Fees and Services.

Weinberg & Co., P.A. ("Weinberg") was our independent registered public accounting firm for the years ended December 31, 2023 and 2022. The following table shows the fees billed (in thousands of dollars) to us by Weinberg for the financial statement audits and other services provided for fiscal 2023 and 2022.

	2023	2022
Audit Fees(1)	\$ 224	\$ 223
Audit-Related Fees(2)	12	13
Total(3)	\$ 236	\$ 236

- (1) Audit fees consisted of fees for professional services rendered for the audit of our annual consolidated financial statements, review of our quarterly financial statements and services normally provided in connection with statutory and regulatory filings.
- (2) Audit-related fees consisted of fees related to the issuance of SEC registration statements.
- (3) Weinberg did not provide any non-audit or other services other than those reported under "Audit Fees" and "Audit-Related Fees."

The Audit Committee meets with our independent registered public accounting firm at least four times a year. At such times, the Audit Committee reviews both audit and non-audit services performed by the independent registered public accounting firm, as well as the fees charged for such services. The Audit Committee is responsible for pre-approving all auditing services and non-auditing services (other than non-audit services falling within the *de minimis* exception set forth in Section 10A(i)(1)(B) of the Exchange Act and non-audit services that independent auditors are prohibited from providing to us) in accordance with the following guidelines: (1) pre-approval policies and procedures must be detailed as to the particular services provided; (2) the Audit Committee must be informed about each service; and (3) the Audit Committee may delegate pre-approval authority to one or more of its members, who shall report to the full committee, but shall not delegate its pre-approval authority to management. Among other things, the Audit Committee examines the effect that performance of non-audit services may have upon the independence of the auditors.

Part IV

Item 15. Exhibits.

(a)(1) Consolidated Financial Statements:

The following documents are filed as part of this Report:

Consolidated Financial Statements and Report of Independent Registered Public Accounting Firm, all of which are set forth on pages F-1 through F-32 of this Report.

(2) Financial Statement Schedules:

Financial statement schedules are omitted because they are not required, not applicable or because the required information is shown in the consolidated financial statements or notes thereto.

(3) Exhibits:

Required exhibits are incorporated by reference or are filed with this Report.

Exhibit No.	Exhibit Description	Reference				Filed or Furnished Herewith
		Form	File No.	Form Exhibit	Filing Date	
2.1**	Arrangement Agreement with Peraso Technologies Inc.	8-K	000-32929	2.1	September 15, 2021	
2.2	First Amending Agreement dated October 21, 2021	8-K	000-32929	2.1	October 22, 2021	
3.1	Restated Certificate of Incorporation of the Company	8-K	000-32929	3.6	November 12, 2010	
3.1.1	Certificate of Amendment to Restated Certificate of Incorporation of the Company	8-K	000-32929	3.1	February 14, 2017	
3.1.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, filed with the Secretary of State of the State of Delaware on August 27, 2019	8-K	000-32929	3.1	August 27, 2019	
3.1.3	Certificate of Amendment to Articles of Incorporation (Name Change)	8-K	000-32929	3.1	December 20, 2021	
3.1.4	Certificate of Designation of Series A Special Voting Preferred Stock	8-K	000-32929	3.2	December 20, 2021	
3.1.5	Certificate of Amendment to Amended and Restated Certificate of Incorporation of the Company, filed with the Secretary of State of the State of Delaware on December 15, 2023	8-K	000-32929	3.1	December 19, 2023	
3.2	Amended and Restated Bylaws of the Company	8-K	000-32929	3.1	November 23, 2021	
4.1	Specimen Common Stock Certificate	S-1/A	333-43122	4.1	September 14, 2000	
4.2	Form of Common Stock Purchase Warrant	8-K	000-32929	4.1	June 30, 2017	

4.3	Form of Securities Purchase Agreement	8-K	000-32929	10.1	June 30, 2017
4.4	Form of Common Stock Purchase Warrant	8-K	000-32929	4.6	October 3, 2018
4.5	Description of the Registrant's Securities	10-K	000-32929	4.6	March 29, 2023
4.6.1*	Amended and Restated Peraso Inc. 2010 Equity Incentive Plan	S-8	333-229728	4.8	February 15, 2019
4.6.2*	Amended and Restated Peraso Inc. 2019 Stock Incentive Plan	S-8	333-262062	4.2	January 7, 2022
4.7.1*	Form of Agreement for Stock Option Grant pursuant to the Peraso Inc. Amended and Restated 2010 Equity Incentive Plan	S-8	333-168358	4.10	July 28, 2010
4.7.2*	Form of Notice of Grant of Stock Option Award and Agreement pursuant to the Peraso Inc. 2019 Stock Incentive Plan	S-8	333-234675	4.10	November 13, 2019

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4.8.1*	Form of Notice of Grant of Restricted Stock Unit Award and Agreement under the Peraso Inc. Amended and Restated 2010 Equity Incentive Plan	10-Q	000-32929	10.23	August 8, 2013
4.8.2*	Form of Notice of Grant of Restricted Stock Unit Award and Agreement under the Peraso Inc. 2019 Stock Incentive Plan	S-8	333-234675	4.13	November 13, 2019
4.9*	Amended Peraso Technologies Inc. 2009 Share Option Plan	S-8	333-262062	4.5	January 7, 2022
4.10	Form of Pre-Funded Common Stock Purchase Warrant	8-K	000-32929	4.1	November 30, 2022
4.11	Form of Common Stock Purchase Warrant	8-K	000-32929	4.2	November 30, 2022
4.12	Form of Pre-Funded Warrant	8-K	000-32929	4.1	June 2, 2023
4.13	Form of Purchase Warrant	8-K	000-32929	4.2	June 2, 2023
4.14	Form of Placement Agent Warrant	8-K	000-32929	4.3	June 2, 2023
4.15	Form of Series A Warrant	S-1/A	333-276247	4.15	February 5, 2024
4.16	Form of Series B Warrant	S-1/A	333-276247	4.16	February 5, 2024
4.17	Form of Pre-Funded Warrant	S-1/A	333-276247	4.16	January 23, 2024
4.18	Form of Representative Warrant	S-1/A	333-276247	4.17	January 23, 2024
10.1*	Employment Offer Letter Agreement between the Company and James Sullivan dated December 21, 2007	10-K	000-32929	10.26	March 17, 2008
10.2*	Change-in-control Agreement between the Company and James Sullivan dated January 18, 2008	10-K	000-32929	10.27	March 17, 2008
10.3*	Form of Option Agreement for Stock Option Grant pursuant to Amended and Restated 2010 Equity Incentive Plan	S-8	333-168358	4.10	July 28, 2010
10.4*	Form of Notice of Restricted Stock Unit Award and Agreement under the Amended and Restated Peraso Inc. 2010 Equity Incentive Plan	S-8	333-159753	4.8	June 5, 2009
10.5*	Form of New Employee Inducement Grant Stock Option Agreement (revised February 2012)	10-K	000-32929	10.19	March 15, 2012
10.6	Form of Indemnification Agreement used from June 2012 to present	10-Q	000-32929	10.22	August 9, 2012
10.7*	Executive Change-in-Control and Severance Policy	SC TO-I	005-78033	99.(D)(7)	July 26, 2016
10.8*	Employment offer letter agreement between the Company and Daniel Lewis dated August 8, 2018	S-1/A	333-225193	10.28	September 17, 2018
10.9	Securities Purchase Agreement	8-K	000-32929	10.26	October 3, 2018
10.10	Securities Purchase Agreement	8-K	000-32929	10.1	April 17, 2020
10.11	Form of Lock-Up Agreement	8-K	000-32929	10.1	December 20, 2021
10.12	Intercompany Services Agreement	8-K	000-32929	10.2	December 20, 2021
10.13*	Employment Agreement (Ronald Glibbery)	8-K	000-32929	10.3	December 20, 2021
10.14*	Employment offer letter agreement between the Company and Mark Lunsford dated October 4, 2022	10-K	000-32929	10.17	March 29, 2023
10.15*	Employment Agreement (Brad Lynch)	10-K	000-32929	10.18	March 29, 2023
10.16*	Employment Agreement (Alexander Tomkins)	10-K	000-32929	10.19	March 29, 2023
10.17*	Amendment to offer of employment between the Company and Daniel Lewis dated April 15, 2022	10-Q	000-32929	10.1	August 15, 2022

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10.18*	Amendment to offer of employment between the Company and James Sullivan dated April 15, 2022	10-Q	000-32929	10.2	August 15, 2022
10.19*	Amendment to employment agreement between Peraso Technologies Inc. and Brad Lynch dated April 15, 2022	10-Q	000-32929	10.3	August 15, 2022
10.20*	Amendment to offer of employment between the Company and Alex Tomkins dated April 19, 2023	S-1	333-272729	10.21	June 16, 2023
10.21*	Amendment to offer of employment between the Company and Ronald Glibbery dated April 19, 2023	S-1	333-272729	10.22	June 16, 2023
10.22*	Second Amendment to offer of employment between the Company and Brad Lynch dated April 19, 2023	S-1	333-272729	10.23	June 16, 2023
10.23**	Technology License and Patent Assignment Agreement By and Between Intel Corporation and the Company dated August 5, 2022	10-Q	000-32929	10.1	November 14, 2022
10.24**	Form of Securities Purchase Agreement	8-K	000-32929	10.1	November 30, 2022
10.25	Form of Registration Rights Agreement	8-K	000-32929	10.2	November 30, 2022
10.26**	Form of Securities Purchase Agreement	8-K	000-32929	10.1	June 2, 2023
10.27	Form of Registration Rights Agreement	8-K	000-32929	10.2	June 2, 2023
10.28*	First Amendment to Executive Change-in-Control and Severance Policy	10-Q	000-32929	10.23	May 13, 2021
10.29	Amendment No. 1 to Peraso Inc. Common Stock Purchase Warrant	8-K	000-32929	10.3	June 2, 2023
10.30	Underwriting Agreement, dated February 6, 2024, by and between the Company and Ladenburg Thalmann & Co. Inc.	8-K	000-32929	1.1	February 9, 2024
10.31	Form of Lock-Up Agreement	S-1/A	333-276247	10.30	January 23, 2024

10.32	Warrant Agency Agreement, dated February 8, 2024, by and between the Company and Equiniti Trust Company, LLC	8-K	000-32929	10.2	February 9, 2024	
21.1	List of Subsidiaries	10-K	000-32929	21.1	March 29, 2023	
23.1	Consent of Independent Registered Public Accounting Firm- Weinberg & Co., P.A.					X
24.1	Power of Attorney (see signature page)					X
31.1	Rule 13a-14 Certification					X
31.2	Rule 13a-14 Certification					X
32	Section 1350 Certification					X
97.1	Company Clawback Policy					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 Labels Linkbase Document					X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					X
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)					X

* Management contract, compensatory plan or arrangement.

** Certain schedules, exhibits and similar attachments have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The Company hereby undertakes to furnish copies of such omitted materials supplementally upon request by the SEC.

Item 16. Form 10-K Summary

Not applicable.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized, on the 29th day of March 2024.

PERASO INC.

By: /s/ Ronald Glibbery
Ronald Glibbery
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Ronald Glibbery and James Sullivan as his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agents, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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.

Signature	Title	Date
<u>/s/ Ronald Glibbery</u> Ronald Glibbery	Chief Executive Officer and Director (principal executive officer)	March 29, 2024
<u>/s/ James Sullivan</u> James Sullivan	Chief Financial Officer (principal financial and accounting officer)	March 29, 2024
<u>/s/ Daniel Lewis</u> Daniel Lewis	Director	March 29, 2024
<u>/s/ Ian McWalter</u> Ian McWalter	Director	March 29, 2024
<u>/s/ Andreas Melder</u> Andreas Melder	Director	March 29, 2024
<u>/s/ Robert Y. Newell</u> Robert Y. Newell	Director	March 29, 2024

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Report of Independent Registered Public Accounting Firm (PCAOB ID 572)	F-2
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Consolidated Statements of Operations and Comprehensive Loss	F-6
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Consolidated Statements of Cash Flows	F-8
Notes to Consolidated Financial Statements	F-9 - F-32

Report of Independent Registered Public Accounting Firm

Board of Directors and Stockholders
Peraso Inc.
San Jose, California

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Peraso Inc. (the "Company") and subsidiaries as of December 31, 2023 and 2022, the related consolidated statements of operations, stockholders' equity, and cash flows for the years ended December 31, 2023 and 2022, 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 and its subsidiaries as of December 31, 2023 and 2022, and the results of their operations and their cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Going Concern

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, during the year ended December 31, 2023, the Company incurred a net loss and utilized cash in operations. These conditions raise substantial doubt about the Company's ability to continue as a going concern. Management's plans to alleviate these conditions are also described in Note 1. The 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 audits 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 audit 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 consolidated 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 Matters

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

Amortizable intangible assets impairment assessment

As described in Notes 1 and 2 to the consolidated financial statements, the Company's amortizable definite-lived intangible assets consisting of acquired technology and customer relationships had a carrying value of \$3.3 million as of December 31, 2023. Management conducts an impairment assessment annually on December 31, or more frequently if impairment indicators exist. An impairment exists when the carrying value of the long-lived group containing acquired technology and customer relationships exceeds its fair value. The Company's evaluation of the recoverability of acquired technology and customer relationships intangible assets first involves the comparison of undiscounted future cash flows expected to be generated by the acquired technology and customer lists over the remaining useful life of the assets to their respective carrying amounts. The Company's recoverability analysis requires management to make significant estimates and assumptions related to forecasted sales growth rates and cash flows over the remaining useful life of the assets. Based on the results of the impairment assessment, management determined that its amortizable definite-lived intangible assets were not impaired.

We identified the evaluation of acquired technology and customer relationships intangible assets for potential impairment as a critical audit matter because of the significant estimates and assumptions management makes related to future cash flows expected to be generated over the intangible assets' lives. Auditing the impairment evaluation required a high degree of auditor judgment and an increased extent of effort when performing audit procedures to evaluate the reasonableness of management's future cash flows over the remaining useful life of the long-lived asset group.

The primary procedures we performed to address this critical audit matter included:

- obtained an understanding of management's processes related to its impairment assessment of intangibles;
- evaluated the reasonableness of management's forecasts of undiscounted future cash flows by comparing management's projections to the Company's historical results and evaluating the appropriateness of projected revenue growth, margin and cost rates;
- tested the completeness and accuracy of underlying data used in the projections, and;
- evaluated whether the estimated future cash flows over the remaining useful life were consistent with evidence obtained in other areas of the audit.

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Inventory Valuation

As discussed in Note 1 to the financial statements, the Company's inventories are stated at the lower of cost or net realizable value, with cost determined on first-in, first-out ("FIFO") basis. As of December 31, 2023, the Company held inventories of \$2.6 million. In determining net realizable value, management considers historical usage, forecasted demand in relation to inventory on hand, market conditions, and other factors.

We identified the evaluation of management's estimate of the net realizable value of certain inventory as a critical audit matter, because of the significant judgments made by management in estimating future demand and market conditions which are used to arrive at the net realizable value. This required a high degree of auditor judgment and increased auditor effort in auditing such assumptions.

The primary procedures we performed to address this critical audit matter included:

- evaluated management's product demand forecast for reasonableness considering historical sales by product, and whether they were consistent with the historical data and evidence obtained in other areas of the audit, and;
- we developed an independent expectation of the net realizable value of inventory using historic inventory activity and compared our independent expectation to the amount recorded in the financial statements.

Valuation of warrant liability

As described in Note 5 to the financial statements, during the year ended December 31, 2023, the Company issued certain warrants to acquire its common stock and such warrants contained provisions and terms that resulted in the warrants requiring recognition as fair value liabilities. The warrant liabilities are required to be measured at fair value initially at issuance, and subsequently thereafter at each reporting date including December 31, 2023.

We identified auditing the valuation of the warrant liabilities as a critical audit matter due to the complexity of the accounting for the transaction and the significant judgements used by the Company in determining the fair value of the warrant liabilities. This required a high degree of auditor judgment and increased auditor effort in auditing the determination and valuation of the warrant liabilities.

The primary procedures we performed to address this critical audit matter included:

- We obtained and examined the warrant liability agreement, including assessing the reasonableness of its presentation as a liability in the financial statements.
- We evaluated the appropriateness of the model used to value the warrant liability and tested the reasonableness of the assumptions used by the Company in determined the fair value of the warrant liability.
- We developed an independent expectation of the warrant liability and compared our independent expectation to the Company calculated value.

We have served as the Company's auditor since 2020.

/s/ Weinberg & Company

Los Angeles, California
March 29, 2024

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PART I—FINANCIAL INFORMATION

Item 1. Financial Statements

PERASO INC. CONSOLIDATED BALANCE SHEETS (In thousands, except par value)

	December 31,	
	2023	2022
ASSETS		
Current assets		
Cash and cash equivalents	\$ 1,583	\$ 1,828
Short-term investments	—	1,078
Accounts receivable, net	731	3,244
Inventories, net	2,606	5,348
Tax credits and receivables	36	41
Deferred cost of net revenue	—	600

Prepaid expenses and other	584	574
Total current assets	5,540	12,713
Property and equipment, net	1,156	2,225
Right-of-use lease assets	615	1,147
Intangible assets, net	3,280	6,278
Other	123	123
Total assets	\$ 10,714	\$ 22,486
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	\$ 2,448	\$ 1,844
Accrued expenses and other	611	1,817
Deferred revenue	1,105	332
Short-term lease liabilities	370	687
Total current liabilities	4,534	4,680
Long-term lease liabilities	349	470
Warrant liabilities	1,748	2,079
Total liabilities	6,631	7,229
Commitments and contingencies (Note 4)		
Stockholders' equity		
Preferred stock, \$0.01 par value; 20,000 shares authorized; none issued and outstanding	—	—
Series A, special voting preferred stock, \$0.01 par value; one share authorized; and one share issued and outstanding at December 31, 2023 and 2022	—	—
Common stock, \$0.001 par value; 120,000 shares authorized; 673 shares and 357 shares issued and outstanding at December 31, 2023 and 2022, respectively	1	—
Exchangeable shares, no par value; unlimited shares authorized; 95 shares and 228 shares outstanding at December 31, 2023 and 2022, respectively	—	—
Additional paid-in capital	170,474	164,879
Accumulated other comprehensive loss	—	(25)
Accumulated deficit	(166,392)	(149,597)
Total stockholders' equity	4,083	15,257
Total liabilities and stockholders' equity	\$ 10,714	\$ 22,486

Note: Share amounts as of December 31, 2023 and 2022 have been adjusted to reflect the impact of a 1-for-40 reverse stock split of the Company's common stock and exchangeable shares effected in January 2024, as discussed in Note 1.

The accompanying notes are an integral part of these consolidated financial statements.

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PERASO INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(In thousands, except per share data)

	Year Ended December 31,	
	2023	2022
Net revenue		
Product	\$ 12,853	\$ 14,199
Royalty and other	896	669
Total net revenue	13,749	14,868
Cost of net revenue	11,877	8,915
Gross profit	1,872	5,953
Operating expenses		
Research and development	14,398	19,768
Selling, general and administrative	8,505	11,108
Gain on license and asset sale	(406)	(2,557)
Impairment of goodwill	—	9,946
Total operating expenses	22,497	38,265
Loss from operations	(20,625)	(32,312)
Interest expense	(21)	(16)
Change in fair value of warrant liabilities	3,493	1,595
Financing cost - warrant issuance	—	(1,576)
Other income (expense), net	358	(89)
Net loss	\$ (16,795)	\$ (32,398)
Other comprehensive loss, net of tax:		
Net unrealized loss on available-for-sale-securities	—	(25)
Comprehensive loss	\$ (16,795)	\$ (32,423)
Net loss per share		
Basic and diluted	\$ (26.00)	\$ (64.41)
Shares used in computing net loss per share		
Basic and diluted	646	503

Note: Share and per share amounts for the years ended December 31, 2023 and 2022 have been adjusted to reflect the impact of a 1-for-40 reverse

stock split effected in January 2024, as discussed in Note 1.

The accompanying notes are an integral part of these consolidated financial statements.

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PERASO INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands)

	Series A Special Voting Preferred Stock		Common Stock		Exchangeable Shares		Additional	Accumulated		Total
	Shares	Amount	Shares	Amount	Shares	Amount	Paid-In Capital	Other Comprehensive Loss	Accumulated Deficit	Stockholders' Equity
Balance as of December 31, 2021	—	\$ —	307	\$ —	233	\$ —	\$ 159,268	\$ —	\$ (117,199)	\$ 42,069
Exchange of exchangeable shares	—	—	5	—	(5)	—	—	—	—	—
Issuance of common stock under stock plans, net of taxes paid related to net share settlements of restricted stock units	—	—	12	—	—	—	(119)	—	—	(119)
Sale of common stock and warrants	—	—	33	—	—	—	2,099	—	—	2,099
Initial recognition of fair value of warrant liability	—	—	—	—	—	—	(2,099)	—	—	(2,099)
Unrealized loss on available-for-sale securities	—	—	—	—	—	—	—	(25)	—	(25)
Stock-based compensation	—	—	—	—	—	—	5,730	—	—	5,730
Net loss	—	—	—	—	—	—	—	—	(32,398)	(32,398)
Balance as of December 31, 2022	—	—	357	—	228	—	164,879	(25)	(149,597)	15,257
Exchange of exchangeable shares	—	—	133	1	(133)	—	(1)	—	—	—
Issuance of common stock under stock plans, net of taxes paid related to net share settlements of restricted stock units	—	—	12	—	—	—	(49)	—	—	(49)
Sale of common stock and warrants	—	—	56	—	—	—	3,548	—	—	3,548
Issuance of common stock upon exercise of warrants	—	—	115	—	—	—	46	—	—	46
Initial recognition of fair value of warrant liability	—	—	—	—	—	—	(3,162)	—	—	(3,162)
Unrealized gain on available-for-sale securities	—	—	—	—	—	—	—	25	—	25
Stock-based compensation	—	—	—	—	—	—	5,213	—	—	5,213
Net loss	—	—	—	—	—	—	—	—	(16,795)	(16,795)
Balance as of December 31, 2023	—	\$ —	673	\$ 1	95	\$ —	\$ 170,474	\$ —	\$ (166,392)	\$ 4,083

Note: Share amounts for the year ended December 31, 2023 and 2022 have been adjusted to reflect the impact of a 1-for-40 reverse stock split of the Company's common stock and exchangeable shares effected in January 2024, as discussed in Note 1.

The accompanying notes are an integral part of these consolidated financial statements.

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PERASO INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

Year Ended
December 31,

	2023	2022
Cash flows from operating activities:		
Net loss	\$ (16,795)	\$ (32,398)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	3,811	3,057
Stock-based compensation	5,213	5,730
Change in fair value of warrant liabilities	(3,493)	(1,595)
Inventory write-down	3,558	—
Financing costs - warrant issuances	—	1,576
Impairment of goodwill	—	9,946
Allowance for bad debt	(154)	—
Accrued interest on debt obligation	(22)	9
Interest portion of financing lease repayment	—	(16)
Impairment of intangible assets and property and equipment	349	—
Other	3	89
Changes in assets and liabilities		
Accounts receivable	2,667	(808)
Inventories	(816)	(1,525)
Prepaid expenses and other assets	590	(59)
Tax credits and receivables	5	1,160
Accounts payable	604	(94)
Right-of-use assets	670	578
Lease liabilities - operating	(447)	(542)
Deferred revenue and other liabilities	(433)	(1,128)
Net cash used in operating activities	(4,690)	(16,020)
Cash flows from investing activities:		
Purchases of property and equipment	(94)	(988)
Purchases of intangible assets	—	(21)
Proceeds from maturities of marketable securities	1,100	11,534
Purchases of marketable securities	—	(488)
Net cash provided by investing activities	1,006	10,037
Cash flows from financing activities:		
Proceeds from sale of common stock, net	3,595	2,099
Repayment of financing lease	(107)	(61)
Taxes paid to net share settle equity awards	(49)	(120)
Net cash provided by financing activities	3,439	1,918
Net decrease in cash and cash equivalents	(245)	(4,065)
Cash and cash equivalents at beginning of year	1,828	5,893
Cash and cash equivalents at end of year	\$ 1,583	\$ 1,828
Supplemental disclosure:		
Noncash investing and financing activities:		
Initial recognition of warrant liability	\$ 3,162	\$ 3,673
Recognition of right-of-use assets and lease liabilities	\$ 138	\$ 1,003
Unrealized gain (loss) on available-for-sale securities	\$ (26)	\$ 26

The accompanying notes are an integral part of these consolidated financial statements.

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PERASO INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. The Company and Summary of Significant Accounting Policies

Peraso Inc., formerly known as MoSys, Inc. (the Company), was incorporated in California in 1991 and reincorporated in 2000 in Delaware. The Company is a fabless semiconductor company specializing in the development of millimeter wave (mmWave), which is generally described as the frequency band from 24 Gigahertz (GHz) to 300GHz, wireless technology. The Company derives revenue from selling its semiconductor devices and modules and performance of non-recurring engineering services. The Company also manufactures and sells high-performance memory semiconductor devices for a wide range of markets and receives royalties from licensees of its memory technology.

On September 14, 2021, the Company and its subsidiaries, 2864552 Ontario Inc. (Calco) and 2864555 Ontario Inc. (Canco), entered into an Arrangement Agreement (the Arrangement Agreement) with Peraso Technologies Inc. (Peraso Tech), a corporation existing under the laws of the province of Ontario, to acquire all of the issued and outstanding common shares of Peraso Tech (the Peraso Shares), including those Peraso Shares to be issued in connection with the conversion or exchange of secured convertible debentures and common share purchase warrants of Peraso Tech, as applicable, by way of a statutory plan of arrangement (the Arrangement) under the Business Corporations Act (Ontario). On December 17, 2021, following the satisfaction of the closing conditions set forth in the Arrangement Agreement, the Arrangement was completed and, the Company changed its name to "Peraso Inc." and began trading on the Nasdaq Stock Market (the Nasdaq) under the symbol "PRSO."

For accounting purposes, Peraso Tech, the legal subsidiary, was treated as the accounting acquirer and the Company, the legal parent, was treated as the accounting acquiree. The transaction was accounted for as a reverse acquisition in accordance with Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) 805, *Business Combinations* (ASC 805). Accordingly, these consolidated financial statements are a continuation of Peraso Tech's consolidated financial statements prior to December 17, 2021 and exclude the statements of operations and comprehensive loss, statement of stockholders' equity and statements of cash flows of the Company prior to December 17, 2021. See Note 2 for additional disclosure.

Liquidity and Going Concern

The Company incurred net losses of approximately \$16.8 million and \$32.4 million for the years ended December 31, 2023 and 2022, respectively, and had an accumulated deficit of approximately \$166.4 million as of December 31, 2023. These and prior year losses have resulted in

significant negative cash flows and have required the Company to raise substantial amounts of additional capital. To date, the Company has primarily financed its operations through multiple offerings of common stock and issuance of convertible notes and loans to investors and affiliates. As disclosed in Note 13, in February 2024, the Company completed a public offering of its common stock and warrants for net proceeds of \$3.3 million.

The Company expects to continue to incur operating losses for the foreseeable future as it secures additional customers and continues to invest in the commercialization of its products. The Company will need to increase revenues substantially beyond levels that it has attained in the past in order to generate sustainable operating profit and sufficient cash flows to continue doing business without raising additional capital from time to time. As a result of the Company's expected operating losses and cash burn for the foreseeable future, as well as recurring losses from operations, if the Company is unable to raise sufficient capital through additional debt or equity arrangements, there will be uncertainty regarding the Company's ability to maintain liquidity sufficient to operate its business effectively, which raises substantial doubt as to the Company's ability to continue as a going concern within one year from the date of issuance of these consolidated financial statements. These consolidated financial statements do not include any adjustments that might result from this uncertainty. There can be no assurance that such additional capital, whether in the form of debt or equity financing, will be sufficient or available and, if available, that such capital will be offered on terms and conditions acceptable to the Company. The Company's primary focus is producing and selling its products. If the Company is unsuccessful in these efforts, it will need to implement additional cost reduction strategies, which could further affect its near- and long-term business plan. These efforts may include, but are not limited to, reducing headcount and curtailing business activities.

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Basis of Presentation

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All significant intercompany transactions and balances have been eliminated in consolidation. The Company's fiscal year ends on December 31 of each calendar year. Certain prior year amounts have been reclassified for consistency with the current period presentation. These reclassifications had no effect on the reported results of operations or cash flows.

Reverse Stock Split

On December 15, 2023, the Company filed a certificate of amendment to its amended and restated certificate of incorporation with the Secretary of State of the State of Delaware to effect a 1-for-40 reverse stock split of the Company's shares of common stock. Further, on January 2, 2024, Canco filed a certificate of amendment to its amended and restated certificate of incorporation under the Ontario Business Corporations Act to effect a 1-for-40 reverse stock split of the outstanding exchangeable shares. Such amendments and ratio were previously approved by the Company's stockholders and board of directors.

As a result of the reverse stock split, which was effective for trading purposes on January 3, 2024, every 40 shares of the Company's pre-reverse split outstanding common stock and exchangeable shares were combined and reclassified into one share of common stock. Proportionate voting rights and other rights of holders of common stock and exchangeable shares were not affected by the reverse stock split. Any fractional shares of common stock and exchangeable shares resulting from the reverse stock split were rounded up to the nearest whole share. All stock options and restricted stock units outstanding and common stock reserved for issuance under the Company's equity incentive plans and warrants outstanding immediately prior to the reverse stock split were adjusted by dividing the number of affected shares of common stock by 40 and, as applicable, multiplying the exercise price by 40, as a result of the reverse stock split. All share and per-share amounts in these consolidated financial statements have been restated to reflect the reverse stock split as if it had occurred at the beginning of the earliest period presented.

Risks and Uncertainties

The Company is subject to risks from, among other things, competition associated with the industry in general, other risks associated with financing, liquidity requirements, rapidly changing customer requirements, limited operating history and the volatility of public markets.

COVID-19 and World Unrest

The global outbreak of the coronavirus disease 2019 (COVID-19) was declared a pandemic by the World Health Organization and a national emergency by the U.S. government in March 2020. This negatively affected the U.S. and global economy, disrupted global supply chains, significantly restricted travel and transportation, resulted in mandated closures and orders to "shelter-in-place" and created significant disruption of the financial markets. While the U.S. national emergency expired in May 2023 and substantially all closures and "shelter-in-place" orders have ended, there can be no assurance that COVID-19 will not impact the Company's operational and financial performance in the future, as actions taken by U.S. and foreign government agencies to prevent disease spread are uncertain, out of the Company's control, and cannot be predicted.

World unrest due to wars and terrorist attacks have led to further economic disruptions. Mounting inflationary cost pressures and recessionary fears have negatively impacted the global economy. Since mid-2022, at times, the U.S. Federal Reserve has addressed elevated inflation by increasing interest rates. Given current market conditions, the Company may be unable to access the capital markets, and additional capital may only be available to the Company on terms that could be significantly detrimental to the Company's current stockholders and to the Company's business.

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Use of Estimates

The preparation of financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses recognized during the reported period. Material estimates may include assumptions made in determining reserves for uncollectible receivables, inventory write-downs, impairment of long-term assets, purchase price allocations, valuation allowance on deferred tax assets, accruals for potential liabilities and assumptions made in valuing equity instruments and warrant liabilities. Actual results could differ from those estimates.

Cash Equivalents and Investments

The Company has invested its excess cash in money market accounts, certificates of deposit, corporate debt, government-sponsored enterprise bonds and municipal bonds and considers all highly liquid debt instruments purchased with an original maturity of three months or less to be cash equivalents. Investments with original maturities greater than three months and remaining maturities less than one year are classified as short-term investments. Investments with remaining maturities greater than one year are classified as long-term investments. Management generally determines the

appropriate classification of securities at the time of purchase. All securities are classified as available-for-sale. The Company's available-for-sale short-term and long-term investments are carried at fair value, with the unrealized holding gains and losses reported in accumulated other comprehensive income (loss). Realized gains and losses and declines in the value judged to be other-than-temporary are included in the other income, net line item in the consolidated statements of operations. The cost of securities sold is based on the specific identification method.

Fair Value Measurements

The Company measures the fair value of financial instruments using a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels:

Level 1 —Inputs used to measure fair value are unadjusted quoted prices that are available in active markets for the identical assets or liabilities as of the reporting date.

Level 2 —Pricing is provided by third party sources of market information obtained through the Company's investment advisors, rather than models. The Company does not adjust for, or apply, any additional assumptions or estimates to the pricing information it receives from advisors. The Company's Level 2 securities include cash equivalents and available-for-sale securities, which consisted primarily of certificates of deposit, corporate debt, and government agency and municipal debt securities from issuers with high-quality credit ratings. The Company's investment advisors obtain pricing data from independent sources, such as Standard & Poor's, Bloomberg and Interactive Data Corporation, and rely on comparable pricing of other securities because the Level 2 securities are not actively traded and have fewer observable transactions. The Company considers this the most reliable information available for the valuation of the securities.

Level 3 —Unobservable inputs that are supported by little or no market activity and reflect the use of significant management judgment are used to measure fair value. These values are generally determined using pricing models for which the assumptions utilize management's estimates of market participant assumptions. The determination of fair value for Level 3 investments and other financial instruments involves the most management judgment and subjectivity.

The carrying amounts of financial assets and liabilities, such as cash and cash equivalents, accounts receivable, accounts payable and other payables, approximate their fair values because of the short maturity of these instruments. The carrying values of lease obligations and long-term financing obligations approximate their fair values because interest rates on these obligations are based on prevailing market interest rates. The Company measures the fair value of its warrant liabilities using Level 3 inputs.

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Derivatives and Liability-Classified Instruments

The Company accounts for common stock warrants as either equity-classified or liability-classified instruments based on an assessment of the specific terms of the warrants and the guidance provided by the Financial Accounting Standards Board (FASB) in ASC 480, *Distinguishing Liabilities from Equity* (ASC 480) and ASC 815, *Derivatives and Hedging* (ASC 815). The assessment considers whether the warrants are freestanding financial instruments pursuant to ASC 480, meet the definition of a liability pursuant to ASC 480, and meet all of the requirements for equity classification under ASC 815, including whether the warrants are indexed to the Company's own stock and whether the holders of the warrants could potentially require net cash settlement in a circumstance outside of the Company's control, among other conditions for equity classification. This assessment, which requires the use of professional judgment, is conducted at the time of warrant issuance and as of each subsequent quarterly period end date while the warrants are outstanding.

Allowance for Doubtful Accounts

The Company establishes an allowance for doubtful accounts to ensure that its trade receivables balances are not overstated due to uncollectibility. The Company performs ongoing customer credit evaluations within the context of the industry in which it operates and generally does not require collateral from its customers. A specific allowance of up to 100% of the invoice value is provided for any problematic customer balances. Delinquent account balances are written off after management has determined that the likelihood of collection is remote. The Company grants credit only to customers deemed creditworthy in the judgment of management. The allowance for doubtful accounts receivable was approximately \$30,000 and \$183,000 as of December 31, 2023 and 2022, respectively.

Inventories

The Company values its inventories at the lower of cost, which approximates actual cost on a first-in, first-out basis, or net realizable value. Costs of inventories primarily consisted of material and third party assembly costs. The Company records write-downs for estimated obsolescence or unmarketable inventories based upon assumptions about future demand and market conditions. If actual market conditions are less favorable than those expected by management, additional adjustments to inventory valuation may be required. Charges for obsolete and slow-moving inventories are recorded based upon an analysis of specific identification of obsolete inventory items and quantification of slow moving inventory items. The Company recorded write-downs of inventory of approximately \$3,558,000 and \$420,000 during the years ended December 31, 2023 and 2022, respectively.

Property and Equipment

Property and equipment are originally recorded at cost. Depreciation is computed using the straight-line method over the estimated useful lives of the assets, generally three to six years. Depreciation is recorded in cost of sales and operating expenses in the consolidated statements of operations and comprehensive loss. Leasehold improvements and assets acquired through capital leases are amortized over the shorter of their estimated useful life or the lease term, and related amortization is recorded in operating expenses in the consolidated statements of operations.

Intangible and Long-lived Assets

Intangible assets are recorded at cost and amortized on a straight-line method over their estimated useful lives of three to ten years. Amortization of developed technology and other intangibles directly related to the Company's products is included in cost of net revenue, while amortization of customer relationships and other intangibles not associated with the Company's products is included in selling, general and administrative expenses in the consolidated statements of operations and comprehensive loss.

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The Company regularly reviews the carrying value and estimated lives of its long-lived assets and finite-lived intangible assets to determine

whether indicators of impairment may exist which warrant adjustments to carrying values or estimated useful lives. The determinants used for this evaluation include management's estimate of the asset's ability to generate positive income from operations and positive cash flow in future periods as well as the strategic significance of the assets to the Company's business objective. Should an impairment exist, the impairment loss would be measured based on the excess of the carrying amount of the long-lived asset group over the asset's fair value.

Purchased Intangible Assets

Intangible assets acquired in business combinations are accounted for based on the fair value of assets purchased and are amortized over the period in which economic benefit is estimated to be received. Intangible assets subject to amortization, including those acquired in business combinations were as follows (amounts in thousands):

	December 31, 2023			
	Gross Carrying Amount	Accumulated Amortization	Other Impairment	Net Carrying Amount
Developed technology	\$ 5,726	\$ (3,471)	\$ —	\$ 2,255
Customer relationships	2,556	(1,550)	—	1,006
Other	186	(61)	(106)	19
Total	<u>\$ 8,468</u>	<u>\$ (5,082)</u>	<u>\$ (106)</u>	<u>\$ 3,280</u>

	December 31, 2022			
	Gross Carrying Amount	Accumulated Amortization		Net Carrying Amount
Developed technology	\$ 5,726	\$ (1,491)		\$ 4,235
Customer relationships	2,556	(666)		1,890
Other	186	(33)		153
Total	<u>\$ 8,468</u>	<u>\$ (2,190)</u>		<u>\$ 6,278</u>

Developed technology primarily consisted of MoSys' products that have reached technological feasibility and primarily relate to its memory semiconductor products and technology. The value of the developed technology was determined by discounting estimated net future cash flows of these products. Amortization related to developed technology of \$2.0 million and \$1.4 million for the years ended December 31, 2023 and 2022, respectively, was included in cost of net revenue in the consolidated statements of operations and comprehensive loss.

Customer relationships relate to the Company's ability to sell existing and future versions of its products to MoSys' customers existing at the time of the arrangement. The fair value of the customer relationships was determined by discounting estimated net future cash flows from the customer relationships. Amortization related to customer relationships of \$0.9 million and \$0.6 million for the years ended December 31, 2023 and 2022, respectively, was included in selling, general and administrative expense in the consolidated statements of operations and comprehensive loss.

During 2023, the Company revised the remaining estimated life for its developed technology and customer relationship intangible assets to 18 months as a result of the end-of-life of its memory products (see Note 12).

Other amortization expense was approximately \$28,000 and \$27,000 for the years ended December 31, 2023 and 2022, respectively.

As of December 31, 2023, estimated future amortization expense related to intangible assets is expected to be (in thousands):

Year ending December 31,	
2024	\$ 3,267
2025	6
2026	6
2027	1
	<u>\$ 3,280</u>

Business Combinations

The Company allocates the fair value of purchase consideration to the tangible assets acquired, liabilities assumed and intangible assets acquired based on their estimated fair values. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is recorded as goodwill to reporting units based on the expected benefit from the business combination. Allocation of purchase consideration to identifiable assets and liabilities affects the amortization expense, as acquired finite-lived intangible assets are amortized over the useful life, whereas any indefinite-lived intangible assets, including goodwill, are not amortized. During the measurement period, which is not to exceed one year from the acquisition date, the Company records adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Upon the conclusion of the measurement period, any subsequent adjustments are recorded to earnings. Acquisition-related expenses are recognized separately from business combinations and are expensed as incurred.

Goodwill

The Company determines the amount of a potential goodwill impairment by comparing the fair value of the reporting unit with its carrying amount. To the extent the carrying value of a reporting unit exceeds its fair value, a goodwill impairment charge is recognized.

The Company has determined that it has a single reporting unit for purposes of performing its goodwill impairment test. As the Company uses the market approach to determine the step one fair value of the reporting unit, the price of its common stock is an important component of the fair value calculation. If the Company's stock price experiences significant price and volume fluctuations, this will impact the fair value of the reporting unit, which can lead to potential impairment in future periods. The Company reviews goodwill for impairment on an annual basis or whenever events or changes in circumstances indicate the carrying value of an asset may not be recoverable. The Company first assesses qualitative factors to determine whether it is more-likely-than-not that the fair value of the reporting unit is less than the carrying amount as a basis for determining whether it is necessary to perform an impairment test. If the qualitative assessment warrants further analysis, the Company compares the fair value of the reporting unit to its carrying value. The fair value of the reporting unit is determined using the market approach. If the fair value of the reporting unit exceeds the carrying value of net assets of the reporting unit, goodwill is not impaired. If the carrying value of the reporting unit's goodwill exceeds its fair value, then the Company must

record an impairment charge equal to the difference.

During the three months ended December 31, 2022, the Company concluded a triggering event had occurred due to the sustained decrease in the price per share of its common stock and related reduced market capitalization. The Company performed a test for goodwill impairment, and, due to the decrease in the price per share of its common stock, the test results indicated the goodwill carrying value was greater than its implied fair value. As a result of the impairment test, the Company recorded a non-cash impairment charge totaling \$9.9 million, and the Company's goodwill balance was reduced to zero as of December 31, 2022.

Leases

ASC 842, *Leases* (ASC 842), requires an entity to recognize a right-of-use asset and a lease liability for all leases with terms longer than 12 months. The Company adopted ASC 842 utilizing the modified retrospective transition method. The Company elected the practical expedient afforded in ASC 842 in which the Company did not reassess whether any contracts that existed prior to adoption have or contain leases or the classification of its existing leases.

Revenue Recognition

The Company recognizes revenue in accordance with ASC Topic 606, *Revenue from Contracts with Customers*, and its amendments (ASC 606). As described below, the analysis of contracts under ASC 606 supports the recognition of revenue at a point in time, resulting in revenue recognition timing that is materially consistent with the Company's historical practice of recognizing product revenue when title and risk of loss pass to the customer.

The Company generates revenue primarily from sales of integrated circuits and module products, performance of engineering services and licensing of its intellectual property. Revenues are recognized when control is transferred to customers in amounts that reflect the consideration the Company expects to be entitled to receive in exchange for those goods. Revenue recognition is evaluated through the following five steps: (i) identification of the contract, or contracts, with a customer; (ii) identification of the performance obligations in the contract; (iii) determination of the transaction price; (iv) allocation of the transaction price to the performance obligations in the contract; and (v) recognition of revenue when or as a performance obligation is satisfied.

Product revenue

Revenue is recognized when performance obligations under the terms of a contract with a customer are satisfied. The majority of the Company's contracts have a single performance obligation to transfer products. Accordingly, the Company recognizes revenue when title and risk of loss have been transferred to the customer, generally at the time of shipment of products. Revenue is measured as the amount of consideration the Company expects to receive in exchange for transferring products and is generally based upon a negotiated, formula, list or fixed price. The Company sells its products both directly to customers and through distributors generally under agreements with payment terms typically 60 days or less.

The Company may record an estimated allowance, at the time of shipment, for future returns and other charges against revenue consistent with the terms of sale.

Royalty and other

The Company's licensing contracts typically provide for royalties based on the licensee's use of the Company's memory technology in its currently shipping commercial products. The Company estimates its royalty revenue in the calendar quarter in which the licensee uses the licensed technology. Payments are received in the subsequent quarter. The Company also generates revenue from licensing its technology. The Company recognizes license fees as revenue at the point of time when the control of the license has been transferred and the Company has no continuing performance obligations to the customer.

Engineering services revenue

Engineering and development contracts with customers generally contain a single performance obligation that is delivered over time. Revenue is recognized using an output method that is consistent with the satisfaction of the performance obligation as a measure of progress.

Deferred cost of net revenue

During the year ended December 31, 2022, the Company had \$ 1.1 million of product shipments for which the revenue recognition criteria under ASC 606 had not been met. Accordingly, the cost of net revenue of approximately \$0.6 million associated with these shipments was deferred and presented as deferred cost of net revenue in the consolidated balance sheets as of December 31, 2022. During the three months ended March 31, 2023, the Company recognized the associated revenue and cost of net revenue.

Contract liabilities – deferred revenue

The Company's contract liabilities consist of advance customer payments and deferred revenue. The Company classifies advance customer payments and deferred revenue as current or non-current based on the timing of when the Company expects to recognize revenue. As of December 31, 2023 and 2022, contract liabilities were in a current position and included in deferred revenue.

During the year ended December 31, 2023, the Company recognized approximately \$ 332,000 of revenue that had been included in deferred revenue as of December 31, 2022.

See Note 7 for disaggregation of revenue by geography.

The Company does not have significant financing components, as payments from customers are typically due within 60 days of invoicing, and the Company has elected the practical expedient to not value financing components that are less than one year. Shipping and handling costs are generally incurred by the customer, and, therefore, are not recorded as revenue.

Cost of Net Revenue

Cost of net revenue consists primarily of direct and indirect costs of product sales, including amortization of intangible assets and depreciation of production-related fixed assets.

Advertising Costs

Advertising costs are expensed as incurred. Advertising costs were not significant for the years ended December 31, 2023 and 2022.

Research and Development

Engineering costs are recorded as research and development expense in the period incurred.

Stock-Based Compensation

The Company periodically issues stock options and restricted stock awards to employees and non-employees. The Company accounts for such grants based on ASC No. 718, whereby the value of the award is measured on the date of grant and recognized as compensation expense on a straight-line basis over the vesting period. The fair value of the Company's stock options is estimated using the Black-Scholes-Merton Option Pricing (Black Scholes) model, which uses certain assumptions related to risk-free interest rates, expected volatility, expected life of the options, and future dividends. Compensation expense is recorded based upon the value derived from the Black Scholes model. The assumptions used in the Black Scholes model could materially affect compensation expense recorded in future periods.

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Foreign Currency Transactions

The functional currency of the Company is the U.S. dollar. All foreign currency transactions are initially measured and recorded in an entity's functional currency using the exchange rate on the date of the transaction. All monetary assets and liabilities are remeasured at the end of each reporting period using the exchange rate at that date. All non-monetary assets and related expense, depreciation or amortization are not subsequently remeasured and are measured using the historical exchange rate. An average exchange rate may be used to recognize income and expense items earned or incurred evenly over a period. Foreign exchange gains and losses resulting from the settlement of such transactions are recognized in the statement of operations, except for the gains and losses arising from the conversion of the carrying amount of the foreign currency denominated convertible preferred shares into the functional currency that are presented as adjustment to the net loss to arrive at net loss attributable to common stockholders.

Per-Share Amounts

Basic net loss per share is computed by dividing net loss for the period by the weighted-average number of exchangeable shares and shares of common stock outstanding during the period. Diluted net loss per share gives effect to all potentially dilutive exchangeable and common shares outstanding during the period. Potentially dilutive common shares consist of incremental exchangeable shares and shares of common stock issuable upon the achievement of escrow terms, exercise of stock options, vesting of stock awards and exercise of warrants.

The following table sets forth securities outstanding that were excluded from the computation of diluted net loss per share as their inclusion would be anti-dilutive (in thousands):

	December 31,	
	2023	2022
Escrow shares - exchangeable shares	33	33
Escrow shares - common stock	13	13
Options to purchase common stock	36	37
Unvested restricted common stock units	15	26
Common stock warrants	242	124
Total	339	233

Income Taxes

The Company determines deferred tax assets and liabilities based upon the differences between the financial statement and tax bases of the Company's assets and liabilities using tax rates in effect for the year in which the Company expects the differences to affect taxable income. A valuation allowance is established for any deferred tax assets for which it is more likely than not that all or a portion of the deferred tax assets will not be realized.

The Company files U.S. federal and state and foreign income tax returns in jurisdictions with varying statutes of limitations. The 2015 through 2020 tax years generally remain subject to examination by U.S. federal and state tax authorities, and the 2011 through 2020 tax years generally remain subject to examination by foreign tax authorities.

At December 31, 2023, the Company did not have any material unrecognized tax benefits nor expect its unrecognized tax benefits to change significantly over the next 12 months. The Company recognizes interest related to unrecognized tax benefits as income tax expense and penalties related to unrecognized tax benefits as other income and expense. During the years ended December 31, 2023 and 2022, the Company did not recognize any interest or penalties related to unrecognized tax benefits.

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Recently Issued Accounting Pronouncements

In November 2023, the FASB issued ASU No. 2023-07, *Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures*, which requires disclosure of incremental segment information on an annual and interim basis. ASU No. 2023-07 is effective for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024, and it requires retrospective application to all prior periods presented in the financial statements. The Company is currently evaluating the impact that this ASU will have on the presentation of its consolidated financial statements.

In December 2023, the FASB issued ASU No. 2023-09, *Income Taxes (Topic 740): Improvements to Income Tax Disclosures*, which expands disclosures in an entity's income tax rate reconciliation table and disclosures regarding cash taxes paid both in the U.S. and foreign jurisdictions. The update will be effective for annual periods beginning after December 15, 2024. The Company is currently evaluating the impact that this ASU will have on the presentation of its consolidated financial statements.

Other recent authoritative guidance issued by the FASB (including technical corrections to the ASC), the American Institute of Certified Public Accountants, and the Securities and Exchange Commission (the SEC) did not, or is not expected to, have a material impact on the Company's consolidated financial statements and related disclosures.

Note 2: Fair Value of Financial Instruments

The following table represents the Company's assets and liabilities measured at fair value on a recurring basis as of December 31, 2023 and 2022 and the basis for that measurement (in thousands):

	December 31, 2023			
	Fair Value	Level 1	Level 2	Level 3
Assets:				
Money market funds (1)	\$ 1	\$ —	\$ —	\$ —
Liabilities:				
Warrant liability	\$ 1,748	\$ —	\$ —	\$ 1,748
	December 31, 2022			
	Fair Value	Level 1	Level 2	Level 3
Assets:				
Money market funds (1)	\$ 73	\$ —	\$ —	\$ —
Corporate notes and commercial paper	\$ 1,078	\$ —	\$ 1,078	\$ —
Liabilities:				
Warrant liability	\$ 2,079	\$ —	\$ —	\$ 2,079

(1) Included in cash and cash equivalents

The following table represents the Company's determination of fair value for its financial assets (cash equivalents and investments) (in thousands):

	December 31, 2023			
	Cost	Unrealized Gains	Unrealized Losses	Fair Value
Cash and cash equivalents	\$ 1,583	\$ —	\$ —	\$ 1,583
	December 31, 2022			
	Cost	Unrealized Gains	Unrealized Losses	Fair Value
Cash and cash equivalents	\$ 1,828	\$ —	\$ —	\$ 1,828
Short-term investments	1,103	—	(25)	1,078
	\$ 2,931	\$ —	\$ (25)	\$ 2,906

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Note 3. Balance Sheet Detail

	December 31,	
	2023	2022
	(in thousands)	
Inventories:		
Raw materials	\$ 209	\$ 1,279
Work-in-process	1,517	2,595
Finished goods	880	1,474
	<u>\$ 2,606</u>	<u>\$ 5,348</u>
Prepaid expenses and other:		
Prepaid inventory and production costs	\$ 452	\$ 186
Prepaid insurance	37	77
Prepaid software	67	173
Other	28	138
	<u>\$ 584</u>	<u>\$ 574</u>
Property and equipment, net:		
Machinery and equipment	\$ 4,848	\$ 4,630
Computer equipment and software	377	342
Furniture and fixtures	93	93
Leasehold improvements	428	555
Total property and equipment	5,746	5,620
Less: Accumulated depreciation and amortization	(4,590)	(3,395)
	<u>\$ 1,156</u>	<u>\$ 2,225</u>

During the year ended December 31, 2023, the Company wrote off assets with a book value of approximately \$ 243,000 to depreciation expense

as a loss on disposal. The net book value of assets written off was allocated between cost of net revenue of \$116,000 and the remaining book value of \$127,000 was charged to operating expenses.

During the year ended December 31, 2022, the Company wrote-off fully depreciated assets, or assets that were no longer in service, with a historical cost of approximately \$6,380,000 with corresponding accumulated depreciation of approximately \$6,227,000. Depreciation expense of approximately \$535,000 and approximately \$384,000 was charged to cost of net revenue and operating expenses, respectively, for the year ended December 31, 2023. The Company wrote off the remaining book value of approximately \$153,000 to depreciation expense as a loss on disposal during the year ended December 31, 2022.

	December 31,	
	2023	2022
	(in thousands)	
Accrued Expenses & Other:		
Accrued wages and employee benefits	\$ 405	\$ 469
Professional fees, legal and consulting	158	514
Financing liability	—	330
Warranty accrual	37	39
Other	11	465
	<u>\$ 611</u>	<u>\$ 1,817</u>

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Note 4. Commitments and Contingencies

Leases

The Company has facility leases that it accounts for under ASC 842, including the operating leases for its corporate headquarters facility in San Jose, California, and facilities in Toronto and Markham Ontario, Canada. In November 2023, the Company renewed the San Jose facility lease for a one-year term commencing January 15, 2024 (the Renewal Term), and effective with the commencement of the Renewal term the Company ceased accounting for the lease under ASC 842. In December 2023, the Company renewed the Toronto office lease for a one-year term commencing January 1, 2024. In May 2022, the Company entered into a lease for the facility in Markham with a 60-month term, which commenced June 21, 2022. The Markham landlord also provided a lease incentive of approximately \$286,200 (the Incentive). In 2023, the Company received payment of \$143,100 from the Markham landlord of the first installment of the Incentive. The remaining balance of the Incentive is paid to the Company in the form of an adjustment to rent during the last three months of each year during the remaining lease term. During 2023, a credit of \$35,775 was made against the rent during the three months ended December 31, 2023. As of December 31, 2023, the pending Lease Incentive to be received was \$107,325.

Upon the renewal of the Toronto lease in 2023, the Company recognized a right-of-use asset of approximately \$137,700. The discount rate used to measure the lease assets and liabilities for the renewal was 8%.

The initial right-of-use asset and corresponding liability of approximately \$1.0 million for the Markham facility lease was measured at the present value of the future minimum lease payments. The discount rate used to measure the lease assets and liabilities was 8%. Lease expense is recognized on a straight-line basis over the lease term.

On March 1, 2022, the Company entered into a 36-month finance lease agreement for the lease of equipment resulting in the recognition of a right-of-use asset and lease liability of approximately \$274,000.

On November 1, 2022, the Company entered into a 36-month finance lease agreement for the lease of equipment resulting in the recognition of a right-of-use asset of approximately \$124,000 and lease liability of approximately \$117,000.

The following table provides the details of right-of-use assets and lease liabilities as of December 31, 2023 (in thousands):

	Year Ended December 31, 2023
Right-of-use assets:	
Operating leases	\$ 422
Finance lease	193
Total right-of-use assets	<u>\$ 615</u>
Lease liabilities:	
Operating leases	\$ 525
Finance lease	194
Total lease liabilities	<u>\$ 719</u>

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Future minimum payments under the leases at December 31, 2023 are listed in the table below (in thousands):

Year ending December 31,	
2024	\$ 413
2025	166
2026	110
2027	108
Total future lease payments	<u>797</u>
Less: imputed interest	<u>(78)</u>
Present value of lease liabilities	<u>\$ 719</u>

The following table provides the details of supplemental cash flow information (in thousands):

	Year Ended December 31,	
	2023	2022
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows for leases	\$ 674	\$ 704

Rent expense was approximately \$0.6 million and \$0.7 million for the years ended December 31, 2023 and 2022, respectively. In addition to the minimum lease payments, the Company is responsible for property taxes, insurance and certain other operating costs related to the leased facilities and equipment.

Indemnification

In the ordinary course of business, the Company enters into contractual arrangements under which it may agree to indemnify the counterparties from any losses incurred relating to breach of representations and warranties, failure to perform certain covenants, or claims and losses arising from certain events as outlined within the particular contract, which may include, for example, losses arising from litigation or claims relating to past performance. Such indemnification clauses may not be subject to maximum loss clauses. The Company has also entered into indemnification agreements with its officers and directors. No material amounts were reflected in the Company's consolidated financial statements for the years ended December 31, 2023 and 2022 related to these indemnifications.

The Company has not estimated the maximum potential amount of indemnification liability under these agreements due to the limited history of prior claims and the unique facts and circumstances applicable to each particular agreement. To date, the Company has not made any payments related to these indemnification agreements.

Product Warranties

The Company warrants certain of its products to be free of defects generally for a period of three years. The Company estimates its warranty costs based on historical warranty claim experience and includes such costs in cost of net revenues. Warranty costs were not material for the years ended December 31, 2023 and 2022.

Legal Matters

The Company is not a party to any legal proceeding that the Company believes is likely to have a material adverse effect on its consolidated financial position or results of operations. From time to time the Company may be subject to legal proceedings and claims in the ordinary course of business. These claims, even if not meritorious, could result in the expenditure of significant financial resources and diversion of management efforts.

Purchase Obligations

The Company's primary purchase obligations include non-cancelable purchase orders for inventory and computer-aided-design (CAD) software. At December 31, 2023, the Company had outstanding non-cancelable purchase orders for inventory, primarily wafers and substrates, and related expenditures of approximately \$2.3 million and non-cancelable purchase orders for CAD software of \$ 3.1 million over 24 months.

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Note 5: Retirement Savings Plan

Effective January 1997, the Company adopted the Peraso 401(k) Plan (the Savings Plan), which qualifies as a thrift plan under Section 401(k) of the Internal Revenue Code. Full-time and part-time employees who are at least 21 years of age are eligible to participate in the Savings Plan at the time of hire. Participants may contribute up to 15% of their earnings to the Savings Plan. No matching contributions were made by the Company during the years ended December 31, 2023 and 2022.

Note 6. Business Segments, Concentration of Credit Risk and Significant Customers

The Company determines its reporting units in accordance with ASC No. 280, *Segment Reporting* (ASC 280). Management evaluates a reporting unit by first identifying its operating segments under ASC 280. The Company then evaluates each operating segment to determine if it includes one or more components that constitute a business. If there are components within an operating segment that meet the definition of a business, the Company evaluates those components to determine if they must be aggregated into one or more reporting units. If applicable, when determining if it is appropriate to aggregate different operating segments, the Company determines if the segments are economically similar and, if so, the operating segments are aggregated.

Management has determined that the Company has one consolidated operating segment. The Company's reporting segment reflects the manner in which its chief operating decision maker reviews results and allocates resources. The Company's reporting segment meets the definition of an operating segment and does not include the aggregation of multiple operating segments.

The Company recognized revenue from shipments of product, licensing of its technologies and performance of services to customers by geographical location as follows (in thousands):

	Year Ended December 31,	
	2023	2022
United States	\$ 8,786	\$ 8,932
Hong Kong	689	2,428
Taiwan	2,633	1,205
Rest of world	1,641	2,303
Total net revenue	\$ 13,749	\$ 14,868

The following is a breakdown of product revenue by category (in thousands):

Years Ended
December 31,

	2023	2022
Product category		
Memory ICs	\$ 8,446	\$ 7,722
mmWave ICs	2,726	3,289
mmWave modules	1,677	3,170
mmWave other products	4	18
	<u>\$ 12,853</u>	<u>\$ 14,199</u>

Customers who accounted for at least 10% of total net revenue were:

	Year Ended December 31,	
	2023	2022
Customer A	35%	26%
Customer B	22%	11%
Customer C	18%	*
Customer D	*	21%
Customer E	*	16%

* Represents less than 10%

As of December 31, 2023, three customers accounted for 83% of accounts receivable, and the Company had a provision for doubtful accounts of \$30,000 against one of the customer's receivables. Four customers accounted for 79% of accounts receivable as of December 31, 2022.

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Note 7. Income Tax Provision

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

Significant components of the Company's deferred tax assets and liabilities were (in thousands):

	Year Ended December 31,	
	2023	2022
Deferred tax assets:		
Federal and state loss carryforwards	\$ 4,847	\$ 9,017
Reserves, accruals and other	328	344
Depreciation and amortization	1,329	611
Deferred stock-based compensation	2,429	2,682
Capitalized research and development costs	660	965
Research and development credit carryforwards	6,744	6,655
Total deferred tax assets	16,337	20,274
Less: Valuation allowance	(16,337)	(20,274)
Net deferred tax assets, net	<u>\$ —</u>	<u>\$ —</u>

The \$3.9 million decrease in the valuation allowance during 2023 was primarily the result of a decrease to the net operating loss carryforwards for the current year. The valuation allowance increased by \$4.4 million during the year ended December 31, 2022.

Utilization of the Company's net operating losses (NOLs) and tax credit carryforwards is subject to a substantial annual limitation due to the ownership change limitations provided by the Internal Revenue Code (IRC) and similar state provisions. Section 382 of the IRC (Section 382) imposes limitations on a corporation's ability to utilize its NOL and tax credit carryforwards, if it experiences an "ownership change." In general terms, an ownership change may result from transactions increasing the ownership percentage of certain stockholders in the stock of the corporation by more than 50% over a three-year period. In the event of an ownership change, utilization of the NOLs would be subject to an annual limitation under Section 382 determined by multiplying the value of the Company's stock at the time of the ownership change by the applicable long-term tax-exempt rate. While a formal study has not been performed, the Company believes that Section 382 ownership changes occurred as a result of financing transaction in 2018 and the Arrangement. The Company believes the Section 382 limitations will result in approximately 91% of the federal and state NOLs expiring before they can be utilized, and approximately 98% of the federal tax credit carryforwards expiring before they can be utilized.

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As of December 31, 2023, the Company had NOLs of approximately \$ 212.7 million for federal income tax purposes and approximately \$ 131.2 million for state income tax purposes. Only approximately \$18.7 million of the federal NOLs and \$ 13.3 million of the state NOLs are expected to be available before expiration due to the Section 382 limitation. These NOLs are available to reduce future taxable income and will expire at various times from 2025 through 2037, except federal NOLs from 2018 to 2023 which have no expiration date. As of December 31, 2023, the Company also had federal research and development tax credit carryforwards of approximately \$8.1 million that will expire at various times through 2042, and California research and development credits of approximately \$8.5 million, which do not have an expiration date.

A reconciliation of income taxes provided at the federal statutory rate (21%) to the actual income tax provision is as follows (in thousands):

	Year Ended December 31,	
	2023	2022
Income tax benefit computed at U.S. statutory rate	\$ 277	\$ (6,804)
Research and development credits	—	(38)

Stock-based compensation	9	1,033
Amortization of intangible assets	(60)	(60)
Goodwill impairment	—	2,089
Change in fair value of warrant liabilities	(734)	—
Valuation allowance changes affecting tax provision	506	3,774
Other	2	6
Income tax provision	<u>\$ —</u>	<u>\$ —</u>

Note 8. Stock-Based Compensation

Common Stock Equity Plans

In 2010, the Company adopted the 2010 Equity Incentive Plan and later amended it in 2014, 2017 and 2018 (the Amended 2010 Plan). The Amended 2010 Plan was terminated in August 2019 and remains in effect as to outstanding equity awards granted prior to the date of expiration. No new awards may be made under the Amended 2010 Plan.

In August 2019, the Company's stockholders approved the 2019 Stock Incentive Plan (the 2019 Plan) to replace the Amended 2010 Plan. The 2019 Plan authorizes the board of directors or the compensation committee of the board of directors to grant a broad range of awards including stock options, stock appreciation rights, restricted stock, performance-based awards, and restricted stock units. Under the 2019 Plan, 4,563 shares were initially reserved for issuance. In November 2021, in connection with the approval of the Arrangement, the Company's stockholders approved an amendment increasing the number of shares reserved for issuance under the 2019 Plan by 77,674 shares.

Under the 2019 Plan, the term of all incentive stock options granted to a person who, at the time of grant, owns stock representing more than 10% of the voting power of all classes of the Company's stock may not exceed five years. The exercise price of stock options granted under the 2019 Plan must be at least equal to the fair market value of the shares on the date of grant. Generally, awards under the 2019 Plan will vest over a three to four-year period, and options will have a term of 10 years from the date of grant. In addition, the 2019 Plan provides for automatic acceleration of vesting for options granted to non-employee directors upon a change of control of the Company.

In connection with the Arrangement, the Company assumed the Peraso Technologies Inc. 2009 Share Option Plan (the 2009 Plan) and all outstanding options granted pursuant to the terms of the 2009 Plan. Each outstanding, unexercised and unexpired option under the 2009 Plan, whether vested or unvested, was assumed by the Company and converted into options to purchase shares of the Company's common stock and became exercisable by the holder of such option in accordance with its terms, with (i) the number of shares of common stock subject to each option multiplied by the Exchange Ratio and (ii) the per share exercise price upon the exercise of each option divided by the Exchange Ratio. In connection with the Arrangement, no further awards will be made under the 2009 Plan.

The 2009 Plan, the Amended 2010 Plan and the 2019 Plan are referred to collectively as the "Plans."

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Stock-Based Compensation Expense

The Company recorded compensation costs of \$4.2 million and \$4.3 million related to the vesting of stock options during the years ended December 31, 2023 and 2022, respectively. At December 31, 2023, the unamortized compensation cost was approximately \$3.3 million related to stock options and is expected to be recognized as expense over a weighted average period of approximately two years. The Company recorded compensation costs of \$1.0 million and \$1.4 million related to the vesting of restricted stock options during the years ended December 31, 2023 and 2022, respectively. The unamortized compensation cost at December 31, 2023 was \$1.0 million related to restricted stock units and is expected to be recognized as expense over a weighted average period of approximately two years.

Common Stock Options and Restricted Stock

The term of all incentive stock options granted to a person who, at the time of grant, owns stock representing more than 10% of the voting power of all classes of the Company's stock may not exceed five years. The exercise price of stock options granted under the 2019 Plan must be at least equal to the fair market value of the shares on the date of grant. Generally, options granted under the 2019 Plan will vest over a three to four-year period and have a term of 10 years from the date of grant. In addition, the 2019 Plan provides for automatic acceleration of vesting for options granted to non-employee directors upon a change of control (as defined in the 2019 Plan) of the Company.

The following table summarizes the activity in the shares available for grant under the Plans during the years ended December 31, 2023 and 2022 and options outstanding as of December 31, 2023 and 2022. (in thousands, except exercise price):

	Shares Available for Grant	Options Outstanding	
		Number of Shares	Weighted Average Exercise Prices
Balance as of December 31, 2021	76	39	\$ 139.60
RSUs granted	(44)	—	—
RSUs cancelled and returned to the Plans	7	—	—
Options cancelled	—	(2)	\$ 250.80
Balance as of December 31, 2022	39	37	\$ 132.80
RSUs granted	(5)	—	—
RSUs cancelled and returned to the 2019 Plan	5	—	—
Options cancelled	—	(1)	\$ 321.30
Balance as of December 31, 2023	39	36	\$ 127.00

The following table summarizes significant ranges of outstanding and exercisable options as of December 31, 2023 (in thousands, except contractual life and exercise price):

Options Outstanding		Options Exercisable	
Weighted Average Remaining	Weighted	Weighted	

Range of Exercise Price	Number Outstanding	Contractual Life (in Years)	Average Exercise Price	Number Exercisable	Average Exercise Price	Aggregate Intrinsic value
\$62.80 - \$599.60	36	6.77	\$ 105.20	26	\$ 103.60	\$ —
\$1,024.00 - \$5,759.60	—	2.73	\$ 4,050.80	—	\$ 4,050.80	\$ —
\$5,760.00 - \$16,399.60	—	2.73	\$ 5,760.00	—	\$ 5,760.00	\$ —
\$16,400.00 - \$36,960.00	—	1.33	\$ 16,400.00	—	\$ 16,400.00	\$ —
\$62.80 - \$36,960.00	36	6.76	\$ 122.80	26	\$ 127.00	\$ —

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A summary of RSU activity under the Plans is presented below (in thousands, except for fair value):

	Number of Shares	Weighted Average Grant-Date Fair Value
Non-vested shares as of December 31, 2021	2	\$ 180.00
Granted	44	\$ 84.00
Vested	(15)	\$ 91.60
Effect of business combination	(4)	\$ 87.61
Non-vested shares as of December 31, 2022	27	\$ 82.46
Granted	4	\$ 24.62
Vested	(14)	\$ 75.72
Cancelled	(2)	\$ 82.90
Non-vested shares as of December 31, 2023	15	\$ 69.63

Note 9. Stockholders' Equity

Exchangeable Shares and Preferred Stock

As discussed in Note 1, on December 17, 2021, following the satisfaction of the closing conditions set forth in the Arrangement Agreement, the Arrangement was completed. Pursuant to the completion of the Arrangement, each Peraso Share that was issued and outstanding immediately prior to December 17, 2021 was converted into either newly issued shares of common stock of the Company or shares of Canco, which are exchangeable for shares of the Company's common stock (Exchangeable Shares), at the election of each former Peraso Tech stockholder. Of the shares issued to the holders of Peraso Tech Shares, pursuant to the terms of the Agreement, the Company held in escrow an aggregate of 1,312,878 Exchangeable Shares and 502,567 shares of common stock (collectively, the Escrow Shares). The Escrow Shares are escrowed pursuant to the terms of an escrow agreement on a pro rata basis from the aggregate consideration received by the holders of Peraso Shares, subject to the offset by the Company for any losses in accordance with the Agreement. Such Escrow Shares shall be released, subject to any offset claim, upon the satisfaction of the earlier of: (a) any date following the first anniversary of December 17, 2021 and prior to December 17, 2024 where the volume weighted average price of the common stock for any 20 trading days within a period of 30 consecutive trading days is at least \$342.80 per share, subject to further adjustment for stock splits or other similar transactions; (b) the date of any sale of all or substantially all of the assets or shares of the Company; or (c) the date of any bankruptcy, insolvency, restructuring, receivership, administration, wind-up, liquidation, dissolution, or similar event involving the Company. All and any voting rights and other stockholder rights, other than with respect to dividends and distributions, with respect to the Escrow Shares are suspended until the Escrow Shares are released from escrow.

The Exchangeable Share structure is commonly used for cross-border transactions of this nature so as to provide non-tax-exempt Canadian shareholders with the same economic rights and benefits as holders of the Company's shares into which the Exchangeable Shares are exchangeable, while allowing those Canadian shareholders to benefit from the tax-rollover available on the issuance of the Exchangeable Shares. In general terms, by choosing to acquire Exchangeable Shares from Canco, such a former Peraso Tech shareholder was able to rely on a rollover rule in the Income Tax Act (Canada) in order to defer any capital gain that he/she/it would have otherwise realized.

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Calco was incorporated to exercise the call rights, while Canco was incorporated to acquire the shares of Peraso Tech from Canadian shareholders that wished to receive Exchangeable Shares as consideration, so it was a tax deferred transaction for such Canadian shareholders. The use of a separate entity, Calco, helps maximize cross border paid-up capital, which represents the amount that can generally be distributed free of Canadian withholding tax. The call rights also allow Calco to "purchase" the Exchangeable Shares rather than having them redeemed by Canco on a redemption or retraction or in connection with a liquidity event, thus avoiding the adverse deemed dividend tax consequences to shareholders that may arise from a redemption or retraction of Exchangeable Shares.

Holders of Exchangeable Shares have the right at any time (the Retraction Right) to retract or redeem any or all of the Exchangeable Shares owned by them for an amount per share equal to the market price of a share of the Company's common stock plus the full amount of all declared and unpaid dividends on such Exchangeable Share (the Exchangeable Share Purchase Price). The Exchangeable Share Purchase Price is payable only by the Company delivering or causing to be delivered to the relevant holder one share of the Company's common stock for each Exchangeable Share purchased plus a cash amount equal to the amount of any accrued and unpaid dividends on such Exchangeable Share. The Company and Calco each have an overriding right, in the event that a holder of Exchangeable Shares exercises its Retraction Right, to redeem from such holder all, but not less than all, of the Exchangeable Shares tendered for redemption.

The Exchangeable Shares are subject to redemption by the Company, Calco and Canco at the Exchangeable Share Purchase Price, on the "Redemption Date," which date shall be no earlier than the seventh anniversary of the date on which Exchangeable Shares are first issued, unless: (a) less than 10% of the aggregate number of Exchangeable Shares issued remain outstanding; (b) there is a change in control of the Company (defined generally as (i) any merger, amalgamation, arrangement, takeover bid or tender offer, material sale of shares or rights or interests that results in the holders of outstanding voting securities of the Company directly or indirectly owning, or exercising control or direction over, voting securities representing less than 50% of the total voting power of all of the voting securities of the surviving entity; or (ii) any sale or disposition of all or substantially of the Company's assets), and (c) upon the occurrence of certain other events. The Exchangeable Share Purchase Price is payable only by the Company delivering or causing to be delivered to the relevant holder one share of the Company's common stock for each Exchangeable Share purchased plus a

cash amount equal to the amount of any accrued and unpaid dividends on such Exchangeable Share.

In the event of the liquidation, dissolution or winding-up of Canco, holders of Exchangeable Shares have the right to receive in respect of each Exchangeable Share held by such holder, an amount per share equal to the Exchangeable Share Purchase Price, which shall be satisfied in full by Canco by delivering to such holder one Company Share, plus an amount equal to the Dividend Amount. The Company and Calco each have an overriding right to purchase from all holders all but not less than all of the Exchangeable Shares upon the occurrence of such events.

In addition, the Company and Calco have the right to purchase all outstanding Exchangeable Shares at the Exchangeable Share Purchase Price if there is a change of law that permits holders of Exchangeable Shares to exchange their Exchangeable Shares for shares of common stock on a basis that will not require holders to recognize any gain or loss or any actual or deemed dividend for Canadian tax purposes.

The holders of Exchangeable Shares have an "automatic exchange right" in the event of any insolvency, liquidation, dissolution or winding-up or in general, related proceedings, of the Company for an amount per share equal to the Exchangeable Share Purchase Price.

It is expected that Calco will exercise its call rights, as that is more beneficial to the holders of the Exchangeable Shares. Once Calco acquires the Exchangeable Shares from a holder, it (Calco and the Company) is obligated to deliver the Company shares to the holder. Calco discharges this obligation by arranging for the Company to issue and deliver those shares to the holders on behalf of Calco. As consideration for satisfying the delivery obligation, Calco would issue its own shares to the Company.

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There are no cash redemption features, as all redemption and exchange scenarios are payable in a share of the Company's common stock. Neither Canco, Calco, or the Company assume any tax liabilities of a former Peraso Tech shareholder who acquired Exchangeable Shares under the plan of arrangement. The purchase price computed upon the exercise of rights pertaining to retraction, redemption, or liquidation, or otherwise giving rise to a purchase or cancellation of an Exchangeable Share, will, in all cases, consist of a 1:1 exchange involving the Company's common stock, regardless of the market price of a share of the Company's common stock.

In connection with the Arrangement, on December 15, 2021, the Company filed the Certificate of Designation of Series A Special Voting Preferred Stock (the Certificate) with the Secretary of State of the State of Delaware to designate Series A Special Voting Preferred Stock (the Special Voting Share) in accordance with the terms of the Arrangement Agreement in order to enable the holders of Exchangeable Shares to exercise their voting rights. The Special Voting Share was issued to a third-party administrative agent (the Agent) solely to facilitate the exercise of rights by holders of Exchangeable Shares. The rights of the Agent, as holder of the Special Voting Share, are limited to effecting the rights of the holders of the Exchangeable Shares; the Special Voting Share does not confer any independent rights to the Agent. Under the Certificate, when all of the Exchangeable shares have been converted into shares of the Company's common stock, the Special Voting Share shall be automatically cancelled and shall not be reissued. Each Exchangeable Share is exchangeable for one share of common stock of the Company and while outstanding, the Special Voting Share enables holders of Exchangeable Shares to cast votes on matters for which holders of the common stock are entitled to vote, and by virtue of the share terms relating to the Exchangeable Shares, enable the Exchangeable Shares to receive dividends that are economically equivalent to any dividends declared with respect to the shares of common stock. As the Special Voting Share does not participate in dividends (only the Exchangeable Shares participate in dividends) and is not entitled to participate in the residual interest of the Company, it is not classified as an equity instrument in the Company's financial statements.

The Exchangeable Shares, which can be converted into common stock at the option of the holder and have the same voting and dividend rights as common stock, are similar in substance to shares of common stock. Further, Canco and Calco are non-substantive entities, which are looked through with the Exchangeable Shares being, in substance, common stock of the Company. Therefore, the Exchangeable Shares have been included in the determination of outstanding common stock. The Special Voting Share was issued to a third-party administrative agent (the Agent) solely to facilitate the exercise of rights by holders of Exchangeable Shares. The rights of the Agent, as holder of the Special Voting Share, are limited to effecting the rights of the holders of the Exchangeable Shares; the Special Voting Share does not confer any independent rights to the Agent. Under the Certificate, when all of the Exchangeable shares have been converted into shares of the Company's common stock, the Special Voting Share shall be automatically cancelled and shall not be reissued.

During the years ended December 31, 2023 and 2022, 133 and 5 exchangeable shares were exchanged into an equivalent number of shares of common stock.

June 2023 Registered Direct Offering

On May 31, 2023, the Company entered into a securities purchase agreement (the SPA) with an institutional investor (the Investor), pursuant to which the Company sold to the Investor, in a registered direct offering that closed on June 2, 2023, an aggregate of 56,250 shares of common stock at a purchase price of \$28.00 per share. Net proceeds to the Company from the registered direct offering, after offering costs, were approximately \$ 3.4 million. The Company also offered and sold to the Investor pre-funded warrants to purchase up to 86,608 shares of common stock (the 2023 PF Warrants). Each pre-funded warrant is exercisable for one share of common stock. The purchase price of each pre-funded warrant was \$27.60, and the exercise price of each pre-funded warrant is \$0.40 per share. The 2023 PF Warrants were immediately exercisable and may be exercised at any time until all of such pre-funded warrants are exercised in full. In June 2023, the Investor exercised 24,183 of the 2023 PF Warrants, and in September 2023, the remaining 62,425 of the 2023 PF Warrants were exercised by the Investor. In connection with the execution of the SPA, the Company and the Investor entered into an amendment (the Amendment) to the 2022 Purchase Warrant. Pursuant to the terms of the Amendment, the 2022 Purchase Warrant (as defined below) was amended to reduce the exercise price per share from \$54.40 to \$40.00, effective as of June 2, 2023.

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In a concurrent private placement that closed on June 2, 2023, the Company also sold to the Investor a warrant to purchase up to 142,858 shares of common stock (the 2023 Purchase Warrant). The 2023 Purchase Warrant was immediately exercisable at an exercise price of \$28.00 per share with a five-year term. As discussed below, the 2023 Purchase Warrant is accounted for as a liability. The fair value of the warrant at the date of issuance of approximately \$3,162,000 was accounted for as a cost of the offering.

November 2022 Registered Direct Offering

On November 28, 2022, the Company entered into a securities purchase agreement with the Investor, pursuant to which the Company sold to the Investor, in a registered direct offering that closed on November 30, 2022, an aggregate of 32,500 shares of common stock at a negotiated purchase price of \$40.00 per share. The Company also offered and sold to the investor pre-funded warrants to purchase up to 28,750 shares of common stock. Each pre-funded warrant was exercisable for one share of common stock. The purchase price of each pre-funded warrant was \$39.60, and the exercise price of each pre-funded warrant was \$0.40 per share. The pre-funded warrants were exercised in full by the Investor in April 2023. Net proceeds to the

Company from the registered direct offering, after offering costs, were approximately \$2.1 million.

In a concurrent private placement, the Company also sold to the Investor a warrant to purchase up to 91,875 shares of common stock (the 2022 Purchase Warrant). The 2022 Purchase Warrant became exercisable on May 29, 2023 at an initial exercise price of \$54.40 per share, which was subsequently reduced to \$40.00 per share per the Amendment, and expires on May 29, 2028. As discussed below, the 2022 Purchase Warrant is accounted for as a liability.

Warrants Classified as Liability

Purchase Warrants

The securities purchase agreements governing the 2023 Purchase Warrant and the 2022 Purchase Warrant (collectively, the "Purchase Warrants") provide for a value calculation for such warrants using the Black Scholes model in the event of certain fundamental transactions. The fair value calculation provides for a floor on the volatility amount utilized in the value calculation at 100% or greater. The Company has determined this provision introduces leverage to the holders of the Purchase Warrants that could result in a value that would be greater than the settlement amount of a fixed-for-fixed option on the Company's own equity shares. Therefore, pursuant to ASC 815, the Company has classified the Purchase Warrants as liabilities in its consolidated balance sheet. The classification of the Purchase Warrants, including whether the Purchase Warrants should be recorded as liabilities or as equity, is evaluated at the end of each reporting period with changes in the fair value reported in other income (expense) in the consolidated statements of operations and comprehensive loss. The 2022 Purchase Warrant was initially recorded at a fair value at \$3,673,368 at the grant date and is re-valued at each reporting date. As of December 31, 2022, the fair value of the warrant liability was reduced to \$2,079,138. Upon the closing of the registered direct offering, the fair value of the Purchase Warrant liability, up to the net amounts of the funds received of approximately \$2,099,000, was recorded as a financing cost, and the excess of \$ 1,576,000 was recorded as a financing cost in the statement of operations. As a result of the change in fair value the Company recognized a gain for the reduction in the warrant liability for the year ended December 31, 2023

On June 2, 2023, the 2023 Purchase Warrant was initially recorded at a fair value at \$ 3,162,401, and, as of December 31, 2023, the fair value of the warrant liability was reduced to \$1,095,287. As a result, the Company recorded a gain for the twelve months ended December 31, 2023 for the change in fair value of the 2023 Purchase Warrant. The Company also recorded a gain of \$1,426,050 for the twelve months ended December 31, 2023 for the change in the fair value of the warrant liability for the 2022 Purchase Warrant.

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As of December 31, 2023, the Company had the following liability-classified warrants outstanding (amounts in thousands):

	Number of warrants on common shares	Amount
Balance as of December 31, 2021	—	\$ —
Recognition of warrant liabilities	92	3,674
Change in fair value of warrants	—	(1,595)
Balance as of December 31, 2022	92	2,079
Recognition of warrant liabilities	143	3,162
Change in fair value of warrants	—	(3,493)
Balance as of December 31, 2023	235	\$ 1,748

The initial fair value of each of the Purchase Warrants was determined using the Black Scholes model with the assumptions in the following table. The table also includes the total fair value determined at valuation date based on these assumptions.

	2022 Purchase Warrant	2023 Purchase Warrant
Expected term based on contractual term	5.5 years	5.0 years
Interest rate (risk-free rate):	3.75%	4.16%
Expected volatility	123%	118%
Expected dividend	—	—
Fair value of warrants (in thousands)	\$ 3,674	\$ 3,162

The fair value of the Purchase Warrants at December 31, 2023 was determined using the Black Scholes model with the assumptions in the following table. The table also includes the total fair value determined at valuation date based on these assumptions.

	2022 Purchase Warrant	2023 Purchase Warrant
Expected term based on contractual term	4.4 years	4.2 years
Interest rate (risk-free rate):	3.84%	3.84%
Expected volatility	116%	116%
Expected dividend	—	—
Fair value of warrants (in thousands)	\$ 653	\$ 1,095

Warrants Classified as Equity

As of December 31, 2023, the Company had the following equity-classified warrants outstanding (share amounts in thousands):

Warrant Type	Number of Shares	Exercise Price	Expiration
Balance as of December 31, 2022	33		
Warrants expired	(1)	\$ 47.00	January 2023
Warrants expired	(3)	\$ 96.00	October 2023
Pre-funded warrants issued	86	\$ 0.40	—
Pre-funded warrants exercised	(115)	\$ 0.40	—
Balance as of December 31, 2023	—		

As of December 31, 2022, the Company had the following equity-classified warrants outstanding (share amounts in thousands):

Warrant Type	Number of Shares	Exercise Price	Expiration
Common stock	1	\$ 1,880.00	January 2023
Common stock	3	\$ 96.00	October 2023
Common stock	29	\$ 0.40	—
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Note 10. Related Party Transactions

A family member of one of the Company's executive officers is an employee of the Company. During the years ended December 31, 2023 and 2022, the Company paid approximately \$111,400 and \$101,000, respectively, to the employee. The employee's 2022 compensation included the aggregate grant date fair value, as determined pursuant to FASB ASC Topic 718, of an RSU awarded in April 2022. Additionally, a family member of one of the Company's executive officers previously served as a consultant to the Company. During the year ended December 31, 2022, the Company paid approximately \$162,000 to the consultant family member.

Note 11. License and Asset Sale Transaction

On August 5, 2022, the Company entered into a Technology License and Patent Assignment Agreement (the Intel Agreement) with Intel Corporation (Intel), pursuant to which Intel: (i) licensed from the Company, on an exclusive basis, certain software and technology assets related to the Company's Stellar packet classification intellectual property, including its graph memory engine technology, and any roadmap variant, in the form existing as of the date of the Agreement (the Licensed Technology); (ii) acquired from the Company certain patent applications and patents owned by the Company; and (iii) assumed a professional services agreement, dated March 24, 2020, between Fabulous Inventions AB (Fabulous) and the Company, pursuant to which, among other things, the Company licensed from Fabulous certain technology incorporated into the Licensed Technology.

As consideration for the Company to enter into the Agreement, Intel paid the Company \$ 3,062,500 in August 2022 and \$437,500 (the Holdback) in January 2023 upon the satisfaction by the Company of certain release criteria set forth in the Intel Agreement regarding the Licensed Technology.

The Company determined that the license and asset sale did not qualify as a sale of a business, but as a sale of a non-financial asset, with the resultant gain recorded as income from operations in accordance with ASC 610-20, *Other Income - Gains and Losses from the Derecognition of Nonfinancial Assets*. During the year ended December 31, 2022, the Company recognized a gain of approximately \$ 2,600,000 on this transaction, net of transaction costs, which was recorded as a reduction of operating expenses in the consolidated statements of operations and comprehensive loss. In January 2023, upon receipt of the Holdback, the Company recognized a gain, net of transaction costs, which was also recorded as a reduction of operating expenses in the consolidated statements of operations and comprehensive loss.

Note 12. Memory IC Product End-of-Life

Taiwan Semiconductor Manufacturing Corporation (TSMC) is the sole foundry that manufactures the wafers used to produce the Company's memory IC products. TSMC informed the Company that TSMC is discontinuing the foundry process used to produce wafers, in turn, necessary to manufacture the Company's memory ICs. As a result, in May 2023, the Company informed its customers that the Company would be initiating an end-of-life (EOL) of its memory IC products. Through December 31, 2023, the Company had received non-cancelable purchase orders from customers totaling approximately \$14,000,000. During the period from July 1, 2023 to December 31, 2023 the Company commenced initial shipments of EOL orders and fulfilled approximately \$3,700,000 of these initial purchase orders. Based on customer purchase orders in the Company's backlog, the Company expects to ship additional EOL orders of approximately \$10,300,000 over the 12 to 15 month period commencing January 1, 2024.

Note 13. Subsequent Events

Reverse Stock Split

As disclosed in Note 1, effective January 2, 2024, the Company effected a 1-for-40 reverse stock split of its outstanding common stock.

Public Offering

On February 6, 2024, the Company entered into an underwriting agreement (the "Underwriting Agreement") with Ladenburg Thalmann & Co. Inc., as the sole underwriter (the "Underwriter"), relating to the issuance and sale in a public offering (the "Offering") of: (i) 480,000 shares of the Company's common stock, (ii) pre-funded warrants to purchase up to 1,424,760 shares of common stock, (iii) Series A warrants to purchase up to 3,809,520 shares of common stock, (iv) Series B warrants to purchase up to 3,809,520 shares of common stock, and (v) up to 285,714 additional shares of common stock, Series A warrants to purchase up to 571,428 shares of common stock and Series B warrants to purchase up to 571,428 shares of common stock that may be purchased pursuant to a 45-day option to purchase additional securities granted to the Underwriter by the Company. The Underwriter partially exercised this option on February 7, 2024 for 82,500 shares of common stock, Series A warrants to purchase up to 165,000 shares of common stock and Series B warrants to purchase up to 165,000 shares of common stock. The combined public offering price of each share of common stock, together with the accompanying Series A warrants and Series B warrants, was \$2.10, less underwriting discounts and commissions. The combined public offering price of each pre-funded warrant, together with the accompanying Series A warrants and Series B warrants, was \$2.099, less underwriting discounts and commissions.

The Offering, including the additional shares of common stock, Series A warrants and Series B warrants sold pursuant to the partial exercise of the Underwriter's option, closed on February 8, 2024.

The net proceeds from the Offering, including the additional shares of common stock, Series A warrants and Series B warrants sold pursuant to the partial exercise of the Underwriter's option, after deducting underwriting discounts and commissions and other estimated Offering expenses payable by the Company and excluding any net proceeds from the exercise of the Series A warrants, Series B warrants and pre-funded warrants, were approximately \$3.3 million.

The Series A warrants and Series B warrants each have an exercise price of \$ 2.25 per share and are immediately exercisable upon issuance. The Series A warrants expire on the five-year anniversary of the date of issuance and the Series B warrants expire on the six-month anniversary of the date of issuance. The pre-funded warrants have an exercise price of \$0.001 per share, are exercisable immediately and may be exercised at any time until all of the pre-funded warrants are exercised in full. Subsequent to the closing of the Offering, as of March 18, 2024, the holders exercised pre-funded warrants for 1,001,110 shares of common stock. The exercise price and number of shares of common stock issuable upon exercise of the warrants is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting the common stock and the exercise price. Subject to limited exceptions, a holder may not exercise any portion of its warrants to the extent that the holder would beneficially own more than 9.99% or 4.99% (at the election of the holder) of the Company's outstanding common stock after exercise.

On February 8, 2024, pursuant to the Underwriting Agreement, the Company issued warrants to the Underwriter to purchase up to 139,108 shares of common stock at an exercise price of \$2.625, subject to adjustments, which are exercisable at any time and from time to time, in whole or in part, until February 8, 2029, and have substantially similar terms to the Series A warrants.

Consent of Independent Registered Public Accounting Firm

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-168358, 333-172828, 333-180119, 333-187187, 333-194563, 333-197989, 333-202735, 333-206209, 333-211273, 333-222739, 333-229728, 333-234675 and 333-262062), Form S-3 (No. 333-250936, 333-258386 and 333-262061), and Form S-1 (Nos. 333-222417, 333-225193, 333-268814 and 333-272729) of Peraso Inc. of our report dated March 29, 2024 relating to the consolidated financial statements, which appears in this Annual Report on Form 10-K.

/s/ Weinberg & Company

Los Angeles, California
March 29, 2024

**CERTIFICATION PURSUANT TO
RULE 13a-14 THE SECURITIES EXCHANGE ACT OF 1934**

I, Ronald Glibbery, certify that:

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

Date: March 29, 2024

/s/ Ronald Glibbery

Ronald Glibbery

Chief Executive Officer

(principal executive officer)

**CERTIFICATION PURSUANT TO
RULE 13a-14 THE SECURITIES EXCHANGE ACT OF 1934**

I, James Sullivan, certify that:

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

Date: March 29, 2024

/s/ James Sullivan

James Sullivan

Chief Financial Officer

(principal financial officer)

**CERTIFICATION OF CEO AND CFO FURNISHED PURSUANT TO
18 U.S.C. § 1350,
AS ADOPTED PURSUANT TO
§ 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 10-K of Peraso Inc. (the "Company") for the year ended December 31, 2023, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of Ronald Glibbery, Chief Executive Officer of the Company, and James Sullivan, Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, to the best of his knowledge, 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 Company.

/s/ Ronald Glibbery

Ronald Glibbery
Chief Executive Officer
(principal executive officer)

March 29, 2024

/s/ James Sullivan

James Sullivan
Chief Financial Officer
(principal financial officer)

March 29, 2024

This certification accompanies this Report pursuant to § 906 of the Sarbanes-Oxley Act of 2002 and shall not, except to the extent required by the Sarbanes-Oxley Act of 2002, or otherwise required, be deemed filed by the Company for purposes of § 18 of the Securities Exchange Act of 1934, as amended.

PERASO INC.

CLAWBACK POLICY

1. Introduction

The Board of Directors (the "**Board**") of Peraso Inc. (the "**Company**") believes that it is in the best interests of the Company and its stockholders to adopt this Clawback Policy (this "**Policy**"), which provides for the recoupment of certain executive compensation in the event of an accounting restatement resulting from material noncompliance with financial reporting requirements under the federal securities laws. This Policy is designed to comply with, and shall be interpreted to be consistent with, Section 10D of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), Rule 10D-1 promulgated under the Exchange Act, and The Nasdaq Stock Market LLC ("**Nasdaq**") Listing Rule 5608 (the "**Listing Standards**").

2. Administration

This Policy shall be administered by the Board or, if so designated by the Board, the Compensation Committee (the Board or such committee charged with administration of this Policy, the "**Administrator**"). The Administrator is authorized to interpret and construe this Policy and to make all determinations necessary, appropriate or advisable for the administration of this Policy. Any determinations made by the Administrator shall be final and binding on all affected individuals and need not be uniform with respect to each individual covered by the Policy. In the administration of this Policy, the Administrator is authorized and directed to consult with the full Board, or such other committees of the Board, such as the Compensation Committee, if not the Administrator, the Audit Committee or the Nominating & Corporate Governance Committee, as may be necessary or appropriate as to matters within the scope of such other committee's responsibility and authority. Subject to any limitation at applicable law, the Administrator may authorize and empower any officer or employee of the Company to take any and all actions necessary or appropriate to carry out the purpose and intent of this Policy (other than with respect to any recovery under this Policy involving such officer or employee).

3. Application of this Policy: Covered Executives

This Policy applies to Incentive Compensation (as defined below) received by the Company's current and former executive officers (as determined by the Board in accordance with the definition of "executive officer" set forth in Section 10D of the Exchange Act and the Listing Standards) ("**Covered Executives**") (a) after beginning services as a Covered Executive, (b) who served as a Covered Executive at any time during the performance period for such Incentive Compensation, (c) while the Company had a listed class of securities on a national securities exchange and (d) during the Applicable Period (as defined below).

4. Recoupment: Accounting Restatement

In the event the Company is required to prepare an accounting restatement of its financial statements due to the Company's material noncompliance with any financial reporting requirement under the securities laws, including any required accounting restatement to correct an error in previously issued financial statements that is material to the previously issued financial statements or that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period ("**Accounting Restatement**"), the Company shall promptly recoup the amount of any Erroneously Awarded Compensation (as defined below) received by any Covered Executive, as calculated pursuant to Section 6 hereof, during the three completed fiscal years immediately preceding the date on which the Company is required to prepare an Accounting Restatement, as well as any transition period (that results from a change in the Company's fiscal year) within or immediately following those three completed fiscal years (except that a transition period that comprises a period of at least nine months shall count as a completed fiscal year) (the "**Applicable Period**").

5. Incentive Compensation

For purposes of this Policy, "**Incentive Compensation**" means any compensation that is granted, earned or vested based wholly or in part upon the attainment of a financial reporting measure or stock price or total stockholder return. Incentive Compensation is "received" for purposes of this Policy in the Company's fiscal period during which the financial reporting measure specified in the Incentive Compensation award or stock price or total stockholder return is attained, even if the payment or grant of such Incentive Compensation occurs after the end of that period.

Financial reporting measures include but are not limited to the following (and any measures derived from the following):

- Revenues.
- Net income.
- Earnings before interest, taxes, depreciation, and amortization (EBITDA).
- Liquidity measures, such as working capital or operating cash flow.
- Return measures, such as return on invested capital or return on assets.
- Earnings measures, such as earnings per share.

6. Erroneously Awarded Compensation: Amount Subject to Recovery

The amount of "**Erroneously Awarded Compensation**" subject to recovery under this Policy, as determined by the Administrator, is the amount of Incentive Compensation received by a Covered Executive that exceeds the amount of Incentive Compensation that otherwise would have been received by such Covered Executive had it been determined based on the restated amounts in the Accounting Restatement, without regard to any taxes paid by such Covered Executive in respect of the Erroneously Awarded Compensation.

For Incentive Compensation based on stock price or total stockholder return: (a) the Administrator shall determine the amount of Erroneously Awarded Compensation based on a reasonable estimate of the effect of the Accounting Restatement on the stock price or total stockholder return upon which the Incentive Compensation was received, and (b) the Company shall maintain documentation of the determination of that reasonable estimate and provide such documentation to Nasdaq.

7. Method of Recoupment

The Administrator shall determine, in its sole discretion, the timing and method for promptly recouping Erroneously Awarded Compensation hereunder, which may include, without limitation: (a) seeking reimbursement of all or part of any cash or equity-based award, (b) cancelling prior cash or equity-based awards, whether vested or unvested or paid or unpaid, (c) cancelling or offsetting against any planned future cash or equity-based awards, (d) forfeiture of deferred compensation, subject to compliance with Section 409A of the Internal Revenue Code and the regulations promulgated thereunder and (e) any other method authorized by applicable law or contract. Subject to compliance with any applicable law, the Administrator may affect recovery under this Policy from any amount otherwise payable to the Covered Executive, including amounts payable to such individual under any otherwise applicable Company plan or program, including base salary, bonuses or commissions and compensation previously deferred by the Covered Executive.

8. No Indemnification of Covered Executives

Notwithstanding the terms of any indemnification or insurance policy or any contractual arrangement with any Covered Executive that may be interpreted to the contrary, the Company shall not indemnify any Covered Executives against the loss of any Erroneously Awarded Compensation, including any payment or reimbursement for the cost of third-party insurance purchased by any Covered Executives to fund potential clawback obligations under this Policy.

9. Administrator Indemnification

Any members of the Administrator, and any other members of the Board who assist in the administration of this Policy, shall not be personally liable for any action, determination or interpretation made with respect to this Policy and shall be fully indemnified by the Company to the fullest extent under applicable law and Company policy with respect to any such action, determination or interpretation. The foregoing sentence shall not limit any other rights to indemnification of the members of the Board under applicable law or Company policy.

10. Effective Date

This Policy shall be effective as of November 30, 2023 (the “**Effective Date**”) and shall apply to any Incentive Compensation that is received by Covered Executives on or after October 2, 2023, even if such Incentive Compensation was approved, awarded, granted or paid to Covered Executives prior to the Effective Date.

11. Amendment; Termination

The Administrator may amend, modify, supplement, rescind or replace all or any portion of this Policy at any time and from time to time in its discretion, and shall amend this Policy as it deems necessary to comply with applicable law, the Listing Standards and any other rules or standards adopted by a national securities exchange on which the Company's securities are listed. The Board may terminate this Policy at any time, provided that such termination would not cause the Company to violate any federal securities laws, or rules promulgated by the U.S. Securities and Exchange Commission or the Listing Standards.

12. Other Recoupment Rights

Any right of recoupment under this Policy is in addition to, and not in lieu of, any other remedies or rights of recoupment that may be available to the Company pursuant to the terms of any similar policy in any employment agreement, equity award agreement, or similar agreement and any other legal remedies available to the Company.

13. Relationship to Other Plans and Agreements

The Board intends that this Policy will be applied to the fullest extent of the law. The Board may require that any employment agreement, equity award agreement, or similar agreement entered into on or after the Effective Date shall, as a condition to the grant of any benefit thereunder, require a Covered Executive to agree to abide by the terms of this Policy. In the event of any inconsistency between the terms of this Policy and the terms of any employment agreement, equity award agreement, or similar agreement under which Incentive Compensation has been granted, awarded, earned or paid to a Covered Executive, whether or not deferred, the terms of this Policy shall govern.

14. Acknowledgment

Each Covered Executive shall sign and return to the Company the Acknowledgment Form attached hereto as Exhibit A, pursuant to which the Covered Executive acknowledges having read and understood this Policy, and agrees to be bound by, and to comply with, the terms and conditions of this Policy.

15. Impracticability

The Company is authorized and directed pursuant to this Policy to recoup Erroneously Awarded Compensation in compliance with this Policy unless the Administrator has determined that recovery would be impracticable solely for the following limited reasons, and subject to the following procedural and disclosure requirements:

- The direct expense paid to a third party to assist in enforcing this Policy would exceed the amount to be recovered. Before concluding that it would be impracticable to recover any amount of Erroneously Awarded Compensation based on expense of enforcement, the Administrator must make a reasonable attempt to recover such erroneously awarded compensation, document such reasonable attempt(s) to recover and provide that documentation to Nasdaq; or
- Recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company, to fail to meet the requirements of 26 U.S.C. 401(a)(13) or 26 U.S.C. 411(a) and regulations thereunder.

16. Successors

This Policy shall be binding and enforceable against all Covered Executives and their beneficiaries, heirs, executors, administrators or other legal representatives.

17. Exhibit Filing Requirement

A copy of this Policy and any amendments thereto shall be posted on the Company's website and filed as an exhibit to the Company's annual report on Form 10-K.

18. Notices

Notices and all other communications contemplated by this Policy will be in writing and will be deemed to have been duly given when personally delivered or when mailed by U.S. registered or certified mail, return receipt requested and postage prepaid. In the case of a Covered Executive, mailed notices will be addressed to him/her at the home address which he/she most recently communicated to the Company in writing. In the case of the Company, mailed notices will be addressed to its corporate headquarters, and all notices will be directed to the attention of the Company's Chief Executive Officer (or to the attention of the Company's Chief Financial Officer in the case of a notice from the Company's Chief Executive Officer).

19. Choice of Law

The validity, interpretation, construction and performance of this Policy will be governed by the laws of the State of California (with the exception of its conflict of laws provisions).

Exhibit A**PERASO INC. CLAWBACK POLICY****ACKNOWLEDGEMENT FORM**

By signing below, I acknowledge, agree and confirm that:

- I have received and reviewed Peraso Inc.'s Clawback Policy (as may be amended, restated, supplemented or otherwise modified from time to time, the "**Policy**").
- I am fully bound by, and subject to, all of the terms and conditions of the Policy.
- In the event of any inconsistency between the Policy and the terms of any employment agreement to which I am a party, or the terms of any compensation plan, program or agreement under which any compensation has been granted, awarded, earned or paid, the terms of the Policy shall govern.
- In the event it is determined by the Administrator that any amounts granted, awarded, earned or paid to me must be forfeited or reimbursed to the Company, I will promptly take any action necessary to effectuate such forfeiture and/or reimbursement.

Capitalized terms used herein and not defined shall have the meanings ascribed to such terms in the Policy.

By: _____
Name: _____
Title: _____

Dated: _____