



LUMINAR

2022 Annual Report

Luminar Technologies, Inc.

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2022

or

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

For the transition period from

to

Commission file number 001-38791

LUMINAR TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware

83-1804317

(State or other jurisdiction of incorporation or organization)

(I.R.S. Employer Identification No.)

2603 Discovery Drive

Suite 100

Orlando

Florida

32826

(Address of Principal Executive Offices)

(Zip Code)

(407) 900-5259

Registrant's telephone number, including area code

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

Title of each class	Trading	Name of each exchange on which
Class A common stock, par value of \$0.0001 per share	LAZR	The Nasdaq Stock Market LLC

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

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

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

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

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

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

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

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

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

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). ☐

The aggregate market value of the voting stock held by non-affiliates of the registrant was approximately \$1.5 billion as of June 30, 2022 (the last business day of the registrant's most recently completed second fiscal quarter) based upon the closing sale price on The Nasdaq Stock Market reported for such date. Shares of Common Stock held by each officer and director and by each person who may be deemed to be an affiliate have been excluded. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 17, 2023, the registrant had 272,176,538 shares of Class A common stock, par value \$0.0001 per share and 97,088,670 shares of Class B common stock, par value \$0.0001 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Part III incorporates by reference certain information from the registrant's definitive proxy statement (the "Proxy Statement") relating to its 2023 Annual Meeting of Stockholders. The Proxy Statement will be filed with the U.S. Securities and Exchange Commission within 120 days after the end of the fiscal year to which this report relates.

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CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

This Annual Report on Form 10-K (this “Form 10-K”) includes forward-looking statements in addition to historical information. These forward-looking statements are included throughout this Form 10-K, including in the sections entitled “Business,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and in other sections of this Form 10-K and include statements regarding product plans, future growth, sales estimates/Order Book numbers, market opportunities, strategic initiatives, industry positioning, customer acquisition and retention, revenue growth and anticipated impacts on our business of the ongoing COVID-19 pandemic and related public health measures. In some cases, you can identify these statements by forward-looking words such as “outlook,” “believes,” “expects,” “future,” “potential,” “continues,” “may,” “will,” “should,” “could,” “seeks,” “approximately,” “predicts,” “intends,” “plans,” “estimates,” “anticipates” or the negative version of these words or other comparable words or phrases, but the absence of these words does not mean that a statement is not forward-looking. These forward-looking statements, which are subject to risks, uncertainties and assumptions about us, may include projections of our future financial performance, our anticipated growth strategies and anticipated trends in our business.

These statements are only predictions based on our current expectations and projections about future events. There are important factors that could cause our actual results, level of activity, performance or achievements to differ materially from the results, level of activity, performance or achievements expressed or implied by the forward-looking statements, including, our history of losses and our expectation that we will continue to incur significant expenses, including substantial R&D costs, and continuing losses for the foreseeable future as well as our limited operating history which makes it difficult to evaluate our future prospects and the risks and challenges we may encounter; our strategic initiatives which may prove more costly than we currently anticipate and potential failure to increase our revenue to offset these initiatives; whether our lidar products are selected for inclusion in autonomous driving or ADAS systems by automotive OEMs or their suppliers, and whether we will be de-selected by any customers; the lengthy period of time from a major commercial win to implementation and the risks of cancellation or postponement of the contract or unsuccessful implementation; potential inaccuracies in our forward looking estimates of certain metrics, including Order Book, our future cost of goods sold (COGS) and bill of materials (BOM) and total addressable market; the discontinuation, lack of success of our customers in developing and commercializing products using our solutions or loss of business with respect to a particular vehicle model or technology package and whether end automotive consumers will demand and be willing to pay for such features; our inability to reduce and control the cost of the inputs on which we rely, which could negatively impact the adoption of our products and our profitability; the effect of continued pricing pressures, competition from other lidar manufacturers, automotive original equipment manufacturers (“OEMs”) cost reduction initiatives and the ability of automotive OEMs to re-source or cancel vehicle or technology programs which may result in lower than anticipated margins, or losses, which may adversely affect our business; general economic uncertainty and the effect of general economic conditions on our industry in particular, including the level of demand and financial performance of the autonomous vehicle industry and market adoption of lidar as well as developments in alternative technology and the increasingly competitive environment in which we operate, which includes established competitors and market participants that have substantially greater resources; our ability to achieve technological feasibility and commercialize our software products and the requirement to continue to develop new products and product innovations due to rapidly changing markets and government regulations of such technologies; our ability to manage our growth and expand our business operations effectively, including into international markets, such as China, which exposes us to operational, financial and regulatory risks; adverse impacts due to limited availability and quality of materials, supplies, and capital equipment, or dependency on third-party service providers and single-source suppliers; the project-based nature of our orders, which can cause our results of operations to fluctuate on a quarterly and annual basis; whether we will be able to successfully transition our engineering designs into high volume manufacturing, including our ability to transition to an outsourced manufacturing business model and whether we and our outsourcing partners and suppliers can successfully operate complex machinery; whether we can successfully select, execute or integrate our acquisitions; whether the complexity of our products results in undetected defects and reliability issues which could reduce market adoption of our new products, limit our ability to manufacture, damage our reputation and expose us to product liability, warranty and other claims; our ability to maintain and adequately manage our inventory; our ability to remediate the material weakness in our internal controls over financial reporting; our ability to protect and enforce our intellectual property rights; availability of qualified personnel, loss of highly skilled personnel and dependence on Austin Russell, our Founder, President and Chief Executive Officer; the impact of inflation and our stock price on our ability to hire and retain highly skilled personnel; the amount and timing of future sales and whether the average selling prices of our products could decrease rapidly over the life of the product as well as our dependence on a few key customers, who are often large corporations with substantial negotiating power; our ability to establish and maintain confidence in our long-term business prospects among customers and analysts and within our industry; whether we are subject to negative publicity; the effects of the ongoing coronavirus (COVID-19) pandemic or other infectious diseases, health epidemics, pandemics and natural disasters on Luminar’s business; interruption or failure of our information technology and communications systems; cybersecurity risks to our operational systems, security systems, infrastructure, integrated software in our lidar solutions; market instability

exacerbated by geopolitical conflicts, including Russia and China and including the effect of sanctions and trade restrictions that may affect supply chain or sales opportunities; and those other factors discussed in the section entitled “Risk Factors” in this Form 10-K. You should specifically consider the numerous risks outlined in the section of this Form 10-K entitled “Risk Factors.” Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements. Although we believe the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, level of activity, performance or achievements. We undertake no obligation to update any forward-looking statements made in this Form 10-K to reflect events or circumstances after the date of this Form 10-K or to reflect new information or the occurrence of unanticipated events, except as required by law.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this Annual Report on Form 10-K, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain, and investors are cautioned not to unduly rely upon these statements.

PART I

ITEM 1. BUSINESS.

Overview

Luminar is a global automotive technology company ushering in a new era of vehicle safety and autonomy. Over the past decade, Luminar has been building from the chip-level up, our light detection and ranging sensor, or lidar, which is expected to meet the demanding performance, safety, reliability and cost requirements to enable next generation safety and autonomous capabilities for passenger and commercial vehicles as well as other adjacent markets.

The global mobility and e-mobility sector is increasingly focused on safety and autonomy, specifically next generation advanced driver assistance systems, or ADAS, and highway autonomy for passenger and commercial vehicles. Our products provide increased situational awareness in a broad range of driving environments through improved and higher confidence detection and planning at all vehicle speeds. Our portfolio encompasses sensor hardware and in-development perception and decision-making software as well as a high definition “3D” mapping engine that improve existing vehicle safety features and enable new levels of vehicle automation for passenger, commercial and other applications.

Our Markets

The Society of Automotive Engineers (“SAE”) defines levels of automation as follows, which SAE updates from time to time:

- **Level 0—No Driving Automation:** In this level, the human is fully responsible for all dynamic driving tasks (“DDT”) at all times, even if an active safety system assists in the task. “L0” is defined as driver support features that are limited to warnings or momentary emergency intervention. Examples of warnings include blind spot warning or lane departure warnings. Examples of features with momentary assistance include automated emergency braking (“AEB”) and lane keep assist (“LKA”).
- **Level 1—Driver Assistance:** In this level, while the human is fully responsible for all DDT at all times, an active safety system may assist by executing either the longitudinal or the lateral vehicle motion control subtask, and disengages immediately upon driver request. Examples include lane centering support (“LCS”) or the more widely adopted adaptive cruise control (“ACC”). These features are viewed as comfort features, easing the driving load from the driver during extended highway drives.
- **Level 2—Partial Driving Automation:** In this level, the human is fully responsible for all DDT at all times, even if an active safety system assists in the task.

The term L2+ is often used for today’s higher capability systems, many of which add a driver monitoring system, such as camera or steering wheel sensing to ensure the human driver remains engaged, but require the driver remain attentive at all times.

- **Level 3—Conditional Driving Automation:** In this level, the automated driving system (“ADS”) performs the entire DDT while engaged. The driver is responsible to verify the operational readiness of the ADS, determine whether to engage the system, and becomes the fallback-ready user when the ADS is engaged. The ADS permits engagement and operation only within its operational design domains (“ODD”).
- **Level 4—High Driving Automation:** In this level, the ADS performs the entire DDT while engaged. The driver is responsible to verify the operational readiness of the ADS, determine whether to engage the system, and becomes a passenger when the ADS is engaged (when physically present in the vehicle). The ADS permits engagement and operation only within its ODD.
- **Level 5—Full Driving Automation:** In this level, the ADS performs the entire DDT while engaged. It is the designation for vehicles that when placed in automated driving mode, can drive everywhere and in all conditions without human intervention or even occupants.

We believe the market is currently segmented in two distinct categories: (1) ADAS (L0 / L1 / L2) and (2) autonomous driving (L3 / L4 / L5). Within these two segments, we believe the largest near-term business opportunities exist for technologies that enhance, not replace, the driver in ADAS and highway autonomy applications (L3). We believe our products meaningfully improve ADAS functionality and are also key enablers for highway autonomy.

ADAS and Proactive Safety™

ADAS standards are primarily driven by both the European and North American markets. The European New Car Assessment Program (“NCAP”), a voluntary vehicle safety performance assessment program which uses a 5-star safety rating system, requires a minimum level of crash mitigation functionality such as automated emergency braking (“AEB”) (for vehicles, pedestrians, and cyclists), lane keep assist (“LKA”), speed alert systems and other ADAS features for a vehicle to have a 5-star rating. Furthermore, we believe the European Union may be moving toward mandates of these advanced functions.

The U.S. is less focused on mandates at this time and instead allows the U.S. New Car Assessment Program (known as the “Stars on Cars” program) and designations such as the Insurance Institute for Highway Safety “Top Safety Pick” and “Top Safety Pick+” to drive adoption and provide consumers with an understanding of the vehicle’s advanced crash avoidance capability. Through 2022, working with the National Highway Traffic Safety Administration (“NHTSA”), 20 automakers have made progress towards equipping most new passenger vehicles with a low-speed AEB system that includes forward-collision warning.

With global safety rating programs and the OEMs competing to deliver more safety and comfort features to their customers, it is reasonable to expect near complete adoption of ADAS functionalities in new vehicles produced by Europe, U.S., Japan, and South Korea by 2026. We expect adoption rates to increase significantly in China as well.

According to NHTSA, the number of automotive fatalities globally still exceeds one million annually and the social costs of accidents continue to exceed \$500 billion in the United States alone. While the increased application of existing ADAS technology should help reduce the number of accidents and fatalities, we believe there is significant room for improvement in these technologies. In particular, we believe there is a significant opportunity to reduce collisions with a capable lidar sensing system that increases the quality and reliability of the perception data collected by vehicles and enables improved ADAS functionality in a wider range of environmental conditions and higher speeds. We have been developing a turn-key ADAS system known as Proactive Safety™ that leverages our core sensor and software technologies. Intended functionality for Proactive Safety™ currently under development includes Automatic Emergency Braking, Automatic Emergency Steering, and Adaptive Cruise Control, which are expected to represent a new generation of vehicle safety, meant to enable accident avoidance instead of merely mitigating crash severity.

Highway Autonomy

Our focus since inception has been to enable ubiquitous safety and autonomy and we view highway autonomy, in combination with Proactive Safety™, as providing the most value to the end consumer for the foreseeable future. The market appears to be trending in this direction, targeting hands-off and eyes-off operations in a more controlled setting than the urban environment. While there has historically been a significant focus on investment and development of robo-taxi solutions, we believe the passenger vehicles and commercial vehicle sectors will be the greatest source of demand for our products over the next several years.

Passenger Vehicle Market

The passenger vehicle market is very large. We expect that approximately 100 million new passenger and commercial vehicles will be manufactured annually, on average, this decade. In order to realize a vehicle feature’s maximum societal benefits, the ultimate goal in the automotive industry is to achieve widespread adoption of next-gen safety and highway autonomous features in all vehicles. We expect a technology adoption ramp-up over time as automated functionality matures, costs and pricing are reduced, and consumers become more familiar with the full benefits and capabilities of a safe autonomy system. We believe there is a substantial market opportunity for our products once development of Proactive Safety™ is complete and coupled with autonomy due to the public benefit of the overall anticipated safety increase.

Commercial Trucking Market

The amount of goods transported by trucking globally continues to rise year-over-year. The application of ADAS technology continues to grow and the interest in autonomy for commercial transport is at an all-time high. The business case for trucking highway autonomy includes: lower operating costs, increased utilization of the vehicles and more time spent on the road.

Robo-Taxi Market

The robo-taxi industry continues to develop through investment and partnerships by leading technology companies and mainstays from the automotive industry. Although the timeline for widespread deployment of robo taxis continues to be pushed out due to the complexity of the technical requirements, as well as the need for regional and federal governmental support, funding for infrastructure, and a sensing and compute solution that must anticipate every possible mixed-traffic scenario, the robo-taxi market remains an important market for lidar both for near-term validation and for long-term demand.

Adjacent Markets

Adjacent markets such as last mile delivery, aerospace and defense, robotics and security offer use cases for which our technology is well suited. Our goal is to scale our core markets and utilize our robust solutions to best serve these adjacent markets where it makes sense for us and our partners.

Our Products

Our Iris and other products are described in further detail below:

Hardware

Iris: Iris lidar combines laser transmitter and receiver and provides long-range, 1550 nm sensory meeting OEM specs for advanced safety and autonomy. This technology provides efficient automotive-grade, and affordable solutions that are scalable, reliable, and optional for series production. Iris lidar sensors are dynamically configurable dual-axis scan sensors that detect objects up to 600 meters away over a horizontal field of view of 120° and a software configurable vertical field of view of up to 30°, providing high point densities in excess of 200 points per square degree enable long-range detection, tracking, and classification over the whole field of view. Iris is refined to meet the size, weight, cost, power, and reliability requirements of automotive qualified series production sensors. Iris features our vertically integrated receiver, detector, and laser solutions developed by our Advanced Technologies & Services segment companies - Freedom Photonics, Black Forest Engineering, and Optogration. The internal development of these key technologies gives us a significant advantage in the development of our product roadmap.

Software

Software presently under development includes the following:

Core Sensor Software: Our lidar sensors are configurable and capture valuable information extracted from the raw point-cloud to promote the development and performance of perception software. Our core sensor software features are being designed to help our commercial partners to operate and integrate our lidar sensors and control, and enrich the sensor data stream before perception processing.

Perception Software: Our perception software is in design to transform lidar point-cloud data into actionable information about the environment surrounding the vehicle. This information includes classifying static objects such as lane markings, road surface, curbs, signs and buildings as well as other vehicles, pedestrians, cyclists and animals. Through internal development as well as the recent acquisition of certain assets of Solfix (aka Civil Maps), we expect to be able to utilize our point-cloud data to achieve precise vehicle localization and to create and provide continuous updates to a high definition map of a vehicle's environment.

Sentinel: Sentinel is our full-stack software platform for safety and autonomy that will enable Proactive Safety™ and highway autonomy for cars and commercial trucks.

Our software products are in designing and coding phase of the development and had not yet achieved technological feasibility as at end of 2022.

Competition

The market for lidar-enabled vehicle features, on and off road, is an emerging one with many potential applications in the development stage. As a result, we face competition for lidar hardware business from a range of companies seeking to have their products incorporated into these applications. We believe we hold a strong position based on both hardware product performance and maturity, and our growing ability to develop deeply integrated software capabilities needed to provide autonomous and safety solutions to our customers.

Within the automotive autonomy software space, the competitive landscape is still nascent and primarily focused on developing robo-taxi technologies as opposed to autonomous software solutions for passenger vehicles. Other autonomous software providers include: in-house OEM software teams; automotive silicon providers; large technology companies and newer technology companies focused on autonomous software. We partner with several of these autonomous software providers to provide our lidar and other products.

Beyond automotive, the adjacent markets, including delivery bots and mapping, among others, are highly competitive. There are entrenched incumbents and competitors, including from China, particularly around ultra-low cost products that are widely available.

Intellectual Property

Our success and competitive advantage depend in part upon our ability to develop and protect our core technology and intellectual property. We own a portfolio of intellectual property, including patents and registered trademarks, confidential technical information, and expertise in the development of lidar technology and software for autonomous vehicles.

We have filed patent and trademark applications in order to further secure these rights and strengthen our ability to defend against third parties who may infringe on our rights. Additionally, we protect our proprietary rights through agreements with our commercial partners, supply-chain vendors, employees, and consultants, as well as close monitoring of the developments and products in the industry.

As of January 2023, we had 135 issued patents (130 U.S. and 5 international), 125 pending applications (61 U.S. and 64 international), of which one U.S. application has been allowed. In addition, we have three registered U.S. trademarks, 22 registered foreign trademarks and 70 pending trademark applications.

Manufacturing Process

We build and design certain critical components in-house, including our receiver ASIC and InGaAs photodiode. We have an internal advanced manufacturing line located in Orlando, Florida, where we develop the manufacturing and testing processes, including capturing any related intellectual property necessary to develop our products. Our manufacturing processes and knowledge are a key differentiator for us in the market.

Extended component lead times and bottlenecks in the supply chain have created supply challenges for the entire market in the past and may continue through 2023 or beyond.

In May 2021, we announced our series manufacturing partnerships with Celestica and Fabrinet. We are in process of installing our high-volume series production facility in Mexico, which will be operated by Celestica. We expect to start production at the high-volume facility in the second half of 2023. In the meantime, we are currently producing our Iris sensors at an existing facility owned and operated by Celestica.

Research and Development

Our research and development activities occur in various locations in the United States, Germany and India.

Our research and development team is responsible for creating new technologies and expanding lidar and perception and mapping software functionality. The team is responsible for ensuring our lidar is designed for manufacturability and testability. The team partners with our operations and supply chain functions to develop scalable commercial and reliable manufacturing processes and direct production material procurement.

Sales and Marketing

We use customer feedback to specifically tailor our product and approach to build and expand our relationships with potential commercial partners. In parallel, marketing and communications drive our brand equity and narrative through ongoing announcements, campaigns, events, speaking opportunities, and public relations efforts.

The automotive value chain characteristically involves research and feasibility studies, followed by long-term product development cycles, including testing and qualification with the automakers which can last for several years. In general, automaker agreements do not guarantee potential volumes, which vehicle models will incorporate supplier components, or timing of purchases to their suppliers during this product development cycle. Instead, typically, after initial research and feasibility agreements and extensive competitive negotiations, automakers enter into development agreements that establish collaborations or partnerships to develop and integrate technology into the automaker's vehicles or platforms intended for series production, frequently accompanied by non-recurring engineering ("NRE") projects. While these collaboration or partnership agreements provide automakers the right to terminate the relationship without purchasing any production volume, factors such as difficulty of integrating complex technologies, sunken costs relating to NRE projects, impact on product roadmap, time to market, and risk of being unable to secure future supply may deter automakers to cancel collaboration or development agreements. Automakers typically only enter into blanket purchase orders or other definitive supply agreements with binding commitments several months before production is expected to begin. We identify major commercial wins only when we have entered into a collaboration, development, partnership or other similar agreement and have reason to believe that such engagement is expected to result in future series production. Given the customary business practices in the automotive industry, there remains potential risk that our major commercial wins may not ultimately generate any significant revenue (See Item 1A, Risk Factors for definition of major commercial win and further discussion of risk).

Government Regulation

Automotive safety regulation in the area of autonomy is split between two categories: (1) SAE Level 0-2 (including active safety, driver assist, and conditional autonomy); and (2) SAE Level 3-5 (partial through full autonomy) (commonly referred to as “higher autonomy”). In general, throughout the world, there is a positive legal environment that encourages consumer sale and use of SAE Level 0-2 functionality. The legal environment for SAE Level 3-5 functionality varies, generally encouraging the safe testing and development of higher autonomy functions, but restricting consumer use in personal vehicles and commercial use, as in automated trucking and taxis in many regions.

In the U.S., at both the federal and state level, nearly all SAE Level 0-2 functionality is permitted, while SAE Level 3-5 enjoys a positive environment for on-road testing and development, but mixed opportunities to deploy in consumer and commercial use. Federal regulation does not prohibit higher levels of autonomy today, but if National Highway Traffic Safety Administration deems an autonomy system unsafe, it would order a recall to remove vehicles from the road. Thus far, several U.S. states have expressly permitted SAE Level 4-5 levels of autonomy, while many remain silent, and others have laws that limit driverless operation. We believe regulations related to automotive autonomy technologies will continue to evolve to remove hurdles as state and federal regulators gain more experience with the technology.

In Europe, China, and the rest of the world, most automotive safety is regulated by a common system under the United Nations Economic Commission for Europe (UN/ECE). Under current UN/ECE standards, SAE Level 0-2 functionality may be deployed with certain restrictions such as road type and with driver monitoring, but higher SAE Level 3-5 functionality is limited to testing only. Safety regulators continue to work on standards for autonomy, but we expect this development process to be slower than in the U.S. However, China has increasingly departed from the common UN/ECE standards and is more likely to create its own regulation allowing higher levels of autonomy in the nearer term with a timeline more aligned with the U.S.

Given the intense work in these regulatory areas, there is a positive environment for deploying our lidar technology and Proactive Safety™ today in SAE Level 0-2 systems. While there is risk that SAE Level 3-5 systems may be delayed by regulation in some countries, we expect a workable path forward over the next several years as a more permissive regulatory and political environment develops.

Employees

As of December 31, 2022, excluding contractors, we had almost 600 full-time employees primarily in the United States and Germany. None of our employees are represented by a labor union.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, incentivizing and integrating our existing and new employees, advisors and consultants. The principal purposes of our equity and cash incentive plans are to attract, retain and reward personnel through the granting of stock-based and cash-based compensation awards, in order to increase stockholder value and the success of our company by motivating such individuals to perform to the best of their abilities and achieve our objectives.

Corporate Social Responsibilities and Sustainability

We are committed to active and responsible corporate citizenship. Our Corporate Social Responsibility (“CSR”) program is divided into seven elements (diversity and inclusion; human resources; finance/accounting; responsible sourcing; environmental, health and safety; trade compliance; and business ethics), each spearheaded by company leaders and subject matter experts in their respective areas. We expect ADAS and automated driving technologies to provide strong social benefits including reducing roadway injuries and fatalities, including in urban areas, making roadways more efficient by reducing commuting times and CO2 emissions, and offering improved productivity.

Available Information

Our Annual Report on Form 10-K reports, along with all other reports and amendments filed with or furnished to the SEC, are publicly available free of charge on the Investors section of our website at www.luminartech.com or at www.sec.gov as soon as reasonably practicable after these materials are filed with or furnished to the SEC. We also use our website as a tool to disclose important information about the company and comply with our disclosure obligations under Regulation Fair Disclosure. Our governance guidelines, code of conduct and Board committee charters are also posted on the Investors section of our website. The information on our website (or any webpages referenced in this Annual Report on Form 10-K) is not part of this or any other report we file with, or furnish to, the SEC.

ITEM 1A. RISK FACTORS.

Risk Factor Summary

Investing in our securities involves a high degree of risk. You should carefully consider all information in this Annual Report on Form 10-K, including our consolidated financial statements and related notes appearing elsewhere in this Form 10-K and Item 7. Management's Discussion and Analysis of Financial Condition and results of operations," before purchasing our securities. These risks are discussed more fully in the section titled "Risk Factors." These risks and uncertainties include, but are not limited to, the following:

- our history of losses and our expectation that we will continue to incur significant expenses, including substantial R&D costs, and continuing losses for the foreseeable future as well as our limited operating history which makes it difficult to evaluate our future prospects and the risks and challenges we may encounter;
- our strategic initiatives which may prove more costly than we currently anticipate and potential failure to increase our revenue to offset these initiatives;
- whether our lidar products are selected for inclusion in autonomous driving or ADAS systems by automotive OEMs or their suppliers, and whether we will be de-selected by any customers, and end customer adoption rates and demand for our products;
- the lengthy period of time from a major commercial win to implementation and the risks of cancellation or postponement of the contract or unsuccessful implementation;
- potential inaccuracies in our forward looking metrics and estimates, including our "Order Book," and our future cost of goods sold (COGS) and bill of materials (BOM) and total addressable market;
- the discontinuation, lack of success of our customers in developing and commercializing products using our solutions or loss of business with respect to a particular vehicle model or technology package and whether end automotive consumers will demand and be willing to pay for such features;
- our inability to reduce and control the cost of the inputs on which we rely, which could negatively impact the adoption of our products and our profitability;
- the effect of continued pricing pressures, competition from other lidar manufacturers, automotive original equipment manufacturers ("OEMs") cost reduction initiatives and the ability of automotive OEMs to re-source or cancel vehicle or technology programs which may result in lower than anticipated margins, or losses, which may adversely affect our business;
- general economic uncertainty and the effect of general economic conditions on our industry in particular, including the level of demand and financial performance of the autonomous vehicle industry and lidar industry;
- specific economic and market uncertainty regarding the autonomous vehicle industry and lidar industry as a result of competitor failures, mergers, and delays;
- market adoption of lidar as well as developments in alternative technology and the increasingly competitive environment in which we operate, which includes established competitors and market participants that have substantially greater resources;
- our ability to achieve technological feasibility and commercialize our software products and the requirement to continue to develop new products and product innovations due to rapidly changing markets and government regulations of such technologies;
- our ability to manage our growth and expand our business operations effectively, including into international markets, such as China, which exposes us to operational, financial and regulatory risks;
- our sales have been primarily to customers making purchases for R&D projects and project-based orders which may cause potentially significant fluctuations in our quarterly and annual results of operations;
- adverse impacts due to limited availability and quality of materials, supplies, and capital equipment, or dependency on third-party service providers and single source suppliers;
- whether we will be able to successfully transition our engineering designs into high volume manufacturing, including our ability to transition to an outsourced manufacturing business model and whether we and our outsourcing partners and suppliers can successfully operate complex machinery;
- our ability to establish and maintain confidence in our long-term business prospects among customers and analysts and within our industry and whether we are subject to negative publicity;
- whether we can successfully select, execute or integrate our acquisitions;
- whether the complexity of our products results in undetected defects and reliability issues which could reduce market adoption of our products, limit our ability to manufacture, damage our reputation and expose us to product liability, warranty and other claims;
- our ability to maintain and adequately manage our inventory;
- our ability to maintain an effective system of internal control over financial reporting;
- our ability to protect and enforce our intellectual property rights;
- availability of qualified personnel, loss of highly skilled personnel and dependence on Austin Russell, our Founder, President and Chief Executive Officer;

- the impact of inflation and our stock price on our ability to hire and retain highly skilled personnel;
- the amount and timing of future sales and whether the average selling prices of our products could decrease rapidly over the life of the product as well as our dependence on a few key customers, who are often large corporations with substantial negotiating power;
- the effects of the ongoing coronavirus (COVID-19) pandemic or other infectious diseases, health epidemics, pandemics and natural disasters on Luminar's business;
- interruption or failure of our information technology and communications systems and cybersecurity risks to our operational systems, security systems, infrastructure, integrated software in our lidar solutions;
- strict government regulation that is subject to amendment, repeal or new interpretation and our ability to comply with modified or new laws and regulations applying to our business;
- market instability exacerbated by geopolitical conflicts, including Russia and China, and including the effect of sanctions and trade restrictions that may affect supply chain or sales opportunities;
- whether the concentration of our stock ownership and voting power limits the ability of our stockholders to influence corporate matters; and
- risks related to our indebtedness.

Risk Factors

Risks Related to Our Business and Industry

We are an early stage company with a history of losses, and we expect to incur significant expenses and continuing losses for the foreseeable future.

We have incurred net losses on an annual basis since our inception. We incurred net losses of \$445.9 million, \$238.0 million and \$362.3 million for the years ended December 31, 2022, 2021 and 2020, respectively. We believe that we will continue to incur operating and net losses each quarter until at least the time we begin commercial deliveries of our lidar-based products, which are not expected to begin until late 2023 and may occur later or not at all as we face challenges setting up outsourced manufacturing. Even if we successfully develop and sell our lidar and software solutions, there can be no assurance that they will be commercially successful. Our potential profitability is dependent upon the successful development and successful commercial introduction and acceptance of our lidar solutions, which may not occur.

We expect the rate at which we will incur losses to be remain high in future periods as we:

- expand our software development;
- continue to utilize our third-party partners for design, testing and commercialization;
- expand our production capabilities to produce our lidar solutions, including costs associated with outsourcing the production of our lidar solutions;
- expand our design, development, installation and servicing capabilities to address production of more products for more customers in more countries;
- build up inventories of parts and components for our lidar solutions;
- produce an inventory of our lidar solutions; and
- increase our sales and marketing activities and develop our distribution infrastructure.

Because we will incur the costs and expenses from these efforts before we receive incremental revenues with respect thereto, our losses in future periods will be significant. In addition, we may find that these efforts are more expensive than we currently anticipate or that these efforts may not result in revenues, which would further increase our losses.

Our limited operating history makes it difficult to evaluate our future prospects and the risks and challenges we may encounter.

We have been focused on developing lidar products for autonomous driving systems and driver assistance systems since 2012. This relatively limited operating history makes it difficult to evaluate our future prospects and the risks and challenges we may encounter. Risks and challenges we have faced or expect to face include our ability to:

- produce and deliver lidar and software products of acceptable performance, volume, cost, and quality;
- forecast our revenue and budget for and manage our expenses;
- attract new customers and retain existing customers in the automotive supply chain where sourcing and volume production targets are not guaranteed;
- comply with existing and new or modified laws and regulations applicable to our business;
- plan for and manage capital expenditures for our current and future products, and manage our supply chain and supplier relationships related to our current and future products;
- anticipate and respond to macroeconomic changes and changes in the markets in which we operate;
- maintain and enhance the value of our reputation and brand;
- effectively manage our growth and business operations, including the impacts of the COVID-19 pandemic on our business;
- develop and protect intellectual property;
- hire, integrate and retain talented people at all levels of its organization; and
- successfully develop new solutions to enhance the experience of customers and consumers.

If we fail to address the risks and difficulties that we face, including those associated with the challenges listed above as well as those described elsewhere in this “Risk Factors” section, our business, financial condition and results of operations

could be adversely affected. Further, because we have limited historical financial data and operate in a rapidly evolving market, any predictions about our future revenue and expenses may not be as accurate as they would be if we had a longer operating history or operated in a more predictable market. We have encountered in the past, and will encounter in the future, risks and uncertainties frequently experienced by growing companies with limited operating histories in rapidly changing industries. If our assumptions regarding these risks and uncertainties, which we use to plan and operate our business, are incorrect or change, or if we do not address these risks successfully, our results of operations could differ materially from our expectations and our business, financial condition and results of operations could be adversely affected.

We continue to implement strategic initiatives designed to grow our business. These initiatives may prove more costly than we currently anticipate and we may not succeed in increasing our revenue in an amount sufficient to offset the costs of these initiatives and to achieve and maintain profitability.

We continue to make investments and implement initiatives designed to grow our business, including:

- investing in R&D;
- expanding our sales and marketing efforts to attract new customers;
- investing in new applications and markets for our products;
- investing in our manufacturing processes and partnerships to scale production;
- protecting our intellectual property; and
- investing in legal, accounting, human resources, and other administrative functions necessary to support our operations as a public company.

These initiatives may prove more expensive than we currently anticipate, and we may not succeed in increasing our revenue, if at all, in an amount sufficient to offset these higher expenses and to achieve and maintain profitability. The market opportunities we are pursuing are at an early stage of development, and it may be many years before the end markets we expect to serve generate demand for our products at scale. Our revenue may be adversely affected for a number of reasons, including:

- the development and/or market acceptance of new technology that competes with our lidar products;
- if certain automotive OEMs or other market participants change their autonomous vehicle and driver assistance technologies;
- failure of our customers to commercialize autonomous systems that include our solutions;
- our ability to create, validate, and manufacture at high volume, and ship product to customers;
- our inability to effectively manage our inventory or manufacture products at scale, our inability to enter new markets or help our customers adapt our products for new applications; or
- our failure to attract new customers or expand orders from existing customers or increasing competition.

Furthermore, it is difficult to predict the size and growth rate of our target markets, customer demand for our products, commercialization timelines, developments in autonomous sensing and related technology, the entry of competitive products, or the success of existing competitive products and services. For these reasons, we do not expect to achieve profitability over the near term. If our revenue does not grow over the long term, our ability to achieve and maintain profitability may be adversely affected, and the value of our business may significantly decrease.

If our lidar products are not selected for inclusion in autonomous driving systems or ADAS by automotive OEMs or their suppliers, our business will be materially and adversely affected.

Automotive OEMs and their suppliers design and develop autonomous driving and ADAS technology over several years. These automotive OEMs and suppliers undertake extensive testing or qualification processes prior to placing orders for large quantities of products such as our lidar products, because such products will function as part of a larger system or platform and must meet certain other specifications. We spend significant time and resources to have our products selected by automotive OEMs and their suppliers. We define the term “major win” or “major commercial win” to have occurred when (a) we have obtained a written agreement (e.g. non-binding expression of interest arrangement or an agreement for non-recurring engineering project) or public announcement with a major industry player, and (b) based on past experience in high volume production, leadership in autonomy, or market leadership of said major industry player, we expect to ultimately be awarded a significant commercial program, including OEM series production programs. If we do not achieve a major commercial win with respect to a particular vehicle model, we may not have an opportunity to supply our products to the automotive OEM for that vehicle model for a period of many years. In many cases, this period can be as long as seven or more years. If our products are not selected by an automotive OEM or its suppliers for one vehicle model or if our products are not successful in that

vehicle model, it is unlikely that our product will be deployed in other vehicle models of that OEM. If we fail to win a significant number of vehicle models from one or more of automotive OEMs or their suppliers, our business, results of operations and financial condition will be materially and adversely affected. For more information about certain risks related to product selection, see the Risk Factor captioned *“The period of time from a major commercial win to implementation is long and we are subject to risks of cancellation or postponement of the contract or unsuccessful implementation.”*

The period of time from a major commercial win to implementation is long and we are subject to risks of cancellation or postponement of the contract or unsuccessful implementation.

Prospective customers, including those in the automotive industry, generally must make significant commitments of resources to test and validate our products and confirm that they can integrate with other technologies before including them in any particular system, product or model. While certain customers have executed a non-binding expression of interest arrangement or engaged us for non-recurring engineering projects while they are evaluating our products, none of our customers make contractual commitments to use our lidar sensors or software until all test and validation activities have been completed, they have finalized plans for integrating our systems, have a positive expectation of the market demand for our features, and unrelated to us, have determined that vehicle is ready for market and there is appropriate consumer demand. We expect that only after this point will our customers consider entering into definitive volume production agreements.

Through the end of 2022, none of our customers have completed their on-going testing and validation or have entered into definitive volume production agreements with us and there is no assurance or guarantee that any of our customers, including any for which we have announced a “major win” or “major commercial win” will ever complete such testing and validation or enter into a definitive volume production agreement with us or that we will receive any revenues forecasted in connection with such “major win” or “major commercial win”.

The development cycles of our products with new customers varies widely depending on the application, market, customer and the complexity of the product. In the automotive market, for example, this development cycle can be as long as seven or more years. The development cycle in certain other markets can be several months to a few years. These development cycles result in us investing our resources prior to realizing any revenue from the commercialization or obtaining any firm commitments of pricing, volume or timing of purchases of our products by our customers. Further, we are subject to the risk that customers cancel or postpone implementation of our technology, as well as that we will not be able to integrate our technology successfully into a larger system with other sensing modalities. Additionally, our revenue could be materially less than forecasted estimates if the system, product or vehicle model that includes our lidar products is unsuccessful, including for reasons unrelated to our technology. Long development cycles and product cancellations or postponements may adversely affect our business, results of operations and financial condition. Thus, even if we have been successful in obtaining major commercial wins, long development cycles and product cancellations or postponements and failures to successfully integrate our technology may materially and adversely affect our business, results of operations and financial condition.

Our forward looking estimates of certain financial metrics may prove inaccurate.

We use various estimates in formulating our business plans. We base our estimates upon a number of assumptions that are inherently subject to significant business and economic uncertainties and contingencies, many of which are beyond our control. These estimates include our assessment of whether a “major win” or “major commercial win” has occurred. Our estimates therefore may prove inaccurate, causing the actual amount to differ from our estimates. The factors which may cause actual amounts to differ from our estimates include, without limitation:

- the extent to which customers who have selected Luminar for a major commercial win include our hardware and software products into their systems, products or vehicle models;
- the extent to which Luminar meets contractual terms and conditions;
- the extent to which our technology is successfully integrated into our customers’ vehicles;
- the timing of when our customers adopt our technology into their vehicles on a commercial basis which could be delayed for regulatory, safety or reliability issues unrelated to our technology;
- undetected or unknown errors, defects or reliability issues in our hardware or software which could reduce the market adoption of our products or delay or stop production;
- loss of business with respect to, or the failure or lack of commercial success of, a vehicle model for which we are a significant supplier for reasons unrelated to our technology; For more information about certain risks related to discontinuation or loss of business, see the risk factor captioned *“The discontinuation or lack of commercial success of, or loss of business with respect to, a particular vehicle model or technology package for which we are a significant supplier could reduce our sales and adversely affect our profitability;”*

- a decline, for any reason, in the production levels of our customers, particularly with respect to models which incorporate our technology;
- customer cancellations of their contracts;
- the extent to which end customers select our products when purchasing a vehicle option package from vehicle manufacturers; and
- other risk factors set forth in this Annual Report.

Specifically, we use “Order Book” as a metric to measure performance against anticipated achievement of planned key milestones of our business. Order Book is defined as the forward-looking cumulative billings estimate of Luminar’s hardware and software products over the lifetime of given vehicle production programs which Luminar’s technology is expected to be integrated into or provided for, based primarily on projected / actual contractual pricing terms and our good faith estimates of “take rate” of Luminar’s technology on vehicles. “Take rates” are the anticipated percentage of new vehicles to be equipped with Luminar’s technology based on a combination of original equipment manufacturer (“OEM”) product offering decisions and predicted end consumer purchasing decisions. We include programs in our Order Book when (a) we have obtained a written agreement (e.g., non-binding expression of interest arrangement or an agreement for non-recurring engineering project) or public announcement with a major industry player, and (b) we expect to ultimately be awarded a significant commercial program.

We believe Order Book provides useful information to investors as a supplemental performance metric as our products are currently in a pre-production stage and therefore there are currently no billings or revenues from commercial grade product sales. OEMs customarily place non-cancelable purchase orders with their automotive component suppliers only shortly before or during production. Consequently, we use Order Book to inform investors about the progress of expected adoption of our technologies by OEMs because there is, in our view, no other better metric available at our stage.

The Order Book estimate may be impacted by various factors as described in this Annual Report, including, but not limited to the following:

- None of our customers make contractual commitments to use our lidar sensors and software until all test and validation activities have been completed, they have finalized plans for integrating our systems, have a positive expectation of the market demand for our features, and unrelated to us, have determined that their vehicle is ready for market and there is appropriate consumer demand. Consequently, there is no assurance or guarantee that any of our customers, including any programs which we included in our Order Book estimates will ever complete such testing and validation or enter into a definitive volume production agreement with us or that we will receive any billings or revenues forecasted in connection with such programs.
- The development cycles of our products with new customers vary widely depending on the application, market, customer, and the complexity of the product. In the automotive market, for example, this development cycle can be as long as seven or more years. Variability in development cycles make it difficult to reliably estimate the pricing, volume or timing of purchases of our products by our customers.
- Customers cancel or postpone implementation of our technology.
- We may not be able to integrate our technology successfully into a larger system with other sensing modalities.
- The product or vehicle model that is expected to include our lidar products may be unsuccessful, including for reasons unrelated to our technology.

These risks and uncertainties may cause our future actual sales to be materially different than that implied by the Order Book metric.

The discontinuation or lack of commercial success of, or loss of business with respect to, a particular vehicle model or technology package for which we are a significant supplier and the absence of demand from end automotive consumers for our features, could reduce our sales and adversely affect our profitability.

If we are able to secure major commercial wins and our solutions are included in these autonomous driving and ADAS products, we expect to enter into supply agreements with the relevant customer. Market practice dictates that these supply agreements typically require us to supply a customer’s requirements for a particular vehicle model or autonomous driving or ADAS product, rather than supply a set number of products. These requirement contracts can have short terms and/or can be subject to renegotiation, sometimes as frequently as annually, all of which may affect product pricing, and may be terminated by our customers at any time. Moreover, end automotive consumers must demand and be willing to pay for our features. Therefore, even if we are successful in obtaining major commercial wins and the systems into which our products are built are commercialized, the discontinuation of, the loss of business with respect to, or a lack of commercial success of a particular vehicle model or technology package for which we are a significant supplier, and the absence of demand from end automotive

consumers for our features, could mean that the expected sales of our products will not materialize which would materially and adversely affect our business.

Information concerning our future cost of goods sold (COGS) and bill of materials (BOM) estimates may prove inaccurate.

We periodically provide estimates of future cost of goods sold and bill of materials, which by necessity, are projections based on anticipated rates of future production of our customers and the timing of related expenditures, and there are uncertainties inherent in the creation and interpretation of such data.

Pricing negotiated in our supply agreements for key components like the receiver, ASIC and laser are dependent on volume estimates which may not be realized. Most of our components are manufactured using technologies that are highly complex and consequently, estimates of BOM and cost of goods sold may fluctuate due to many variable factors and assumptions, including but not limited to the following:

- meeting certain volume estimates;
- our reliance on key inputs and our ability to reduce and control the cost of such inputs. For more information about certain risks related to our reliance on key inputs and our inability to reduce and control the costs of such inputs, see the risk factor captioned *“We are reliant on key inputs and our ability to reduce and control the cost of such inputs could negatively impact the adoption of our products and our profitability;”*
- the risk of shortages and long lead times in the supply of key components and the risk that our suppliers discontinue or modify components used in its products. For more information about certain risks related to reliance on third party suppliers, see the risk factor captioned *“We rely on third-party suppliers and because some of the raw materials and key components in our products come from limited or single source suppliers, we are susceptible to supply shortages, long lead times for components, and supply changes, any of which could disrupt our supply chain and could delay deliveries of our products to customers;”*
- consistency and adequate quality and quantity of piece parts, other raw materials and other bill of materials items;
- contract negotiations and the execution of firm supply agreements;
- future versions of our product design incorporating new components meeting our customers’ requirements and specifications. For more information about certain risks related to product selection, see the risk factor captioned *“The period of time from a major commercial win to implementation is long and we are subject to risks of cancellation or postponement of the contract or unsuccessful implementation;”*
- the qualification of new versions of our key components. For more information about certain risks related to qualification, see the risk factor captioned *“If our lidar products are not selected for inclusion in autonomous driving systems or ADAS by automotive OEMs or their suppliers, our business will be materially and adversely affected;”*
- defects in production processes (including system assembly) either within our facilities or at our suppliers;
- any transitions or changes in our production process, planned or unplanned; and
- other risk factors set forth in this Annual Report.

We are reliant on key inputs and our inability to reduce and control the cost of such inputs could negatively impact the adoption of our products and our profitability.

The production of our sensors is dependent on producing or sourcing certain key components and raw materials at acceptable price levels. If we are unable to adequately reduce and control the costs of such key components, we will be unable to realize manufacturing costs targets, which could reduce the market adoption of our products, damage our reputation with current or prospective customers, and harm our brand, business, prospects, financial condition and operating results.

Continued pricing pressures, automotive OEM cost reduction initiatives and the ability of automotive OEMs to re-source or cancel vehicle or technology programs may result in lower than anticipated margins, or losses, which may adversely affect our business.

Cost-cutting initiatives adopted by our customers often result in increased downward pressure on pricing. We expect that our agreements with automotive OEMs may require step-downs in pricing over the term of the agreement or, if commercialized, over the period of production. In addition, our automotive OEM customers often reserve the right to terminate their supply contracts for convenience, which enhances their ability to obtain price reductions. Automotive OEMs also possess significant leverage over their suppliers, including us, because the automotive component supply industry is highly competitive, serves a limited number of customers and has a high fixed cost base.

Accordingly, we expect to be subject to substantial continuing pressure from automotive OEMs and Tier 1 suppliers to reduce the price of our products. It is possible that pricing pressures beyond our expectations could intensify as automotive OEMs pursue restructuring, consolidation and cost-cutting initiatives. If we are unable to generate sufficient production cost savings in the future to offset price reductions, our gross margin and profitability would be adversely affected.

We expect to incur substantial R&D costs and devote significant resources to identifying and commercializing new products, which could significantly reduce our profitability and may never result in revenue to us.

Our future growth depends on penetrating new markets, adapting existing products to new applications and customer requirements, and introducing new products that achieve market acceptance. We plan to incur substantial, and potentially increasing, R&D costs as part of our efforts to design, develop, manufacture and commercialize new products and enhance existing products. Our R&D expenses were \$185.3 million, \$88.9 million and \$38.7 million for the years ended December 31, 2022, 2021 and 2020, respectively, and are likely to grow in the future. Because we account for R&D as an operating expense, these expenditures will adversely affect our results of operations in the future. Further, our R&D program, including our software development efforts, may not produce successful results, and our new products may not achieve market acceptance, create additional revenue or become profitable.

Market adoption of lidar is uncertain. Developments in alternative technology may adversely affect the demand for our lidar technology. If market adoption of lidar does not continue to develop, or develops more slowly than we expect, or our investments in educating our customers about the advantages of lidar fail, our business will be adversely affected.

While our lidar-based ADAS and autonomous driving solutions can be applied to different use cases across end markets, nearly all of our revenue is generated from automotive applications. Despite the fact that the automotive industry has engaged in considerable effort to research and test lidar products for ADAS and autonomous driving applications, the automotive industry may not introduce lidar products in commercially available vehicles. We continually study emerging and competing sensing technologies and methodologies and we may add new sensing technologies. However, lidar products remain relatively new and it is possible that other sensing modalities, or a new disruptive modality based on new or existing technology, including a combination of technology, will achieve acceptance or leadership in the ADAS and autonomous driving industries. For example, significant developments in alternative technologies, such as cameras and radar, may materially and adversely affect our business in ways we do not currently anticipate. Existing and other camera and radar technologies may emerge as customers' preferred alternative to our solutions. Any failure by us and our R&D efforts to develop new or enhanced technologies or processes, or to react to changes in existing technologies, could materially delay our development and introduction of new and enhanced products in the autonomous vehicle industry, which could result in the loss of competitiveness of our lidar solutions, decreased revenue and a loss of market share to competitors. As technologies change, we plan to upgrade or adapt our lidar solutions with the latest technology. However, our solutions may not compete effectively with alternative systems if we are not able to source and integrate the latest technology into our existing lidar solutions.

Even if lidar products are used in initial generations of autonomous driving technology and certain ADAS products, we cannot guarantee that lidar products will be designed into or included in subsequent generations of such commercialized technology. Many automakers are now concentrating on improving consumer vehicle ADAS technology and creating new conditional automation systems; however, as these products and features are newly emerging, consumer acceptance and pricing desirability remains uncertain, and automakers may discontinue or decrease use in favor of cheaper vehicles, particularly if government regulations and safety ratings do not support ADAS technology. In addition, we expect that initial generations of fully autonomous vehicles will be focused on limited applications, such as robo-taxis, and that mass market adoption of autonomous technology may lag behind these initial applications significantly. The speed of market growth for ADAS or autonomous vehicles is difficult if not impossible to predict, and it is more difficult to predict this market's future growth in light of the economic consequences of the COVID-19 pandemic, geopolitical instability, rapid inflation, and recession. Educating customers about lidar, its advantages over other sensing technologies and lidar's ability to convey value in different industries and deployments is also an integral part of developing new business and the lidar market generally and if customers have a negative perception of, or experience with, lidar or a competitor's lidar products, they may be reluctant to adopt lidar in general or specifically our products. Our investments and efforts to educate potential customers and the market generally and to counter any adverse statements made by competitors or other market participants thus may not be successful.

Although we currently believe we are a leader in lidar-based systems for the autonomous vehicle market, by the time mass market adoption of autonomous vehicle technology is achieved, we expect competition among providers of sensing technology based on lidar and other modalities to increase substantially. If commercialization of lidar products is not successful, or not as successful as we or the market expects, or if other sensing modalities gain acceptance by developers of autonomous driving systems or ADAS, automotive OEMs, regulators and safety organizations or other market participants by the time autonomous vehicle technology achieves mass market adoption, our business, results of operations and financial condition will be materially and adversely affected.

In addition to automotive markets, we are investing in and pursuing market opportunities in other markets, including in aerospace, defense and aviation. We believe that our future revenue growth, if any, will depend in part on our ability to expand within new markets such as these and to enter new markets as they emerge. Each of these markets presents distinct risks and, in many cases, requires us to address the particular requirements of that market.

Addressing these requirements can be time-consuming and costly. The market for lidar technology outside of automotive applications is relatively new, rapidly developing and unproven in many markets or industries. Many of our customers outside of the automotive industry are still in the testing and development phases and we cannot be certain that they will commercialize products or systems with our lidar products or at all. We cannot be certain that lidar will be sold into these markets, or any market outside of the automotive market, at scale. Adoption of lidar products, including our products, outside of the automotive industry will depend on numerous factors, including: whether the technological capabilities of lidar and lidar-based products meet users' current or anticipated needs, whether the benefits of designing lidar into larger sensing systems outweigh the costs, complexity and time needed to deploy such technology or replace or modify existing systems that may have used other modalities such as cameras and radar, whether users in other applications can move beyond the testing and development phases and proceed to commercializing systems supported by lidar technology and whether lidar developers such as us can keep pace with rapid technological change in certain developing markets and the global response to evolving conditions relating to the COVID-19 pandemic and the length of any associated work stoppages. If lidar technology does not achieve commercial success outside of the automotive industry, or if the market develops at a pace slower than we expect, our business, results of operation and financial condition will be materially and adversely affected.

We may experience difficulties in managing our growth and expanding our operations.

We expect to experience significant growth in the scope and nature of our operations. Our ability to manage our operations and future growth will require us to continue to improve our operational, financial and management controls, compliance programs and reporting systems. We are currently in the process of strengthening our compliance programs, including our compliance programs related to export controls, privacy and cybersecurity and anti-corruption. We may not be able to implement improvements in an efficient or timely manner and may discover deficiencies in existing controls, programs, systems and procedures, which could have an adverse effect on our business, reputation and financial results.

We rely on third-party suppliers and because some of the raw materials and key components in our products come from limited or single source suppliers, we are susceptible to supply shortages, long lead times for components, and supply changes, any of which could disrupt our supply chain and could delay deliveries of our products to customers.

Some of the components that go into the manufacture of our solutions are sourced from third-party suppliers. To date, we have produced our products in relatively limited quantities for use in R&D programs. Although we do not have any experience in managing our supply chain to manufacture and deliver our products at scale, our future success will depend on our ability to manage our supply chain to manufacture and deliver our products at scale. Some of the key components used to manufacture our products come from limited or single source suppliers. We are therefore subject to the risk of shortages and long lead times in the supply of these components, including integrated circuits which are in short supply in the near term, and the risk that our suppliers discontinue or modify components used in its products. We have a global supply chain and the COVID-19 pandemic and other health epidemics and outbreaks, as well as geopolitical events, and government trade restrictions, may adversely affect our ability to source components in a timely or cost effective manner from our third-party suppliers due to, among other things, work stoppages or interruptions. For example, our products depend on lasers and we currently consume a substantial portion of the available market. Any shortage of these lasers could materially and adversely affect our ability to manufacture our solutions. In addition, the lead times associated with certain components are lengthy and preclude rapid changes in quantities and delivery schedules. We have in the past experienced and may in the future experience component shortages and price fluctuations of certain key components and materials, and the predictability of the availability and pricing of these components may be limited. Component shortages or pricing fluctuations could be material in the future. In the event of a component shortage, supply interruption or material pricing change from suppliers of these components, we may not be able to develop alternate sources in a timely manner or at all in the case of sole or limited sources. Developing alternate sources of supply for these components may be time-consuming, difficult, and costly and we may not be able to source these components on terms that are acceptable to us, or at all, which may undermine our ability to meet our requirements or to fill customer orders in a timely manner. Any interruption or delay in the supply of any of these parts or components, or the inability to obtain these parts or components from alternate sources at acceptable prices and within a reasonable amount of time, would adversely affect our ability to meet our scheduled product deliveries to our customers. This could adversely affect our relationships with our customers and channel partners and could cause delays in shipment of our products and adversely affect our operating results. In addition, increased component costs could result in lower gross margins. Even where we are able to pass increased component costs along to our customers, there may be a lapse of time before we are able to do so such that we must absorb the increased cost. If we are unable to buy these components in quantities sufficient to meet our requirements on a timely basis, we

will not be able to deliver products to our customers, which may result in such customers using competitive products instead of ours.

Because our sales have been primarily to customers making purchases for R&D projects and our orders are project-based, we expect our results of operations to fluctuate on a quarterly and annual basis, which could cause our stock price to fluctuate or decline.

Our quarterly results of operations have fluctuated in the past and may vary significantly in the future. As such, historical comparisons of our operating results may not be meaningful. In particular, because our sales to date have primarily been to customers making purchases for R&D, sales in any given quarter can fluctuate based on the timing and success of our customers' development projects. Accordingly, the results of any one quarter should not be relied upon as an indication of future performance. Our quarterly financial results may fluctuate as a result of a variety of factors, many of which are outside of our control and may not fully reflect the underlying performance of our business. These fluctuations could adversely affect our ability to meet our expectations or those of securities analysts, ratings agencies or investors. If we do not meet these expectations for any period, the value of our business and our securities could decline significantly. Factors that may cause these quarterly fluctuations include, without limitation, those listed below:

- the timing and magnitude of orders and shipments of our products in any quarter;
- pricing changes we may adopt to drive market adoption or in response to competitive pressure;
- our ability to retain our existing customers and attract new customers;
- our ability to develop, introduce, manufacture and ship in a timely manner products that meet customer requirements;
- disruptions in our sales channels or termination of its relationship with important channel partners;
- delays in customers' purchasing cycles or deferments of customers' purchases in anticipation of new products or up-dates from us or our competitors;
- fluctuations in demand pressures for our products;
- the mix of products sold in any quarter;
- the duration of the global COVID-19 pandemic and the time it takes for economic recovery;
- the timing and rate of broader market adoption of autonomous systems utilizing our solutions across the automotive and other market sectors;
- market acceptance of lidar and further technological advancements by our competitors and other market participants;
- the ability of our customers to commercialize systems that incorporate our products;
- any change in the competitive dynamics of our markets, including consolidation of competitors, regulatory developments and new market entrants;
- our ability to effectively manage our inventory;
- changes in the source, cost, availability of and regulations pertaining to materials we use, including the effect of inflation on the cost of components for our products;
- adverse litigation, judgments, settlements or other litigation-related costs, or claims that may give rise to such costs; and
- general economic, industry and market conditions, including trade disputes.

Our transition to an outsourced manufacturing business model may not be successful, which could harm our ability to deliver products and recognize revenue.

We are in the initial stages of transitioning from a manufacturing model in which we primarily manufactured and assembled our products at our Orlando, Florida location, to one where we rely on third-party manufacturers in Mexico, Thailand and potentially other foreign and domestic locations. We believe the use of third-party manufacturers will have benefits, but in the near term, while we are beginning manufacturing with new partners, we may lose revenue, incur increased costs and potentially harm our customer relationships.

Reliance on third-party manufacturers reduces our control over the manufacturing process, including our ability to finalize changes through validation, reduced control over quality, product costs and product supply and timing. We may

experience delays in shipments or issues concerning product quality from our third-party manufacturers. If any of our third-party manufacturers experience interruptions, delays or disruptions in supplying our products, including due to natural disasters, the global COVID-19 pandemic, other health epidemics and outbreaks, geopolitical events, trade restrictions, or work stoppages or capacity constraints, our ability to ship products to distributors and customers would be delayed. In addition, unfavorable economic conditions could result in financial distress among third-party manufacturers upon which we rely, including those caused by tax or tariff changes, thereby increasing the risk of disruption of supplies necessary to fulfill our production requirements and meet customer demands. Additionally, if any of our third-party manufacturers experience quality control problems in their manufacturing operations and our products do not meet customer or regulatory requirements, we could be required to cover the cost of repair or replacement of any defective products. These delays or product quality issues could have an immediate and material adverse effect on our ability to fulfill orders and could have a negative effect on our operating results. In addition, such delays or issues with product quality could adversely affect our reputation and our relationship with our channel partners. If third-party manufacturers experience financial, operational, manufacturing capacity or other difficulties, or experience shortages in required components, or if they are otherwise unable or unwilling to continue to manufacture our products in required volumes or at all, our supply may be disrupted, we may be required to seek alternate manufacturers and we may be required to re-design our products. It would be time-consuming, and could be costly and impracticable, to begin to use new manufacturers and designs, and such changes could cause significant interruptions in supply and could have an adverse effect on our ability to meet our scheduled product deliveries and may subsequently lead to the loss of sales. While we take measures to protect our trade secrets, the use of third-party manufacturers may also risk disclosure of our innovative and proprietary manufacturing methodologies, which could adversely affect our business.

Our sales and operations in international markets, including our manufacturing operations, expose us to operational, financial and regulatory risks.

International sales comprise a significant amount of our overall revenue. Sales to international customers accounted for 14%, 29% and 71% of our revenue in 2022, 2021 and 2020, respectively. We are committed to growing our international sales. While we have committed resources, and are working closely with OEMs and other collaborators outside the United States, to expand our international operations and sales channels, these efforts may not be successful. We have also commenced international manufacturing operations. International operations, including any manufacturing operations, are subject to a number of other risks, including:

- foreign currency and exchange rate fluctuations;
- local economic conditions;
- political and economic instability, wars and military conflicts, international terrorism and anti-American sentiment, particularly in emerging markets;
- global or regional health crises, such as the COVID-19 pandemic or other health epidemics and outbreaks;
- potential for violations of anti-corruption laws and regulations, such as those related to bribery and fraud;
- tariffs, other trade barriers and restrictions and preference for locally branded products, and laws and business practices favoring local competition;
- potential consequences of, and uncertainty related to, the “Brexit” process in the United Kingdom, which could lead to additional expense and complexity in doing business there;
- increased difficulty in managing inventory;
- difficulties in collecting receivables from foreign entities;
- less effective protection of intellectual property;
- foreign government regulatory requirements and stringent regulation of the autonomous or other systems or products using our products and stringent consumer protection and product compliance regulations, including but not limited to General Data Protection Regulation in the European Union, European competition law, the Restriction of Hazardous Substances Directive, the Waste Electrical and Electronic Equipment Directive and the European Ecodesign Directive, all of which are costly to comply with and may vary from country to country;
- difficulties and costs of staffing and managing foreign operations;
- import and export laws and requirements and the impact of tariffs;
- potentially adverse tax consequences and changes in local tax and customs duty laws or changes in the enforcement, application or interpretation of such laws; and
- U.S. government’s restrictions on certain technology transfer to certain countries of concern.

The occurrence of any of these risks could negatively affect our international business or increase our costs and decrease our profit margins and consequently materially and adversely affect our business, operating results and financial condition.

We, our outsourcing partners and our suppliers may rely on complex machinery for our production, which involves a significant degree of risk and uncertainty in terms of operational performance and costs.

We, our outsourcing partners and our suppliers may rely on complex machinery for the production, assembly and installation of our lidar solutions, which will involve a significant degree of uncertainty and risk in terms of operational performance and costs. Our production facilities and the facilities of our outsourcing partners and suppliers consist of large-scale machinery with high capital expense combining many components. These components may suffer unexpected malfunctions from time to time and will depend on repairs and spare parts to resume operations, which may not be available when needed. Unexpected malfunctions of these components may significantly affect the intended operational efficiency. Operational performance and costs can be difficult to predict and are often influenced by factors outside of our control, such as, but not limited to, scarcity of natural resources, environmental hazards and remediation, costs associated with decommissioning of machines, labor disputes and strikes, difficulty or delays in obtaining governmental permits, damages or defects in electronic systems, industrial accidents, fire, seismic activity and natural disasters. Should operational risks materialize, it may result in the personal injury to or death of workers, the loss of production equipment, damage to production facilities, monetary losses, delays and unanticipated fluctuations in production, environmental damage, administrative fines, increased insurance costs and potential legal liabilities, all which could have a material adverse effect on our business, prospects, financial condition or operating results.

As part of growing our business, we may make acquisitions. If we fail to successfully select, execute or integrate our acquisitions, then our business, results of operations and financial condition could be materially adversely affected, and our stock price could decline.

From time to time, we may undertake acquisitions to add new products and technologies, acquire talent, gain new sales channels or enter into new markets or sales territories. In addition to possible stockholder approval, we may need approvals and licenses from relevant government authorities for the acquisitions and to comply with any applicable laws and regulations, which could result in increased delay and costs, and may disrupt our business strategy if we fail to do so. Furthermore, acquisitions and the subsequent integration of new assets, businesses, key personnel, customers, vendors and suppliers require significant attention from our management and could result in a diversion of resources from our existing business, which in turn could have an adverse effect on our operations. Acquired assets or businesses may not generate the financial results we expect. Acquisitions could result in the use of substantial amounts of cash, dilutive issuances of equity securities, the occurrence of significant goodwill impairment charges, amortization expenses for other intangible assets and exposure to potential unknown liabilities of the acquired business. Moreover, the costs of identifying and consummating acquisitions may be significant.

To date, we have limited experience with acquisitions and the integration of acquired technology and personnel. Failure to successfully identify, complete, manage and integrate acquisitions could materially and adversely affect our business, financial condition and results of operations and could cause our stock price to decline.

Any failure to grow our relationship with Chinese customers and our proposed international expansion into China could expose us to substantial business, regulatory, political, financial and economic risks.

We have entered into relationships with Chinese customers pursuant to which we plan to establish a presence in China to support the collaboration between the parties and enable series production of autonomous vehicles utilizing our technology by 2023. Any failure in our ability to establish our presence in China, grow our relationship with Chinese OEMs, successfully launch our products and maintain product quality, or to realize the anticipated benefits of our relationships could harm our brand, prospects, financial condition and operating results and have an adverse effect on our business. Our proposed expansion into China could also expose us to substantial risks associated with doing business in China, such as, taxation, inflation, manufacturing, environmental and other regulations, foreign currency exchange rates, political risks, intellectual property risks, the labor market and property and financial regulations. Additionally, we would need to maintain compliance with the market's ongoing development of standards to define deployment requirements for higher levels of autonomy.

Our ability to operate in China may also be adversely affected by changes in, or our failure to comply with, Chinese laws, regulations and standards. As we hire personnel to maintain our operations in China, we would also be exposed to risks associated with any changes to the employment and labor laws in China, which could increase our operating costs in China. There is also significant uncertainty about the future relationship between the United States and China with respect to political risks, including but not limited to, trade policies, technology transfer restrictions, treaties, government regulations and tariffs. See “Changes to trade policy, tariffs and import/export regulations may have a material adverse effect on our business, financial condition and results of operations” below.

The complexity of our products could result in unforeseen delays or expenses from undetected defects, errors or reliability issues in hardware or software which could reduce the market adoption of our new products, damage our reputation with current or prospective customers, expose us to product liability and other claims and adversely affect our operating costs.

Our products, including our hardware and in-development software, are highly technical and very complex and require high standards to manufacture and have in the past and will likely in the future experience defects, security vulnerabilities or other errors or reliability issues at various stages of development. We may be unable to timely release new products, manufacture existing products, correct problems that have arisen or correct such problems to our customers' satisfaction. Additionally, undetected errors, defects or security vulnerabilities, especially as new products are introduced or as new versions are released, could result in serious injury to the end users of technology incorporating our products, or those in the surrounding area. Other consequences could include our customers never being able to commercialize technology incorporating our products, litigation against us, negative publicity and other consequences. These risks are particularly prevalent in the highly competitive autonomous driving and ADAS markets. Some errors or defects in our products may only be discovered after they have been tested, commercialized and deployed by customers. If an accident involving a vehicle using our technology were to occur and result in injuries or purported injuries or death, we may incur significant costs from product recalls and repair or replacement requirements, as well as lawsuits, including class actions for product liability or other claims against us by our customers and end users which could result in substantial costs and diversion of management resources. Our reputation or brand may also be damaged as a result of these problems and customers may be reluctant to buy our products, which could adversely affect our ability to retain existing customers and attract new customers and could adversely affect our financial results.

We could also face claims for breach of contract, fraud, tort or breach of warranty as a result of these problems, and our business liability insurance coverage could prove inadequate with respect to a claim and future coverage may be unavailable on acceptable terms or at all.

In addition, if lawmakers or governmental agencies were to determine that the use of our products or autonomous driving or certain ADAS applications increased the risk of injury to all or a subset of end users, they may pass laws or adopt regulations that limit the use of our products or increase our liability associated with the use of our products or that regulate the use of or delay the deployment of autonomous driving and ADAS technology. Any of these events could adversely affect our brand, relationships with customers, operating results or financial condition.

We may be subject to product liability or warranty claims that could result in significant direct or indirect costs, which could adversely affect our business and operating results.

We typically provide a limited-time warranty on our products. The occurrence of any material defects in our products could make us liable for damages and warranty claims. In addition, we could incur significant costs to correct any defects, warranty claims or other problems, including costs related to product recalls. Any negative publicity related to the perceived quality of our products could affect our brand image, partner and customer demand, and adversely affect our operating results and financial condition. Also, warranty, recall and product liability claims may result in litigation, including class actions, the occurrence of which could be costly, lengthy and distracting and adversely affect our business and operating results.

If we do not maintain sufficient inventory or if we do not adequately manage our inventory, we could lose sales or incur higher inventory-related expenses, which could negatively affect our operating results.

To ensure adequate inventory supply, we must forecast inventory needs and expenses, place orders sufficiently in advance with our suppliers and manufacturing partners and manufacture products based on our estimates of future demand for particular products. Fluctuations in the adoption of lidar products may affect our ability to forecast our future operating results, including revenue, gross margins, cash flows and profitability. Our ability to accurately forecast demand for our products could be affected by many factors, including the rapidly changing nature of the autonomous driving and ADAS markets in which we operate, the uncertainty surrounding the market acceptance and commercialization of lidar technology, the emergence of new markets, an increase or decrease in customer demand for our products or for products and services of our competitors, product introductions by competitors, the COVID-19 pandemic, other health epidemics and outbreaks, and any associated work stoppages or interruptions, unanticipated changes in general market conditions and the weakening of economic conditions or consumer confidence in future economic conditions. If our lidar products are commercialized in autonomous driving and ADAS applications, both of which are experiencing rapid growth in demand, we may face challenges acquiring adequate supplies to manufacture our products and/or we and our manufacturing partners may not be able to manufacture our products at a rate necessary to satisfy the levels of demand, which would negatively affect our revenue and operating results and could result in damage to our brand and customer relationships. This risk may be exacerbated by the fact that we may not carry or be able to obtain for our manufacturers a significant amount of inventory to satisfy short-term demand increases. If we fail to accurately forecast customer demand, we may experience excess inventory levels or a shortage of products available for sale.

Inventory levels in excess of customer demand may result in inventory write-downs or write-offs and the sale of excess inventory at discounted prices, which would adversely affect our financial results, including our gross margin, and have a negative effect on our brand.

The average selling prices of our products could decrease rapidly over the life of the product, which may negatively affect our revenue and gross margin.

We may experience declines in the average selling prices of our products generally as our customers seek to commercialize autonomous systems at prices low enough to achieve market acceptance. In order to sell products that have a falling average unit selling price and maintain margins at the same time, we will need to continually reduce product and manufacturing costs. To manage manufacturing costs, we must engineer the most cost-effective design for our products. We must also continuously drive initiatives to reduce labor cost, improve worker efficiency, reduce the cost of materials, use fewer materials and further lower overall product costs by carefully managing component prices, inventory and shipping cost. We also need to continually introduce new products with higher sales prices and gross margin to maintain our overall gross margin. If we are unable to manage the cost of older products or successfully introduce new products with higher gross margin, our revenue and overall gross margin would likely decline.

Adverse conditions in the automotive industry or the global economy more generally could have adverse effects on our results of operations.

While we make our strategic planning decisions based on the assumption that the markets we are targeting will grow, our business is dependent, in large part on, and directly affected by, business cycles and other factors affecting the global automobile industry and global economy generally. Automotive production and sales are highly cyclical and depend on general economic conditions and other factors, including consumer spending and preferences, changes in interest rates and credit availability, consumer confidence, fuel costs, fuel availability, environmental impact, governmental incentives and regulatory requirements, and political volatility, especially in energy-producing countries and growth markets. In addition, automotive production and sales can be affected by our automotive OEM customers' ability to continue operating in response to challenging economic conditions and in response to labor relations issues, regulatory requirements, trade agreements and other factors, such as COVID-19's impact on supply of semiconductors for automobiles. The volume of automotive production in North America, Europe and the rest of the world has fluctuated, sometimes significantly, from year to year, and we expect such fluctuations to give rise to fluctuations in the demand for our products. Any significant adverse change in any of these factors may result in a reduction in automotive sales and production by our automotive OEM customers and could have a material adverse effect on our business, results of operations and financial condition.

Because lidar is new and since many of the markets in which we compete are new and rapidly evolving, it is difficult to forecast long-term end-customer adoption rates and demand for our products.

We are pursuing opportunities in markets that are undergoing rapid changes, including technological and regulatory changes, and it is difficult to predict the timing and size of the opportunities. For example, autonomous driving and lidar-based ADAS applications require complex technology. Because these automotive systems depend on technology from many companies, commercialization of autonomous driving or ADAS products could be delayed or impaired on account of certain technological components of our or others not being ready to be deployed in vehicles. Although we currently are engaged with multiple commercial customers, these companies may not be able to commercialize our technology immediately, or at all. Regulatory, safety or reliability developments, many of which are outside of our control, could also cause delays or otherwise impair commercial adoption of these new technologies, including whether government policy, regulation, and consumer education and ratings programs support autonomous technology or improved driver assistance systems. Our future financial performance will depend on our ability to make timely investments in the correct market opportunities and to anticipate potential technological changes. If one or more of these markets experience a shift in customer or prospective customer demand, our products may not compete as effectively, if at all, and they may not be designed into commercialized products. Given the evolving nature of the markets in which we operate, it is difficult to predict customer demand or adoption rates for our products or the future growth of the markets in which we operate. As a result, any financial projections in this Annual Report and any market opportunity estimates and forecasts of market growth necessarily reflect various estimates and assumptions that may not prove accurate and these projections could differ materially from actual results due to the risks included in this "Risk Factors" section, among others. If demand does not develop or if we cannot accurately forecast customer demand, the size of our markets, inventory requirements or our future financial results, our business, results of operations and financial condition will be adversely affected. Even if markets experience the forecasted growth described in this Annual Report, we may not grow our business at similar rates, or at all, since our business is subject to many risks and uncertainties set forth in this Annual Report. Accordingly, the forecasts and estimates of market size and growth described in this Annual Report, including our estimates of the size of our total addressable market should not be taken as indicative of our future growth.

We currently have and target customers that are large corporations with substantial negotiating power, exacting product standards and potentially competitive internal solutions. If we are unable to sell our products to these customers, our prospects and results of operations will be adversely affected.

Many of our customers and potential customers are large, multinational corporations with substantial negotiating power relative to us and, in some instances, may have internal solutions that are competitive to our products. These large, multinational corporations also have significant development resources, which may allow them to acquire or develop independently, or in partnership with others, competitive technologies. Meeting the technical requirements and securing major commercial wins with any of these companies will require a substantial investment of our time and resources. We cannot assure you that our products will secure major commercial wins from these or other companies or that we will generate meaningful revenue from the sales of our products to these key potential customers. If our products are not selected by these large corporations or if these corporations develop or acquire competitive technology, it will have an adverse effect on our business.

We are substantially dependent on our partnership with a few key customers, and our business could be materially and adversely affected if our partnership with any of such customers were terminated. Our financial position and results could be materially and adversely affected if we were unable to collect our invoices for any of our key customers.

We are dependent on a collection of large customers with strong purchasing power. In 2022, 2021 and 2020, our top 10 customers represented 69%, 87% and 94% of our revenue, respectively. In 2022, Daimler and Scale.AI, in 2021, Daimler and Volvo and in 2020, Volvo accounted for more than 10% of our annual revenue. The loss of business from any of our major customers (whether by lower overall demand for our products, cancellation of existing contracts or product orders or the failure to design in our products or award us new business) could have a material adverse effect on our business.

To the extent autonomous vehicle and ADAS systems become accepted by major automotive OEMs, we expect that we will rely increasingly for our revenue on Tier 1 suppliers through which automotive OEMs procure components. We expect that these Tier 1 suppliers will be responsible for certain hardpoint and software configuration activities specific to each OEM, and they may not exclusively carry our solutions.

There can be no assurance that we will be able to maintain our relationship with any of our key customers and secure orders for our products. If we are unable to maintain our relationship any of our key customers, or if our arrangement is modified so that the economic terms become less favorable to us, then our business, financial results and position would be materially adversely affected. There is also a risk that one or more of our major customers could be unable to pay our invoices as they become due or that a customer will simply refuse to make such payments if it experiences financial difficulties. If a major customer were to enter into bankruptcy proceedings or similar proceedings whereby contractual commitments are subject to stay of execution and the possibility of legal or other modification, we could be forced to record a substantial loss.

If we are unable to establish and maintain confidence in our long-term business prospects among customers and analysts and within our industry or are subject to negative publicity, then our financial condition, operating results, business prospects and access to capital may suffer materially.

Customers may be less likely to purchase our lidar solutions if they are not convinced that our business will succeed or that our service and support and other operations will continue in the long term.

Similarly, suppliers and other third parties will be less likely to invest time and resources in developing business relationships with us if they are not convinced that our business will succeed. Accordingly, in order to build and maintain our business, we must maintain confidence among customers, suppliers, analysts, ratings agencies and other parties in our products, long-term financial viability and business prospects. Maintaining such confidence may be particularly complicated by certain factors including those that are largely outside of our control, such as our limited operating history, customer unfamiliarity with our lidar solutions, any delays in scaling production, delivery and service operations to meet demand, competition and uncertainty regarding the future of autonomous vehicles or our other services and our production and sales performance compared with market expectations.

We operate in a highly competitive market and some market participants have substantially greater resources. We compete against a large number of both established competitors and new market entrants.

The markets for sensing technology applicable to autonomous solutions in the automobile industry are highly competitive. Our future success will depend on our ability to remain a leader in our targeted markets by continuing to develop and protect from infringement advanced lidar technology in a timely manner and to stay ahead of existing and new competitors. Our competitors are numerous and they compete with us directly by offering lidar products and indirectly by attempting to solve some of the same challenges with different technology. We face competition from camera and radar companies, other developers of lidar products, Tier 1 suppliers and other technology and automotive supply companies, some of which have significantly greater resources than we do. In the automotive market, our competitors have commercialized both lidar and non-lidar-based ADAS technology that has achieved market adoption, strong brand recognition and may continue to improve. Other

competitors are working towards commercializing autonomous driving technology and either by themselves, or with a publicly announced partner, have substantial financial, marketing, R&D and other resources. Some of our customers in the autonomous vehicle and ADAS markets have announced development efforts or made acquisitions directed at creating their own lidar-based or other sensing technologies, which would compete with our solutions. We do not know how close these competitors are to commercializing autonomous driving systems or novel ADAS applications. In markets outside of the automotive industry, our competitors, like us, seek to develop new sensing applications across industries. Even in these emerging markets, we face substantial competition from numerous competitors seeking to prove the value of their technology.

Additionally, increased competition may result in pricing pressure and reduced margins and may impede our ability to increase the sales of our products or cause us to lose market share, any of which will adversely affect our business, results of operations and financial condition.

If we are unable to achieve technological feasibility and commercialize our software products, including our perception and decision-making software products such as our Proactive Safety™ and highway autonomy features, and other new solutions and improve existing solutions in a cost-effective and timely manner, then our competitive position would be negatively impacted and our business, results of operations and financial condition would be adversely affected. The markets in which we compete are characterized by rapid technological change, which requires us to continue to develop new products and product innovations and could adversely affect market adoption of our products.

Our future success will depend upon our ability to develop our software products, including our perception and decision-making software products such as our Proactive Safety™ and highway autonomy features, and our ability to introduce a variety of new capabilities, product offerings and innovations to our existing product offerings, to address the changing needs of the markets in which we offer our products.

We are currently working on developing perception and decision-making software products, including the Proactive Safety™ and highway autonomy features as well as the Sentinel solution, all of which are important components of our business plan and which have not achieved technological feasibility as of the end of the 2022 fiscal year. We may encounter significant unexpected technical and production challenges, or delays in completing the development of these and other solutions and ramping production in a cost-efficient manner. We cannot guarantee that such software or other new products will be successfully developed, released in a timely manner, or at all, or achieve satisfactory performance or market acceptance and any such failure could materially adversely affect our business, results of operations and financial condition, and cause our stock price to decline.

Delays in delivering new products that meet customer requirements could damage our relationships with customers and lead them to seek alternative sources of supply and we may not be able to achieve additional design wins with existing or new customers, or achieve broader market acceptance of our solutions. In addition, our success to date has been based on the delivery of our solutions to R&D programs in which developers are investing substantial capital to develop new systems. Our continued success relies on the success of the R&D phase of these customers as they expand into commercialized projects. As autonomous technology reaches the stage of large-scale commercialization, we will be required to develop and deliver solutions at price points that enable wider and ultimately mass-market adoption. Failure to achieve technological feasibility of our software products, or delays in introducing products and innovations, the failure to choose correctly among technical alternatives or the failure to offer innovative products or configurations at competitive prices may cause existing and potential customers to purchase our competitors' products or turn to alternative sensing technology.

If we are unable to devote adequate resources to develop products or cannot otherwise successfully develop products or system configurations that meet customer requirements and on a timely basis or that remain competitive with technological alternatives, our products could lose market share, our revenue could decline, we may experience operating losses and our business and prospects would be adversely affected.

While we intend to invest substantial resources to remain on the forefront of technological development, continuing technological changes in sensing technology, lidar and the markets for these products, including the ADAS and autonomous driving industries, could adversely affect adoption of lidar and/or our products, either generally or for particular applications.

We had identified material weaknesses in our internal control over financial reporting as of December 31, 2021 and 2020. These material weaknesses were remediated in 2022, however, if we are unable to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results in a timely manner, which may adversely affect investor confidence in us and materially and adversely affect our business and operating results.

In connection with our financial statement close process for the years ended December 31, 2021 and 2020, we had identified material weaknesses in the design and operating effectiveness of our internal control over financial reporting. The material weaknesses we identified resulted from a lack of sufficient number of qualified personnel within our accounting and internal audit function who possessed an appropriate level of expertise to effectively perform functions relating to control environment, control activities, information and communication and monitoring. In addition, these material weaknesses

contributed to material weaknesses in information technology controls and journal entry review. These material weaknesses were remediated during the year ended December 31, 2022. For a further discussion of these material weaknesses and steps undertaken by our management for the remediation, see “Management’s Report on Internal Control over Financial Reporting” in Item 9A. Controls and Procedures.

A material weakness is a deficiency or combination of deficiencies in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our financial statements would not be prevented or detected on a timely basis. These deficiencies could result in additional material misstatements to our consolidated financial statements that may not be prevented or detected on a timely basis.

Although we have remediated the material weaknesses, additional weaknesses in our internal controls may be discovered in the future. Any failure to further develop or maintain effective controls, or any difficulties encountered in our implementation or improvement, could adversely affect our operating results, cause us to fail to meet our reporting obligations and result in a restatement of our financial statements for prior periods. If any of these were to occur, investors may lose confidence in the accuracy and completeness of our financial reports, the market price of our common stock could be adversely affected. In addition, we could become subject to litigation or investigations by Nasdaq, the SEC, or other regulatory authorities.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

As of December 31, 2022, we had \$597.0 million of U.S. federal and \$547.8 million of state net operating loss carryforwards available to reduce future taxable income. Of the \$597.0 million in U.S. federal operating loss carryforwards, \$553.8 million will be carried forward indefinitely for U.S. federal tax purposes and \$43.2 million will expire between 2035 and 2037. The \$547.8 million of our U.S. state net operating loss carryforwards will expire beginning in 2036. It is possible that we will not generate taxable income in time to use these net operating loss carryforwards before their expiration or at all. Under legislative changes made in December 2017, U.S. federal net operating losses incurred in 2018 and in future years may be carried forward indefinitely, but the deductibility of such net operating losses is limited. It is uncertain if and to what extent various states will conform to the newly enacted federal tax law. In addition, the federal and state net operating loss carryforwards and certain tax credits may be subject to significant limitations under Section 382 and Section 383 of the U.S. Tax Code, respectively, and similar provisions of state law. Under those sections of the U.S. Tax Code, if a corporation undergoes an “ownership change,” the corporation’s ability to use its pre-change net operating loss carryforwards and other pre-change attributes, such as research tax credits, to offset its post-change income or tax may be limited. In general, an “ownership change” will occur if there is a cumulative change in our ownership by “5-percent shareholders” that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws.

We are highly dependent on the services of Austin Russell, our Founder, President and Chief Executive Officer.

We are highly dependent on Austin Russell, our Founder, President and Chief Executive Officer. Mr. Russell created our first lidar product and he remains deeply involved in all aspects of our business, including product development. The loss of Mr. Russell would adversely affect our business because his loss could make it more difficult to, among other things, compete with other market participants, manage our R&D activities and retain existing customers or cultivate new ones. Negative public perception of, or negative news related to, Mr. Russell may adversely affect our brand, relationship with customers or standing in the industry.

Our business depends substantially on the efforts of our executive officers and highly skilled personnel, and our operations may be severely disrupted if we lost their services.

Competition for highly-skilled personnel is often intense, especially in Orlando, Florida and the San Francisco Bay Area, where two of our offices are located, and we may incur significant costs to attract highly-skilled personnel. We may not be successful in attracting, integrating, or retaining qualified personnel to fulfill our current or future needs. We have, from time to time, experienced, and we expect to continue to experience, difficulty in hiring and retaining highly skilled employees with appropriate qualifications. In addition, job candidates and existing employees often consider the value of the equity awards they receive in connection with their employment. Because we believe in an employee compensation philosophy based highly in equity to preserve capital and align employee interests with stockholders, a significant decrease in our stock price or the perceived value of our equity or equity awards may adversely affect our ability to retain highly skilled employees. If we fail to attract new personnel or fail to retain and motivate our current personnel, our business and future growth prospects could be adversely affected and attracting and retaining talent using equity may be more expensive.

Our business could be materially and adversely affected by the current global COVID-19 pandemic or other health epidemics and outbreaks.

The ongoing COVID-19 pandemic as well as other possible health epidemics and outbreaks could result in a material adverse impact on our or our customers’ business operations including reduction or suspension of operations in the U.S. or certain parts of the world. The ongoing COVID-19 pandemic may have the effect of heightening many of the other risks

described in this “Risk Factors” section, such as the demand for our products, our ability to achieve or maintain profitability and our ability to raise additional capital in the future. Our corporate headquarters and R&D and manufacturing base are located in Florida, which has a high number of COVID-19 pandemic cases. Our engineering and manufacturing operations, among others, cannot all be conducted in a remote working structure and often require on-site access to materials and equipment. We have customers with international operations in varying industries. We also depend on suppliers and manufacturers worldwide. Depending upon the duration of the ongoing COVID-19 pandemic and the associated business interruptions, our customers, suppliers, manufacturers and partners may suspend or delay their engagement with us, which could result in a material adverse effect on our financial condition. Our response to the ongoing COVID-19 pandemic may prove to be inadequate and we may be unable to continue our operations in the manner we had prior to the outbreak, and may endure interruptions, reputational harm, delays in our product development and shipments, all of which could have an adverse effect on our business, operating results, and financial condition. In addition, when the pandemic subsides, we cannot assure you as to the timing of any economic recovery, which could continue to have a material adverse effect on our target markets and our business.

Interruption or failure of our information technology and communications systems could impact our ability to effectively provide our services.

We plan to include in-vehicle services and functionality that utilize data connectivity to monitor performance and timely capture opportunities to enhance performance and functionality. The availability and effectiveness of our services depend on the continued operation of information technology and communications systems. Our systems will be vulnerable to damage or interruption from, among others, physical theft, fire, terrorist attacks, natural disasters, power loss, war, telecommunications failures, viruses, denial or degradation of service attacks, ransomware, social engineering schemes, insider theft or misuse or other attempts to harm our systems. We utilize reputable third-party service providers or vendors for all of our data other than our source code, and these providers could also be vulnerable to damage or interruption from actions or conditions similar to those that could damage our systems, including sabotage and intentional acts of vandalism causing potential disruptions. Some of our systems will not be fully redundant, and our disaster recovery planning cannot account for all eventualities. Any problems with our third-party cloud hosting providers could result in lengthy interruptions in our business. In addition, our in-vehicle services and functionality are highly technical and complex technology which may contain errors or vulnerabilities that could result in interruptions in our business or the failure of our systems.

We are subject to cybersecurity risks to our and our suppliers’ operational systems, security systems, infrastructure, integrated software in our lidar solutions and customer data processed by us or third-party vendors or suppliers and any material failure, weakness, interruption, cyber event, incident or breach of security could prevent us from effectively operating our business.

We are at risk for interruptions, outages and breaches of: operational and manufacturing systems, including business, financial, accounting, product development, data processing or production processes, owned by us or our third-party vendors or suppliers; facility security systems, owned by us or our third-party vendors or suppliers; in-product technology owned by us or our third-party vendors or suppliers; the integrated software in our lidar solutions; or customer or driver data that we process or our third-party vendors or suppliers process on our behalf. Such cyber incidents could materially disrupt operational systems and shipment of parts or products or result in a lockout of our operational systems; result in loss of intellectual property, trade secrets or other proprietary or competitively sensitive information; compromise certain information of customers, employees, suppliers, drivers or others; jeopardize the security of our facilities; or affect the performance of in-product technology and the integrated software in our lidar solutions. A cyber incident could be caused by disasters, insiders (through inadvertence or with malicious intent) or malicious third parties (including nation-states or nation-state supported actors) using sophisticated, targeted methods to circumvent firewalls, encryption and other security defenses, including hacking, fraud, trickery or other forms of deception. The techniques used by cyber attackers change frequently and may be difficult to detect for long periods of time. Although we maintain information technology measures designed to protect us against intellectual property theft, data breaches and other cyber incidents, such measures will require updates and improvements, and we cannot guarantee that such measures will be adequate to detect, prevent or mitigate cyber incidents.

Our cybersecurity controls and systems are young and still maturing. The implementation, maintenance, segregation and improvement of these systems requires significant management time, personnel, support and cost. Moreover, there are inherent risks associated with developing, improving, expanding and updating current systems, including the disruption of our data management, procurement, production execution, finance, supply chain and sales and service processes. These risks may affect our ability to manage our data and inventory, procure parts or supplies or produce, sell, deliver and service our solutions, adequately protect our intellectual property or achieve and maintain compliance with, or realize available benefits under, applicable laws, regulations and contracts. We cannot be sure that the systems upon which we rely, including those of our third-party vendors or suppliers, will be effectively implemented, maintained or expanded as planned. If we do not successfully implement, maintain or expand these systems as planned, our operations may be disrupted, our ability to accurately and timely report our financial results could be impaired, and deficiencies may arise in our internal control over financial reporting, which may impact our ability to certify our financial results. Moreover, our proprietary information or intellectual property could be

compromised or misappropriated and our reputation may be adversely affected. If these systems do not operate as we expect them to, we may be required to expend significant resources to make corrections or find alternative sources for performing these functions.

A significant cyber incident could impact production capability, harm our reputation, cause us to breach our contracts with other parties or subject us to regulatory actions or litigation, any of which could materially affect our business, prospects, financial condition and operating results. In addition, our insurance coverage for cyber-attacks may not be sufficient to cover all the losses we may experience as a result of a cyber incident.

Legal and Regulatory Risks Related to Our Business

We are subject to governmental export and import control laws and regulations. Our failure to comply with these laws and regulations could have an adverse effect on our business, prospects, financial condition and results of operations.

Our products and solutions are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations and various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls. U.S. export control laws and regulations and economic sanctions prohibit the shipment of certain products and services to U.S. embargoed or sanctioned countries, governments and persons. In addition, complying with export control and sanctions regulations for a particular sale may be time-consuming and result in the delay or loss of sales opportunities. Exports of our products and technology must be made in compliance with these laws and regulations. If we fail to comply with these laws and regulations, we and certain of our employees could be subject to substantial civil or criminal penalties, including the possible loss of export or import privileges, fines, which may be imposed on us and responsible employees or managers and, in extreme cases, the incarceration of responsible employees or managers.

Changes to trade policy, tariffs and import/export regulations may have a material adverse effect on our business, financial condition and results of operations.

Geopolitical tensions and conflicts worldwide, including but not limited to China, may result in changing regulatory requirements, trade policies, export controls, import duties and economic disruptions that could impact our operating strategies in the territories or countries where we currently purchase our components, sell our products or conduct our business. The increasing focus on the strategic importance of autonomous vehicles, artificial intelligence ("AI") technologies, and advanced semiconductors may result in additional regulatory restrictions that target products and services capable of enabling or facilitating advanced vehicle automation systems or AI systems, including some or all of our product and service offerings. Such restrictions could include additional unilateral or multilateral export controls on certain products or technology, including but not limited to AI technologies and advanced semiconductors, and include recent U.S. recent restrictions on advanced semiconductor trade to China and China restriction on the collection and use of mapping data, which may be important for automated vehicle software development. As geopolitical tensions have increased, products associated with autonomous vehicles and AI, are increasingly the focus of export control restrictions proposed by stakeholders in the U.S. and its allies, and it is likely that additional unilateral or multilateral controls will be adopted. Such controls may be very broad in scope and application, prohibit us from exporting our products to any or all customers in one or more markets, including but not limited to China and could negatively and materially impact our business, revenue, and financial results. Furthermore, disruption to worldwide semiconductor supply, including non-advanced semiconductors, has and may continue to affect production of vehicles.

The U.S. has recently instituted or proposed changes in trade policies that include the negotiation or termination of trade agreements, the imposition of higher tariffs on imports into the U.S., economic sanctions on individuals, corporations or countries, and other government regulations affecting trade between the U.S. and other countries where we conduct our business. Increasing use of economic sanctions may impact demand for our products or services, negatively impacting our business and financial results. Additional export restrictions may not only impact our ability to serve overseas markets, but also provoke responses from foreign governments, including China, that negatively impact our supply chain or our ability to provide our products and services to customers in all markets worldwide, which could also materially affect our business, financial condition and results of operations.

As a result of these developments, there may be greater restrictions and economic disincentives on international trade that could adversely affect our business. For example, such changes could adversely affect the automotive market, our ability to access key components or raw materials needed to manufacture our products (including, but not limited to, rare-earth metals), our ability to sell our products to customers outside of the U.S. and the demand for our products. It may be time-consuming and expensive for us to alter our business operations to adapt to or comply with any such changes, and any failure to do so could have a material adverse effect on our business, financial condition and results of operations.

We have in the past and may become involved in legal and regulatory proceedings and commercial or contractual disputes, which could have an adverse effect on our profitability and consolidated financial position.

We may be, from time to time, involved in litigation, regulatory proceedings and commercial or contractual disputes that may be significant. These matters may include, without limitation, disputes with our suppliers and customers, intellectual property claims, stockholder litigation, government investigations, class action lawsuits, personal injury claims, environmental issues, customs and value-added tax disputes and employment and tax issues. In addition, we have in the past and could face in the future a variety of labor and employment claims against us, which could include but is not limited to general discrimination, wage and hour, privacy, ERISA or disability claims. In such matters, government agencies or private parties may seek to recover from us very large, indeterminate amounts in penalties or monetary damages (including, in some cases, treble or punitive damages) or seek to limit our operations in some way. These types of lawsuits could require significant management time and attention or could involve substantial legal liability, adverse regulatory outcomes, and/or substantial expenses to defend. Often these cases raise complex factual and legal issues and create risks and uncertainties. No assurances can be given that any proceedings and claims will not have a material adverse impact on our operating results and consolidated financial position or that our established reserves or our available insurance will mitigate this impact.

We are subject to, and must remain in compliance with, numerous laws and governmental regulations concerning the manufacturing, use, distribution and sale of our products. Some of our customers also require that we comply with their own unique requirements relating to these matters.

We manufacture and sell products that contain electronic components, and such components may contain materials that are subject to government regulation in both the locations where we manufacture and assemble our products, as well as the locations where we sell our products. For example, certain laws or regulations limit the use of restricted materials or materials from certain regions, such as EU Registration, Evaluation, Authorisation and Restriction of Chemicals and the U.S. Toxic Substances Control Act and those that relate to conflict minerals or forced labor. Since we operate on a global basis, this is a complex process which requires continual monitoring of regulations and an ongoing compliance process to ensure that we and our suppliers are in compliance with existing regulations in each market where we operate. In addition, as a lidar technology company, we are subject to the Electronic Product Radiation Control Provisions of the Federal Food, Drug, and Cosmetic Act. These requirements are enforced by the FDA. Electronic product radiation includes laser technology. Regulations governing these products are intended to protect the public from hazardous or unnecessary exposure. Manufacturers are required to certify in product labeling and reports to the FDA that their products comply with applicable performance standards as well as maintain manufacturing, testing, and distribution records for their products. Failure to comply with these requirements could result in enforcement action by the FDA, which could require us to cease distribution of our products, recall or remediate products already distributed to customers, or subject us to FDA enforcement.

If there is an unanticipated new regulation that significantly impacts our use and sourcing of various components or requires more expensive components, that regulation could materially adversely affect our business, results of operations and financial condition.

Our products are used for autonomous driving and ADAS applications, which are subject to complicated regulatory schemes that vary from jurisdiction to jurisdiction. These are rapidly evolving areas where new regulations could impose limitations on the use of lidar generally or our products specifically, or may fail to support the benefits to safety of lidar-based driver assistance and crash avoidance technology. If we fail to adhere to these new regulations or fail to continually monitor the updates, we may be subject to litigation, loss of customers or negative publicity and our business, results of operations and financial condition will be adversely affected.

We are subject to various environmental laws and regulations that could impose substantial costs upon us and cause delays in building our production facilities.

Concerns over environmental pollution and climate change have produced significant legislative and regulatory efforts on a global basis, and we believe this will continue both in scope and in the number of countries participating. In addition, as climate change issues become more prevalent, foreign, federal, state and local governments and our customers have been responding to these issues. The increased focus on environmental sustainability may result in new regulations and customer requirements, or changes in current regulations and customer requirements, which could materially adversely impact our business, results of operations and financial condition. If we are unable to effectively manage real or perceived issues, including concerns about environmental impacts or similar matters, sentiments toward us or our products could be negatively impacted, and our business, results of operations or financial condition could suffer.

Our operations are and will be subject to international, federal, state and local environmental laws and regulations, and such laws and regulations could directly increase the cost of energy, which may have an effect on the way we manufacture products or utilize energy to produce our products. In addition, any new regulations or laws in the environmental area might increase the cost of raw materials or key components we use in our products. Environmental regulations require us to reduce

product energy usage, monitor and exclude an expanding list of restricted substances and to participate in required recovery and recycling of our products. Environmental and health and safety laws and regulations can be complex, and we have limited experience complying with them. Capital and operating expenses needed to comply with environmental laws and regulations can be significant, and violations may result in substantial fines and penalties, third-party damages, suspension of production or a cessation of our operations. Contamination at properties we operate, we formerly operated or to which hazardous substances were sent by us, may result in liability for us under environmental laws and regulations, including, but not limited to, the Comprehensive Environmental Response, Compensation and Liability Act, which can impose liability for the full amount of remediation-related costs without regard to fault, for the investigation and cleanup of contaminated soil and ground water, for building contamination and impacts to human health and for damages to natural resources. The costs of complying with environmental laws and regulations and any claims concerning noncompliance, or liability with respect to contamination in the future, could have a material adverse effect on our financial condition or operating results. We may face unexpected delays in obtaining the required permits and approvals in connection with our planned production facilities that could require significant time and financial resources and delay our ability to operate these facilities, which would adversely impact our business, prospects, financial condition and operating results.

Our business may be adversely affected by changes in regulations applicable to the automotive industry and laser market or concerns that drive further regulation of the automobile and laser market.

Government product safety regulations are an important factor for our business. Historically, these regulations have imposed ever-more stringent safety regulations and reporting requirements for vehicles and laser products. These safety regulations often require, or customers demand that, vehicles have more safety features per vehicle and more advanced safety products.

While we believe increasing automotive and laser safety standards will present a market opportunity for our products, government safety regulations are subject to change based on a number of factors that are not within our control, including new scientific or technological data, adverse publicity regarding the industry recalls and safety risks of autonomous driving and ADAS, accidents involving our products, domestic and foreign political developments or considerations, and litigation relating to our products and our competitors' products. Changes in government regulations, especially in the autonomous driving and ADAS industries, could adversely affect our business. If government priorities shift and we are unable to adapt to changing regulations, our business may be materially and adversely affected.

Federal and local regulators impose more stringent compliance and reporting requirements in response to product recalls and safety issues in the automotive and laser industry. As cars that carry our sensors go into production, the obligations of complying with safety regulations and reporting requirements could increase and it could require increased resources and adversely affect our business.

In addition, as vehicle regulators globally continue to consider new and enhanced emissions requirements, including electrification, to meet environmental and economic needs as well as pursue new safety standards to address emerging traffic risks, OEMs may need to dedicate technology and cost additions to new vehicle designs to meet these emissions and safety requirements and, as a result, postpone the consumer cost pressures of new autonomous and ADAS features.

Failures, or perceived failures, to comply with privacy, data protection, and information security requirements in the variety of jurisdictions in which we operate may adversely impact our business, and such legal requirements are evolving, uncertain and may require improvements in, or changes to, our policies and operations.

Our current and potential future operations and sales subject us to laws and regulations addressing privacy and the collection, use, storage, disclosure, transfer and protection of a variety of types of data. For example, the European Commission has adopted the General Data Protection Regulation and California recently enacted the California Consumer Privacy Act of 2018, both of which provide for potentially material penalties for non-compliance. These regimes may, among other things, impose data security requirements, disclosure requirements, and restrictions on data collection, uses, and sharing that may impact our operations and the development of our business. While, generally, we do not have access to, collect, store, process, or share information collected by our solutions unless our customers choose to proactively provide such information to us, our products may evolve both to address potential customer requirements or to add new features and functionality. Therefore, the full impact of these privacy regimes on our business is rapidly evolving across jurisdictions and remains uncertain at this time.

We may also be affected by cyber-attacks and other means of gaining unauthorized access to our products, systems, and data. For instance, cyber criminals or insiders may target us or third parties with which we have business relationships to obtain data, or in a manner that disrupts our operations or compromises our products or the systems into which our products are integrated.

We are assessing the continually evolving privacy and data security regimes and measures we believe are appropriate in response. Since these data security regimes are evolving, uncertain and complex, especially for a global business like ours, we may need to update or enhance our compliance measures as our products, markets and customer demands further develop, and

these updates or enhancements may require implementation costs. In addition, we may not be able to monitor and react to all developments in a timely manner. The compliance measures we do adopt may prove ineffective. Any failure, or perceived failure, by us to comply with current and future regulatory or customer-driven privacy, data protection, and information security requirements, or to prevent or mitigate security breaches, cyber-attacks, or improper access to, use of, or disclosure of data, or any security issues or cyber-attacks affecting us, could result in significant liability, costs (including the costs of mitigation and recovery), and a material loss of revenue resulting from the adverse impact on our reputation and brand, loss of proprietary information and data, disruption to our business and relationships, and diminished ability to retain or attract customers and business partners. Such events may result in governmental enforcement actions and prosecutions, private litigation, fines and penalties or adverse publicity, and could cause customers and business partners to lose trust in us, which could have an adverse effect on our reputation and business.

Regulations related to conflict minerals may cause us to incur additional expenses and could limit the supply and increase the costs of certain metals used in the manufacturing of our products.

We are subject to the requirements under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Dodd-Frank Act, that will require us to determine, disclose and report whether our products contain conflict minerals. The implementation of these requirements could adversely affect the sourcing, availability and pricing of the materials used in the manufacture of components used in our products. In addition, we will incur additional costs to comply with the disclosure requirements, including costs related to conducting diligence procedures to determine the sources of conflict minerals that may be used in or necessary to the production of our products and, if applicable, potential changes to products, processes or sources of supply as a consequence of such verification activities. It is also possible that our reputation may be adversely affected if we determine that certain of our products contain minerals not determined to be conflict-free or if we are unable to alter our products, processes or sources of supply to avoid use of such materials.

Risks Related to Our Intellectual Property

Despite the actions we are taking to defend and protect our intellectual property, we may not be able to adequately protect or enforce our intellectual property rights or prevent unauthorized parties from copying or reverse engineering our solutions. Our efforts to protect and enforce our intellectual property rights and prevent third parties from violating our rights may be costly.

The success of our products and our business depends in part on our ability to obtain patents and other intellectual property rights and maintain adequate legal protection for our products in the United States and other international jurisdictions. We rely on a combination of patent, service mark, trademark and trade secret laws, as well as confidentiality procedures and contractual restrictions, to establish and protect our proprietary rights, all of which provide only limited protection.

We cannot be assured that any patents will be issued with respect to our currently pending patent applications or that any trademarks will be registered with respect to our currently pending applications in a manner that gives us adequate defensive protection or competitive advantages, if at all, or that any patents issued to us or any trademarks registered by us will not be challenged, invalidated or circumvented. We have filed for patents and trademarks in the United States and in certain international jurisdictions, but such protections may not be available in all countries in which we operate or in which we seek to enforce our intellectual property rights, or may be difficult to enforce in practice. Our currently-issued patents and trademarks and any patents and trademarks that may be issued or registered, as applicable, in the future with respect to pending or future applications may not provide sufficiently broad protection or may not prove to be enforceable in actions against alleged infringers. We cannot be certain that the steps we have taken will prevent unauthorized use of our technology or the reverse engineering of our technology. Moreover, others may independently develop technologies that are competitive to us or infringe our intellectual property.

Protecting against the unauthorized use of our intellectual property, products and other proprietary rights is expensive and difficult, particularly internationally. We believe that our patents are foundational in the area of lidar products and intends to enforce the intellectual property portfolio we have built over the years. Unauthorized parties may attempt to copy or reverse engineer our lidar technology or certain aspects of our solutions that we consider proprietary. Litigation may be necessary in the future to enforce or defend our intellectual property rights, to prevent unauthorized parties from copying or reverse engineering our solutions, to determine the validity and scope of the proprietary rights of others or to block the importation of infringing products into the United States.

Any such litigation, whether initiated by us or a third party, could result in substantial costs and diversion of management resources, either of which could adversely affect our business, operating results and financial condition. Even if we obtain favorable outcomes in litigation, we may not be able to obtain adequate remedies, especially in the context of unauthorized parties copying or reverse engineering our solutions.

Further, many of our current and potential competitors have the ability to dedicate substantially greater resources to defending intellectual property infringement claims and to enforcing their intellectual property rights than we have. Attempts to enforce our rights against third parties could also provoke these third parties to assert their own intellectual property or other rights against us or result in a holding that invalidates or narrows the scope of our rights, in whole or in part. Effective patent, trademark, service mark, copyright and trade secret protection may not be available in every country in which our products are available and competitors based in other countries may sell infringing products in one or more markets. Failure to adequately protect our intellectual property rights could result in our competitors offering similar products, potentially resulting in the loss of some of our competitive advantage and a decrease in our revenue, which would adversely affect our business, operating results, financial condition and prospects.

Third-party claims that we are infringing intellectual property, whether successful or not, could subject us to costly and time-consuming litigation or expensive licenses, and our business could be adversely affected.

Although we hold key patents related to our products, a number of companies, both within and outside of the lidar industry, hold other patents covering aspects of lidar products. In addition to these patents, participants in this industry typically also protect their technology, especially embedded software, through copyrights and trade secrets. As a result, there is frequent litigation based on allegations of infringement, misappropriation or other violations of intellectual property rights. We have received, and in the future may receive, inquiries from other intellectual property holders and may become subject to claims that we infringe their intellectual property rights, particularly as we expand our presence in the market, expand to new use cases and face increasing competition. In addition, parties may claim that the names and branding of our products infringe their trademark rights in certain countries or territories. If such a claim were to prevail, we may have to change the names and branding of our products in the affected territories and we could incur other costs.

We currently have a number of agreements in effect pursuant to which we have agreed to defend, indemnify and hold harmless our customers, suppliers, and channel partners and other partners from damages and costs which may arise from the infringement by our products of third-party patents or other intellectual property rights. The scope of these indemnity obligations varies, but may, in some instances, include indemnification for damages and expenses, including attorneys' fees. Our insurance may not cover all intellectual property infringement claims. A claim that our products infringe a third party's intellectual property rights, even if untrue, could adversely affect our relationships with our customers, may deter future customers from purchasing our products and could expose us to costly litigation and settlement expenses. Even if we are not a party to any litigation between a customer and a third party relating to infringement by our products, an adverse outcome in any such litigation could make it more difficult for us to defend our products against intellectual property infringement claims in any subsequent litigation in which we are a named party. Any of these results could adversely affect our brand and operating results.

Our defense of intellectual property rights claims brought against us or our customers, suppliers and channel partners, with or without merit, could be time-consuming, expensive to litigate or settle, divert management resources and attention and force us to acquire intellectual property rights and licenses, which may involve substantial royalty or other payments and may not be available on acceptable terms or at all. Further, a party making such a claim, if successful, could secure a judgment that requires us to pay substantial damages or obtain an injunction. An adverse determination also could invalidate our intellectual property rights and adversely affect our ability to offer our products to our customers and may require that we procure or develop substitute products that do not infringe, which could require significant effort and expense. Any of these events could adversely affect our business, operating results, financial condition and prospects.

Our intellectual property applications for registration may not issue or be registered, which may have a material adverse effect on our ability to prevent others from commercially exploiting products similar to ours.

We cannot be certain that we are the first inventor of the subject matter to which we have filed a particular patent application, or if we are the first party to file such a patent application. If another party has filed a patent application to the same subject matter as we have, we may not be entitled to the protection sought by the patent application. We also cannot be certain whether the claims included in a patent application will ultimately be allowed in the applicable issued patent. Further, the scope of protection of issued patent claims is often difficult to determine. As a result, we cannot be certain that the patent applications that we file will issue, or that our issued patents will afford protection against competitors with similar technology. In addition, our competitors may design around our issued patents, which may adversely affect our business, prospects, financial condition and operating results.

In addition to patented technology, we rely on our unpatented proprietary technology, trade secrets, processes and know-how.

We rely on proprietary information (such as trade secrets, know-how and confidential information) to protect intellectual property that may not be patentable or subject to copyright, trademark, trade dress or service mark protection, or that we believe is best protected by means that do not require public disclosure. We generally seek to protect this proprietary information by

entering into confidentiality agreements, or consulting services or employment agreements that contain non-disclosure and non-use provisions with our employees, consultants, contractors and third parties. However, we may fail to enter into the necessary agreements, and even if entered into, these agreements may be breached or may otherwise fail to prevent disclosure, third-party infringement or misappropriation of our proprietary information, may be limited as to their term and may not provide an adequate remedy in the event of unauthorized disclosure or use of proprietary information. We have limited control over the protection of trade secrets used by our current or future manufacturing partners and suppliers and could lose future trade secret protection if any unauthorized disclosure of such information occurs. In addition, our proprietary information may otherwise become known or be independently developed by our competitors or other third parties. To the extent that our employees, consultants, contractors, advisors and other third parties use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain protection for our proprietary information could adversely affect our competitive business position. Furthermore, laws regarding trade secret rights in certain markets where we operate may afford little or no protection to our trade secrets.

We also rely on physical and electronic security measures to protect our proprietary information, but we cannot provide assurance that these security measures will not be breached or provide adequate protection for our property. There is a risk that third parties may obtain and improperly utilize our proprietary information to our competitive disadvantage. We may not be able to detect or prevent the unauthorized use of such information or take appropriate and timely steps to enforce our intellectual property rights.

We may be subject to damages resulting from claims that we or our employees have wrongfully used or disclosed alleged trade secrets of our employees' former employers.

We may be subject to claims that we or our employees have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of an employee's former employers. Litigation may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. A loss of key personnel or their work product could hamper or prevent our ability to commercialize our products, which could severely harm our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and demand on management resources.

We use certain software and data governed by open-source licenses, which under certain circumstances could adversely affect our business, results of operations and financial condition.

Certain of our software and data, as well as that of our customers and vendors, may be derived from or otherwise incorporate so-called "open source" software and data that is generally made available to the public by its authors and/or other third parties. Some open-source software is made available under licenses that impose certain obligations on us regarding modifications or derivative works we create based upon the open-source software. These obligations may require us to make source code for the derivative works available to the public and/or license such derivative works under a particular type of license, rather than the forms of license we customarily use to protect our intellectual property. Additionally, if we combine our proprietary software with open-source software in certain manners we could be required to release the source code of our proprietary software or to make our proprietary software available under open-source licenses to third parties at little or no cost or on unfavorable license terms. In the event that the copyright holder of, or other third party that distributes, open-source software alleges that we have not complied with the terms of an open-source license, we could incur significant legal costs defending ourselves against such allegations. If such claims are successful, we could be subject to significant damages, required to release the source code that we developed using that open-source software to the public, enjoined from distributing our software and/or required to take other actions that could adversely affect our business, results of operations and financial condition.

While we take steps to monitor the use of open-source software in our solutions, processes and technology and try to ensure that no open-source software is used in such a way as to require us to disclose the source code to the related product, processes, or technology when we do not wish to do so, such use could inadvertently occur. Additionally, if a third-party software provider has incorporated certain types of open source software into software we license from such third party for our solutions, processes, or technology, we could, under certain circumstances, be required to disclose the source code to our solutions, processes, or technology. This could harm our intellectual property position and adversely affect our business, results of operations and financial condition.

Further, the use of open-source software can lead to vulnerabilities that may make our software susceptible to attack, and although some open-source vendors provide warranty and support agreements, it is common for such software to be available "as is" with no warranty, indemnity, or support. Although we monitor our use of such open-source code to avoid subjecting our solutions to unintended conditions, such use, under certain circumstances, could materially adversely affect our business, financial condition and operating results and cash flow, including if we are required to take remedial action that may divert resources away from our development efforts.

Risks Related to Ownership of Our Shares

Our Second Amended and Restated Certificate of Incorporation provides, subject to limited exceptions, that the Court of Chancery of the State of Delaware (the “Chancery Court”) will be the sole and exclusive forum for certain stockholder litigation matters, which could limit our stockholders’ ability to obtain a chosen judicial forum for disputes with us or our directors, officers, employees or stockholders.

Our Second Amended and Restated Certificate of Incorporation requires, to the fullest extent permitted by law, that derivative actions brought in our name, actions against directors, officers and employees for breach of fiduciary duty and other similar actions may be brought in the Chancery Court or, if that court lacks subject matter jurisdiction, another federal or state court situated in the State of Delaware. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock will be deemed to have notice of and consented to the forum provisions in our Second Amended and Restated Certificate of Incorporation. In addition, our Second Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws provide that the federal district courts of the United States shall be the exclusive forum for the resolution of any suit brought to enforce a duty or liability created by the Securities Act or the Exchange Act or any other claim for which the U.S. federal courts have exclusive jurisdiction. The Second Amended and Restated Certificate of Incorporation further provides that, unless we consent in writing to the selection of an alternative forum, to the fullest extent permitted by law, the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act.

In March 2020, the Delaware Supreme Court issued a decision in *Salzburg et al. v. Sciabacucchi*, which found that an exclusive forum provision providing for claims under the Securities Act to be brought in federal court is facially valid under Delaware law. We intend to enforce this forum provision, but we do not know whether courts in other jurisdictions will agree with this decision or enforce it.

The choice of forum providing that a state or federal court located within the state of Delaware will be the exclusive forum for substantially all disputes between us and our stockholders may limit a stockholder’s ability to bring a claim in a judicial forum of its choosing for disputes with us or any of our directors, officers, other employees or stockholders, which may discourage lawsuits with respect to such claims. If any other court were to find the choice of forum provision contained in our Second Amended and Restated Certificate of Incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, operating results and financial condition.

Our charter documents and Delaware law could prevent a takeover that stockholders consider favorable and could also reduce the market price of our stock.

Our Second Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws contain provisions that could delay or prevent a change in control. These provisions could also make it more difficult for stockholders to elect directors and take other corporate actions. These provisions include:

- providing for a classified board of directors with staggered, three-year terms;
- authorizing our Board to issue Preferred Stock with voting or other rights or preferences that could discourage a takeover attempt or delay changes in control;
- prohibiting cumulative voting in the election of directors;
- providing that vacancies on our Board may be filled only by a majority of directors then in office, even though less than a quorum;
- prohibiting the adoption, amendment or repeal of the Amended and Restated Bylaws or the repeal of the provisions of our Second Amended and Restated Certificate of Incorporation regarding the election and removal of directors without the required approval of at least two-thirds of the shares entitled to vote at an election of directors;
- prohibiting stockholder action by written consent;
- limiting the persons who may call special meetings of stockholders; and
- requiring advance notification of stockholder nominations and proposals.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our Board, which is responsible for appointing the members of our management. In addition, we are governed by the provisions of Section 203 of the Delaware General Corporation Law (the “DGCL”). These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time without the consent of our Board.

These and other provisions in our Second Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws and under Delaware law could discourage potential takeover attempts, reduce the price investors might be willing to pay in the future for shares of Class A common stock and result in the market price of Class A common stock being lower than it would be without these provisions.

Claims for indemnification by our directors and officers may reduce our available funds to satisfy successful third-party claims against us and may reduce the amount of money available to us.

Our Second Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws provide that we will indemnify our directors and officers, in each case to the fullest extent permitted by Delaware law.

In addition, as permitted by Section 145 of the DGCL, the Amended and Restated Bylaws and the indemnification agreements that we have entered into with our directors and officers provide that:

- we will indemnify our directors and officers for serving us in those capacities or for serving other business enterprises at our request, to the fullest extent permitted by Delaware law. Delaware law provides that a corporation may indemnify such person if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the registrant and, with respect to any criminal proceeding, had no reasonable cause to believe such person's conduct was unlawful;
- we may, in our discretion, indemnify employees and agents in those circumstances where indemnification is permitted by applicable law;
- we will be required to advance expenses, as incurred, to our directors and officers in connection with defending a proceeding, except that such directors or officers shall undertake to repay such advances if we are ultimately determined that such person is not entitled to indemnification;
- we will not be obligated pursuant to our Amended and Restated Bylaws to indemnify a person with respect to proceedings initiated by that person against us or our other indemnitees, except with respect to proceedings authorized by our Board or brought to enforce a right to indemnification;
- the rights conferred in the Amended and Restated Bylaws are not exclusive, and we are authorized to enter into indemnification agreements with our directors, officers, employees and agents and to obtain insurance to indemnify such persons; and
- we may not retroactively amend our Amended and Restated Bylaw provisions to reduce our indemnification obligations to directors, officers, employees and agents.

The dual class structure of our Common Stock has the effect of concentrating voting control with Austin Russell, our Founder, President and Chief Executive Officer. This will limit or preclude your ability to influence corporate matters, including the outcome of important transactions, including a change in control.

Shares of our Class B common stock, \$0.0001 par value per share ("Class B common stock"), have 10 votes per share, while shares of Class A common stock have one vote per share. Austin Russell, our Founder, President and Chief Executive Officer, holds all of the issued and outstanding shares of Class B common stock. Accordingly, Mr. Russell held approximately 78.3% of the voting power of our outstanding capital stock as of December 31, 2022 and will be able to control matters submitted to our stockholders for approval, including the election of directors, amendments of our organizational documents and any merger, consolidation, sale of all or substantially all of our assets or other major corporate transactions. Mr. Russell may have interests that differ from the interests of other stockholders of the Company and may vote in a way with which other stockholders of the Company disagree and which may be adverse to other stockholders' interests. This concentrated control may have the effect of delaying, preventing or deterring a change in control of us, could deprive our stockholders of an opportunity to receive a premium for their capital stock as part of a sale of us, and might ultimately affect the market price of shares of Class A common stock.

In connection with the execution of the Merger Agreement, Austin Russell entered into a voting agreement, dated as of August 24, 2020, with Gores (the "Voting Agreement"). Under the Voting Agreement, Mr. Russell agreed that, following the consummation of the prior business combination between Legacy Luminar and Gores Metropoulos, Inc., solely if he is involuntarily terminated from his position as the Chief Executive Officer of the Company as a result of his conviction of, or pleading guilty or nolo contendere to, a felony that has a material negative impact on the Company, at any meeting of the stockholders of the Company at which directors are to be elected following the consummation of the Business Combination, Mr. Russell, or any of his permitted successors or assigns, will not vote more than 10% of the Class B common stock he or they beneficially own in any director election.

We are a controlled company within the meaning of The Nasdaq Stock Market listing standards, and, as a result, qualify for exemptions from certain corporate governance requirements that provide protection to stockholders of other companies. To the extent we utilize any of these exemptions, you will not have the same protections afforded to stockholders of companies that are subject to such requirements. We do not currently intend to rely on the exemptions afforded to controlled companies at this time.

So long as more than 50% of the voting power for the election of our directors is held by an individual, a group or another company, we will qualify as a “controlled company” under The Nasdaq Stock Market listing requirements. Austin Russell controls a majority of the voting power of our outstanding capital stock. As a result, we are a “controlled company” under the Nasdaq Stock Market rules. As a controlled company, we are exempt from certain Nasdaq corporate governance requirements, including those that would otherwise require our Board to have a majority of independent directors and require that we establish a compensation committee comprised entirely of independent directors, or otherwise ensure that the compensation of our executive officers and nominees for directors are determined or recommended to our Board by the independent members of our Board. While we do not currently rely on any of these exemptions, we will be entitled to do so for as long as we are considered a “controlled company,” and to the extent we rely on one or more of these exemptions, holders of our capital stock will not have the same protections afforded to stockholders of companies that are subject to all of Nasdaq’s corporate governance requirements.

Our dual class structure may depress the trading price of the Class A common stock.

Our dual class structure may result in a lower or more volatile market price of the Class A common stock or in adverse publicity or other adverse consequences due to disfavor of a dual class structure by certain organizations. For example, certain index providers have announced restrictions on including companies with multiple-class share structures in certain of their indexes. S&P Dow Jones and FTSE Russell had previously announced changes to their eligibility criteria for inclusion of shares of public companies on certain indices, including the S&P 500, pursuant to which companies with multiple classes of shares of common stock are excluded. In addition, several stockholder advisory firms have policies that oppose the use of multiple class structures. As a result, the dual class structure of our Common Stock may cause stockholder advisory firms to publish negative commentary about our corporate governance practices or otherwise seek to cause us to change our capital structure. Any such exclusion from indices or any actions or publications by stockholder advisory firms critical of our corporate governance practices or capital structure could adversely affect the value and trading market of the Class A common stock.

The market price and trading volume of Class A common stock is volatile and could decline significantly.

The market price of our Class A common stock has been and is expected to continue to be volatile and has recently experienced declines. In addition, the trading volume of our Class A common stock may fluctuate and cause significant price variations to occur. We cannot assure you that the market price of Class A common stock will not fluctuate widely or decline significantly in the future in response to a number of factors, including, among others, the following:

- the realization of any of the risk factors presented in this Annual Report;
- actual or anticipated differences in our estimates, or in the estimates of analysts, for our revenues, Adjusted EBITDA, results of operations, level of indebtedness, liquidity or financial condition;
- additions and departures of key personnel;
- failure to comply with the requirements of Nasdaq, Sarbanes-Oxley Act or other laws or regulations;
- future issuances, sales, resales or repurchases or anticipated issuances, sales, resales or repurchases, of our securities;
- publication of research reports about us;
- the performance and market valuations of other similar companies;
- commencement of, or involvement in, litigation involving us;
- broad disruptions in the financial markets, including sudden disruptions in the credit markets;
- speculation in the press or investment community;
- actual, potential or perceived control, accounting or reporting problems;
- changes in accounting principles, policies and guidelines; and
- other events or factors, including those resulting from infectious diseases, health epidemics and pandemics (including the ongoing COVID-19 public health emergency), natural disasters, war, acts of terrorism or responses to these events.

In the past, securities class-action litigation has often been instituted against companies following periods of volatility in the market price of their shares. This type of litigation could result in substantial costs and divert our management's attention and resources, which could have a material adverse effect on us.

If securities or industry analysts do not publish or cease publishing research or reports about us, our business, or our market, or if they change their recommendations regarding our Class A common stock adversely, then the price and trading volume of our Class A common stock could decline.

The trading market for our Class A common stock will be influenced by the research and reports that industry or securities analysts may publish about us, our business, our market, or our competitors. Securities and industry analysts do not currently, and may never, publish research on us. If no securities or industry analysts commence coverage of us, our stock price and trading volume would likely be negatively impacted. If any of the analysts who may cover us change their recommendation regarding our stock adversely, or provide more favorable relative recommendations about our competitors, the price of our Class A common stock would likely decline. If any analyst who may cover us were to cease coverage of us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our stock price or trading volume to decline.

Future issuances of debt securities and equity securities, including from the exercise of warrants for our Class A common stock, and issuances to customers, vendors or partners, may adversely affect us, including the market price of the Class A common stock and may be dilutive to existing stockholders.

In the future, we may require additional capital to respond to technological advancements, competitive dynamics or technologies, customer demands, business opportunities, challenges, acquisitions or unforeseen circumstances and we may determine to engage in equity or debt financings or enter into credit facilities for other reasons. Securities and agreements involving the issuance of debt will generally rank senior to the Class A common stock and have priority upon liquidation. Such securities also may be governed by an indenture or other instrument containing covenants restricting the Company's operating flexibility. Additionally, any equity securities or convertible or exchangeable securities that we issue in the future may have rights, preferences and privileges more favorable than those of the Class A common stock. In addition, in order to further business relationships with current or potential customers, vendors or partners, we may issue equity or equity-linked securities to such current or potential customers, vendors or partners. Because our decision to issue debt or equity in the future will depend on market conditions and other factors beyond our control, we cannot predict or estimate the amount, timing, nature or success of our future capital raising efforts. Sales of shares of Class A common stock in the public market or the perception that these sales or conversions might occur may depress the market price of Class A common stock and could impair our ability to raise capital through the sale of additional equity securities.

In addition, as of December 31, 2022, we had warrants to purchase an aggregate of 5.8 million shares of our Class A common stock outstanding. To the extent remaining warrants are exercised, additional shares of Class A common stock will be issued, which will result in dilution to the then-existing holders of Class A common stock and increase the number of shares eligible for resale in the public market. Sales of substantial numbers of such shares in the public market or the fact that such warrants may be exercised could adversely affect the market price of our Class A common stock.

Our failure to meet the continued listing requirements of Nasdaq could result in a delisting of our securities.

If we fail to satisfy the continued listing requirements of Nasdaq such as the corporate governance requirements or the minimum closing bid price requirement, Nasdaq may take steps to delist our securities. Such a delisting would likely have a negative effect on the price of the securities and would impair the ability of stockholders to sell or purchase their securities. 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 securities to become listed again, stabilize the market price or improve the liquidity of our securities, prevent our securities from dropping below the Nasdaq minimum bid price requirement or prevent future non-compliance with Nasdaq's listing requirements. Additionally, if our securities are not listed on, or become delisted from, Nasdaq for any reason, and are quoted on an inter-dealer automated quotation system for equity securities that is not a national securities exchange, the liquidity and price of our securities may be more limited than if we were quoted or listed on Nasdaq or another national securities exchange. You may be unable to sell your securities unless a market can be established or sustained.

Risks Related to Our Indebtedness

Our indebtedness and liabilities could limit the cash flow available for our operations, expose us to risks that could adversely affect our business, financial condition and results of operations and impair our ability to satisfy our obligations under the notes.

As of December 31, 2022, our total consolidated indebtedness was \$612.2 million, representing the Convertible Senior Notes, net of unamortized debt discount and issuance costs, finance leases and certain secured equipment loans. We may also

incur additional indebtedness to meet future financing needs. Our indebtedness could have significant negative consequences for our security holders and our business, results of operations and financial condition by, among other things:

- increasing our vulnerability to adverse economic and industry conditions;
- limiting our ability to obtain additional financing;
- requiring the dedication of a substantial portion of our cash flow from operations to service our indebtedness, which will reduce the amount of cash available for other purposes;
- limiting our flexibility to plan for, or react to, changes in our business;
- diluting the interests of our existing stockholders as a result of issuing shares of our Class A common stock upon conversion of the notes; and
- placing us at a possible competitive disadvantage with competitors that are less leveraged than us or have better access to capital.

Our business may not generate sufficient funds, and we may otherwise be unable to maintain sufficient cash reserves, to pay amounts due under our indebtedness, including the notes, and our cash needs may increase in the future. In addition, any future indebtedness that we may incur may contain, financial and other restrictive covenants that limit our ability to operate our business, raise capital or make payments under our other indebtedness. If we fail to comply with these covenants or to make payments under our indebtedness when due, then we would be in default under that indebtedness, which could, in turn, result in that and our other indebtedness becoming immediately payable in full.

We may be unable to raise the funds necessary to repurchase the notes for cash following a fundamental change, or to pay any cash amounts due upon conversion, and our other indebtedness may limit our ability to repurchase the notes or pay cash upon their conversion.

Noteholders may, subject to a limited exception, require us to repurchase their notes following a fundamental change at a cash repurchase price generally equal to the principal amount of the notes to be repurchased, plus accrued and unpaid interest, if any. In addition, upon conversion, we will satisfy part or all of our conversion obligation in cash unless we elect to settle conversions solely in shares of our Class A common stock. We may not have enough available cash or be able to obtain financing at the time we are required to repurchase the notes or pay any cash amounts due upon conversion. In addition, applicable law, regulatory authorities and the agreements governing any future indebtedness may restrict our ability to repurchase the notes or pay any cash amounts due upon conversion. Our failure to repurchase notes or to pay any cash amounts due upon conversion or when otherwise required will constitute a default under the indenture. A default under the indenture or the fundamental change itself could also lead to a default under agreements governing other indebtedness which we have incurred or may incur, which may result in that other indebtedness becoming immediately payable in full. We may not have sufficient funds to satisfy all amounts due under the other indebtedness and the notes.

The accounting method for the notes could adversely affect our reported financial condition and results.

In August 2020, the Financial Accounting Standards Board published an Accounting Standards Update, which we refer to as ASU 2020-06, to reduce the number of accounting models for convertible debt instruments. We early adopted ASU 2020-06, effective January 1, 2021. The elimination of the separate accounting described above to reduce the interest expense that we have recognized and expect to recognize in the future for the notes for accounting purposes. Under ASU 2020-06, the embedded conversion features are no longer separated from the host contract for convertible instruments with conversion features that are not required to be accounted for as derivatives under Topic 815, or that do not result in substantial premiums accounted for as paid-in capital. Consequently, the notes are accounted for as a single liability measured at amortized cost. Further, ASU 2020-06 eliminates the use of the treasury stock method for convertible instruments that can be settled in whole or in part with equity, and instead requires application of the “if-converted” method. Under that method, diluted earnings per share would generally be calculated assuming that all the notes were converted solely into shares of Class A common stock at the beginning of the reporting period, unless the result would be anti-dilutive. The application of the if-converted method may reduce our reported diluted earnings per share.

Furthermore, if any of the conditions to the convertibility of the notes is satisfied, then we may be required under applicable accounting standards to reclassify the liability carrying value of the notes as a current, rather than a long-term, liability. This reclassification could be required even if no noteholders convert their notes and could materially reduce our reported working capital.

The capped call transactions may affect the value of the notes and our Class A common stock.

In connection with the Convertible Senior Notes, we entered into privately negotiated capped call transactions with the option counterparties. The capped call transactions are expected generally to reduce the potential dilution to our Class A

common stock upon any conversion of the notes and/or offset any potential cash payments we are required to make in excess of the principal amount of converted notes, as the case may be, with such reduction and/or offset subject to a cap.

We have been advised that, in connection with establishing their initial hedges of the capped call transactions, the option counterparties or their respective affiliates entered into various derivative transactions with respect to our Class A common stock and/or purchased shares of our Class A common stock.

In addition, the option counterparties and/or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our Class A common stock and/or purchasing or selling our Class A common stock or other securities of ours in secondary market transactions following the pricing of the notes and from time to time prior to the maturity of the notes (and are likely to do so following any conversion of the notes, any repurchase of the notes by us on any fundamental change repurchase date, any redemption date or any other date on which the notes are retired by us, in each case if we exercise the relevant election to terminate the corresponding portion of the capped call transactions). This activity could also cause or avoid an increase or a decrease in the market price of our Class A common stock.

We are subject to counterparty risk with respect to the capped call transactions and an accelerated share repurchase program (the “ASR program”), and the capped call transactions and ASR program may not operate as planned.

The option counterparties are, and the ASR counterparty will be, financial institutions, and we will be subject to the risk that they might default under the capped call transactions or the ASR program. Our exposure to the credit risk of the option counterparties or ASR counterparty will not be secured by any collateral. Global economic conditions have from time to time resulted in the actual or perceived failure or financial difficulties of many financial institutions, including the bankruptcy filing by Lehman Brothers Holdings Inc. and its various affiliates. If an option counterparty or ASR counterparty becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at that time under our transactions with that option counterparty or the ASR counterparty. Our exposure will depend on many factors, but, generally, the increase in our exposure will be correlated with increases in the market price or the volatility of our Class A common stock. In addition, upon a default by an option counterparty or the ASR counterparty, we may suffer more dilution than we currently anticipate with respect to our Class A common stock. We can provide no assurances as to the financial stability or viability of any option counterparty or ASR counterparty.

In addition, the capped call transactions are complex, and they may not operate as planned. For example, the terms of the capped call transactions may be subject to adjustment, modification or, in some cases, renegotiation if certain corporate or other transactions occur. Accordingly, these transactions may not operate as we intend if we are required to adjust their terms as a result of transactions in the future or upon unanticipated developments that may adversely affect the functioning of the capped call transactions.

General Risks

Unanticipated changes in effective tax rates or adverse outcomes resulting from examination of our income or other tax returns could adversely affect our financial condition and results of operations.

We will be subject to income taxes in the United States and other jurisdictions, and our tax liabilities will be subject to the allocation of expenses in differing jurisdictions. Our future effective tax rates could be subject to volatility or adversely affected by a number of factors, including:

- changes in the valuation of our deferred tax assets and liabilities;
- expected timing and amount of the release of any tax valuation allowances;
- tax effects of stock-based compensation;
- costs related to intercompany restructurings;
- changes in tax laws, regulations or interpretations thereof;
- changes in accounting and tax standards or practices;
- changes in the composition of operating income by the taxing jurisdiction; or
- lower than anticipated future earnings in jurisdictions where we have lower statutory tax rates and higher than anticipated future earnings in jurisdictions where we have higher statutory tax rates.

In addition, we may be subject to audits of our income, sales and other transaction taxes by taxing authorities. Outcomes from these audits could have an adverse effect on our financial condition and results of operations.

We are subject to U.S. and foreign anti-corruption and anti-money laundering laws and regulations. We can face criminal liability and other serious consequences for violations, which can harm our business.

We are subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act and possibly other anti-bribery and anti-money laundering laws in countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors and other collaborators from authorizing, promising, offering or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors and other collaborators, even if we do not explicitly authorize or have actual knowledge of such activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm and other consequences.

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the “Tax Act”) was signed into law making significant changes to the U.S. Tax Code. In particular, sweeping changes were made to the U.S. taxation of foreign operations. Changes include, but are not limited to, a reduction to the corporate income tax rate, limiting interest deductions, adopting elements of a territorial tax system, assessing a repatriation tax or “toll-charge” on undistributed earnings and profits of U.S.-owned foreign corporations, and introducing certain anti-base erosion provisions, including a new minimum tax on global intangible low-taxed income (“GILTI”) and base erosion and anti-abuse tax (“BEAT”). The new legislation did not have a material impact on our provision for income taxes for 2020 and 2019, because we generated net tax losses and offset our deferred tax assets on the balance sheet with a full valuation allowance due to our current loss position and forecasted losses for the near future. The overall impact of this tax reform is uncertain, and our business and financial condition, including with respect to our non-U.S. operations, could be adversely affected.

In addition to the impact of the Tax Act on our federal taxes, the Tax Act may impact our taxation in other jurisdictions, including state income taxes. Additionally, other foreign governing bodies may enact changes to their tax laws in reaction to the Tax Act that could result in changes to our global tax position and materially adversely affect our business, results of operations and financial condition. Additionally, the Internal Revenue Service, (the “IRS”) and several foreign tax authorities have increasingly focused attention on intercompany transfer pricing with respect to sales of products and services and the use of intangibles. Tax authorities could disagree with our future intercompany charges, cross-jurisdictional transfer pricing or other matters and assess additional taxes. If we do not prevail in any such disagreements, our profitability may be affected.

The current conflict between Ukraine and Russia has exacerbated market instability and disrupted the global economy and may adversely affect our business, results of operations and financial condition.

The current conflict between Ukraine and Russia has caused uncertainty about economic and political stability, increasing volatility in the credit and financial markets and disrupting the global economy. The United States, the European Union, and several other countries are imposing far-reaching sanctions and export control restrictions on Russian entities and individuals. These sanctions and export controls may also contribute to higher oil and gas prices and inflation, which could reduce demand in the global automotive sector and therefore reduce demand for our solutions. There is also a risk that Russia launches sanctions and other retaliatory actions. Additional consequences of the conflict may include diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, and various shortages and supply chain disruptions. While we do not currently directly rely on goods or services sourced in Russia or Ukraine and thus have not experienced any direct disruptions, we may experience indirect disruptions in our supply chain. Any of the foregoing factors, including developments or effects that we cannot yet predict, may adversely affect our business, results of operations and financial condition.

Our business is subject to the risks of earthquakes, fire, floods and other natural catastrophic events, global pandemics, and interruptions by man-made problems, such as terrorism. Material disruptions of our business or information systems resulting from these events could adversely affect our operating results.

A significant natural disaster, such as an earthquake, fire, flood, hurricane or significant power outage or other similar events, such as infectious disease outbreaks or pandemic events, could have an adverse effect on our business and operating results. One of our offices is located in the San Francisco Bay Area, a region known for seismic activity. In addition, natural disasters, acts of terrorism or war could cause disruptions in our remaining manufacturing operations, our or our customers’ or channel partners’ businesses, our suppliers’ or the economy as a whole. We also rely on information technology systems to communicate among our workforce and with third parties. Any disruption to our communications, whether caused by a natural disaster or by man made problems, such as power disruptions, could adversely affect our business. We do not have a formal disaster recovery plan or policy in place and do not currently require that our suppliers’ partners have such plans or policies in place. To the extent that any such disruptions result in delays or cancellations of orders or impede our suppliers’ ability to timely deliver product components, or the deployment of our products, our business, operating results and financial condition would be adversely affected.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

None.

ITEM 2. PROPERTIES.

Our corporate headquarters is located in Orlando, Florida, where we lease a complex of three buildings with 170,294 square feet pursuant to leases that expire between June 2026 and September 2028. The Orlando facilities contain manufacturing, engineering, research and development, and administrative functions. We also lease 25,617 square feet of office and engineering space in two facilities in Palo Alto, California, 12,900 square feet of office and engineering space in a facility in Colorado Springs, Colorado, 7,573 square feet of office and engineering space in a facility in Boston, Massachusetts, and 20,337 square feet of office and engineering space in a facility in Santa Barbara, California. The Company believes its existing facilities are adequate for its current requirements.

ITEM 3. LEGAL PROCEEDINGS.

From time to time, we may become involved in actions, claims, suits, and other legal proceedings in the ordinary course of our business, including assertions by third parties relating to intellectual property infringement, breaches of contract or warranties or employment-related matters. We are not currently a party to any actions, claims, suits or other legal proceedings the outcome of which, if determined adversely to us, would individually or in the aggregate have a material adverse effect on our business, financial condition and results of operations.

ITEM 4. MINE SAFETY DISCLOSURES.

Not applicable.

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES.

Market Information

Our shares of Class A common stock have traded on the Nasdaq Global Select Market under the symbol "LAZR," since December 3, 2020. Prior to that date, our common stock traded on the Nasdaq Global Select Market under the symbol "GMHI," since March 25, 2019. There is no public trading market for our Class B common stock.

Holders

As of February 17, 2023, there were 339 holders of record of our Class A common stock and one holder of record of our Class B common stock. The number of record holders is based upon the actual number of holders registered on our books at such date and does not include holders of shares in street name or persons, partnerships, associations, corporations or other entities identified in security position listings maintained by depository trust companies.

Dividend Policy

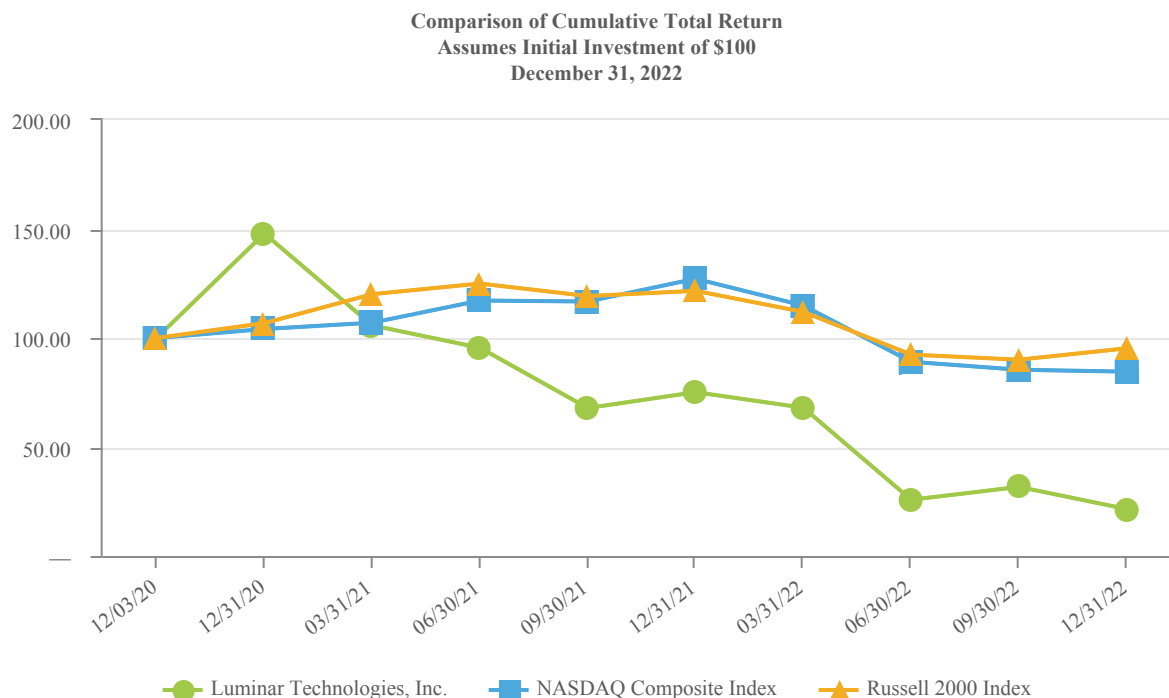
We have never declared or paid any cash dividends on our common stock. We currently intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future. Any future determination to declare cash dividends will be made at the discretion of our board of directors, subject to applicable laws, and will depend on a number of factors, including our financial condition, results of operations, capital requirements, contractual restrictions, including under any future loan facilities, general business conditions and other factors that our board of directors may deem relevant.

Recent Sales of Unregistered Securities

In connection with our investment in Class A ordinary shares of ECARX Holdings Inc. ("ECARX"), on December 20, 2022, we issued 2,030,374 shares of Class A common stock to ECARX pursuant to a private placement exempt from registration under the Securities Act of 1933, as amended, in reliance on Section 4(a)(2) thereof.

Stock Performance Graph

The graph below compares the cumulative total return on our common stock with that of the NASDAQ Composite Index and the Russell 2000 Index. The period shown commences on December 3, 2020, the date our common stock commenced trading on the Nasdaq Global Select Market, and ends on December 31, 2022. The graph assumes \$100 was invested at the close of market on December 3, 2020 in the common stock of Luminar, the NASDAQ Composite Index and the Russell 2000 Index, and assumes the reinvestment of any dividends. The stock price performance on the following graph is not intended to forecast or be indicative of future stock price performance of our common stock.



This performance graph shall not be deemed “soliciting material” or to be “filed” with the SEC for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing of Luminar Technologies, Inc. under the Securities Act of 1933, as amended, or the Securities Act of 1934 Exchange, as amended.

\$100 investment in stock or index	12/3/2020	12/31/2020	03/31/2021	06/30/2021	09/30/2021	12/31/2021	03/31/2022	06/30/2022	09/30/2022	12/31/2022
Luminar Technologies, Inc.	\$ 100.00	\$ 147.95	\$ 105.79	\$ 95.52	\$ 67.89	\$ 75.15	\$ 68.02	\$ 25.81	\$ 31.70	\$ 21.54
NASDAQ Composite Index	100.00	104.13	107.03	117.18	116.74	127.18	114.89	89.11	85.44	84.56
Russell 2000 Index	100.00	106.82	120.11	124.98	119.24	121.64	111.98	92.39	90.05	95.27

ITEM 6. RESERVED.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

The following discussion and analysis provides information that Luminar's management believes is relevant to an assessment and understanding of Luminar's consolidated results of operations and financial condition. The discussion should be read together with "Selected Historical Consolidated Financial and Operating Data of Luminar" and the historical audited annual consolidated financial statements as of and for the years ended December 31, 2022 and 2021, and the related notes thereto, included elsewhere in this Annual Report on Form 10-K. This discussion may contain forward-looking statements based upon Luminar's current expectations, estimates and projections that involve risks and uncertainties. Actual results could differ materially from those anticipated in these forward-looking statements due to, among other considerations, the matters discussed under "Risk Factors" and "Cautionary Note Regarding Forward-Looking Statements." Unless the context otherwise requires, all references in this subsection to "Luminar" refer to the business of Luminar Technologies, Inc., a Delaware corporation, and its subsidiaries prior to the consummation of the Business Combination, which is the business of the post-Business Combination Company and its subsidiaries following the consummation of the Business Combination.

Discussion regarding our financial condition and results of operations for the year ended December 31, 2021 as compared to the year ended December 31, 2020 is included in Item 7 of our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, filed with the SEC on March 1, 2022.

Overview

We are a global automotive technology company ushering a new era of vehicle safety and autonomy. We are enabling solutions for series production passenger cars and commercial trucks as well as other targeted markets.

We have built a new type of lidar sensor which we believe meets the demanding performance, safety, and cost requirements for autonomous vehicles in production, while also enabling Advanced Driving Assistance Systems ("ADAS").

Our lidar hardware and software products help set the standard for safety in the industry, and are designed to enable accurate and reliable detections of some of the most challenging "edge cases" autonomous vehicles can encounter on a regular basis. This is achieved by advancing existing lidar range and resolution to new levels, ensuring hard-to-see objects like a tire on the road ahead or a child that runs into the street are not missed, as well as by developing our software to interpret the data needed to inform autonomous and assisted driving decisions.

Business Combinations

Solfice Assets Purchase

On June 15, 2022, we completed our purchase of certain assets from Solfice Research, Inc. ("Solfice"). These assets are expected to advance our software development capabilities. The transaction was determined to be an asset acquisition under ASC 805, Business Combinations, with substantially all of the fair value attributable to acquired technology.

Freedom Photonics Acquisition

On April 13, 2022, we completed our acquisition of Freedom Photonics LLC ("Freedom Photonics"), a designer and manufacturer of high-performance lasers and related photonic products. The Freedom Photonics acquisition is expected to help us secure intellectual property and the supply of a key enabling component as part of our vertical integration strategy.

Optogration Acquisition

On August 3, 2021, we completed our acquisition of Optogration, Inc. ("Optogration"). The Optogration acquisition helps us secure intellectual property and supply of Indium Gallium Arsenide ("InGaAs") photodetector semiconductor chips, which are used to convert optical power into an electrical current. The acquisition of Optogration is part of our vertical integration strategy, which will secure supply of a key component of our sensor technology.

Reverse Merger with Gores

On December 2, 2020 (the "Closing Date"), we merged with Gores Metropoulos, Inc. ("Gores"), at which time First Merger Sub, a newly formed subsidiary of Gores, merged with and into Luminar Technologies, Inc. (the "Company" or "Luminar"), with Luminar being the surviving corporation (the "First Merger"). Immediately following the consummation of the First Merger and as part of the same overall transaction as the First Merger, Luminar, merged with and into Dawn Merger Sub II, LLC ("Second Merger Sub"), a newly formed subsidiary of Gores, with Second Merger Sub continuing as the surviving entity (the "Second Merger" and, in combination with the First Merger and the other related transactions, the "Business Combination"). Luminar was deemed the accounting predecessor and the post-combination Company is the successor SEC registrant, which means that Luminar's financial statements for previous periods will be disclosed in our future periodic reports.

filed with the SEC, as appropriate. The Business Combination was accounted for as a reverse recapitalization. Under this method of accounting, Gores was treated as the acquired company for financial statement reporting purposes.

COVID-19 Impact

The coronavirus (COVID-19) pandemic has adversely affected our and some of our customers' business operations. The extent of the continued impact of the coronavirus pandemic on our operational and financial performance will depend on various future developments, including the duration and spread of the outbreak, including the emergence of variants, and impact on our customers, suppliers, and employees, all of which is uncertain at this time. We expect the coronavirus (COVID-19) pandemic to adversely impact our business, including product development and industrialization initiatives, timing of shipment of products and provision of services to customers, supply chain, and may impact our financial position and results of operations. We are unable to predict at this time the potential adverse impact. For more information on our operations and risks related to health epidemics, including the COVID-19 pandemic, see Item 1A. Risk Factors in this Form 10-K.

Basis of Presentation

Our consolidated financial statements include the accounts of our wholly-owned subsidiaries. We have eliminated intercompany accounts and transactions.

Components of Results of Operations

Revenue

Our business and revenue producing activities are organized in two operating segments: (i) Autonomy Solutions and (ii) Advanced Technologies and Services ("ATS").

The Autonomy Solutions segment is engaged in design, manufacturing, and sale of lidar sensors catering mainly to the OEMs in the automobile, commercial vehicle, robo-taxi and adjacent industries. The Autonomy Solutions segment revenue also includes fees earned from non-recurring engineering services provided to customers in connection with customization of our sensor and software products, as well as revenue generated from licensing of certain information.

The ATS segment provides advanced semiconductors and related components, as well as design, test and consulting services to the Autonomy Solutions segment and to various third-party customers, including government agencies and defense contractors, in markets generally unrelated to autonomous vehicles.

Revenue is recognized when control of the promised goods or services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services. Fixed fee arrangements are satisfied over time and utilize the input method based on costs incurred. Accordingly, revenue for fixed fee arrangements is recognized on a percentage of completion basis. Certain customer contracts are also structured as time and materials and billed at cost of time incurred plus a markup. Such time and material contracts are recognized over time.

Two customers accounted for 21%, and 17% of our revenue for the year ended December 31, 2022. Two customers accounted for 42% and 17% of our revenue for the year ended December 31, 2021. One customer accounted for 64% of our revenue for the year ended December 31, 2020.

Cost of sales and gross profit (loss)

Cost of sales includes the fixed and variable manufacturing cost of our lidar sensors, which primarily consists of personnel-related costs including certain engineering personnel and stock-based compensation and material purchases from third-party contract manufacturers and suppliers which are directly associated with our manufacturing process. Cost of sales includes cost of providing services to customers, depreciation and amortization for manufacturing fixed assets or equipment, cost of components, product testing and launch-related costs, an allocated portion of overhead, facility and information technology ("IT") costs, write downs for excess and obsolete inventory and shipping costs.

The ATS segment provides certain services and components to the Autonomy Solutions segment which are recorded as cost of goods sold or research and development costs depending on the nature and use of such services and components by the Autonomy Solutions segment. These inter-segment transactions are eliminated in the consolidated results.

Gross profit (loss) equals revenue less cost of sales.

Operating Expenses

Research and Development (R&D)

R&D costs are expensed as incurred. Design and development costs for products to be sold under long-term supply arrangements are expensed as incurred. Design and development costs for molds, dies, and other tools involved in developing new technology are expensed as incurred.

Our R&D efforts are focused on enhancing and developing additional functionality for our existing products and on new product development, including new releases and upgrades to our lidar sensors and integrated software solutions. R&D expenses consist primarily of:

- Personnel-related expenses, including salaries, benefits, and stock-based compensation expense, for personnel in our research and engineering functions;
- Expenses related to materials, software licenses, supplies and third-party services;
- Prototype expenses; and
- An allocated portion of facility and IT costs and depreciation.

The ATS segment provides certain services and components to the Autonomy Solutions segment which are recorded as cost of goods sold or research and development costs depending on the nature and use of such services and components by the Autonomy Solutions segment. These inter-segment transactions are eliminated in our consolidated results. We expect our R&D costs to increase for the foreseeable future as we continue to invest in research and development activities to achieve our product roadmap, and we expect to continue to incur operating losses for at least the foreseeable future due to continued R&D investments.

Sales and Marketing Expenses

Sales and marketing expenses consist of personnel and personnel-related expenses, including stock-based compensation of our business development team, as well as advertising and marketing expenses. These include the cost of marketing programs, trade shows, promotional materials, demonstration equipment, an allocated portion of facility and IT costs and depreciation.

We expect to increase our sales and marketing activities, mainly in order to continue to build out our geographic presence to be closer to our partners and better serve them. We also expect that our sales and marketing expenses will increase over time as we continue to hire additional personnel to scale our business.

General and Administrative Expenses

General and administrative expenses consist of personnel and personnel-related expenses, including stock-based compensation of our executive, finance, human resources, information systems and legal departments as well as legal and accounting fees for professional and contract services.

We expect our general and administrative expenses to increase for the foreseeable future as we scale headcount with the growth of our business, and as a result of operating as a public company, including compliance with the rules and regulations of the SEC, legal, audit, additional insurance expenses, investor relations activities, and other administrative and professional services.

Change in Fair Value of Warrants

The warrant liabilities are classified as marked-to-market liabilities and the corresponding increase or decrease in value is reflected in change in fair value of warrants.

Interest Income and Other, and Interest Expense and Other

Interest income and other consists primarily of income earned on our cash equivalents and marketable securities. These amounts will vary based on our cash, cash equivalents and marketable securities balances, and also with market rates. It also includes realized gains and losses related to the marketable securities, as well as impact of gains and losses related to foreign exchange transactions, and impairment of investments and certain other assets. Interest expense and other consisted primarily of interest on convertible senior notes issued in December 2021, finance leases and interest on our senior secured term loan facility, which was repaid upon consummation of the Business Combination.

Results of Operations

Comparison of the Years Ended December 31, 2022 and 2021

The results of operations presented below should be reviewed in conjunction with the consolidated financial statements and notes included elsewhere in this report. The following table sets forth our consolidated results of operations data for the periods presented (in thousands):

	Year Ended December 31,		Change	Change
	2022	2021	\$	%
Revenue	\$ 40,698	\$ 31,944	\$ 8,754	27 %
Cost of sales	100,983	46,092	54,891	119 %
Gross loss	(60,285)	(14,148)	(46,137)	326 %
Operating Expenses:				
Research and development	185,283	88,861	96,422	109 %
Sales and marketing	38,672	17,858	20,814	117 %
General and administrative	158,162	93,685	64,477	69 %
Total operating expenses	382,117	200,404	181,713	91 %
Loss from operations	(442,402)	(214,552)	(227,850)	106 %
Other income (expense), net:				
Change in fair value of warrants	9,222	(26,126)	35,348	(135)%
Impairment of investments and certain other assets	(6,016)	—	(6,016)	nm
Interest expense and other	(11,095)	(2,028)	(9,067)	447 %
Interest income and other	5,024	3,458	1,566	45 %
Total other income (expense), net	(2,865)	(24,696)	21,831	(88)%
Loss before provision for (benefit from) income taxes	(445,267)	(239,248)	(206,019)	86 %
Provision for (benefit from) income taxes	672	(1,262)	1,934	nm
Net loss	\$ (445,939)	\$ (237,986)	\$ (207,953)	87 %

Revenue

The following table sets forth a breakdown of our revenue by our segments for the periods presented (in thousands):

	Year Ended December 31,	
	2022	2021
Revenue from sales to external customers:		
Autonomy Solutions	\$ 24,353	\$ 28,497
ATS	16,345	3,447
Total	\$ 40,698	\$ 31,944

The increase in revenue of our ATS segment in 2022 compared to 2021 was primarily driven by the Optogration and Freedom Photonics acquisitions. The decrease in revenue of our Autonomy Solutions segment in 2022 compared to 2021 was primarily due to a decrease in revenue from non-recurring engineering services as certain projects were completed or approached completion, offset by an increase in sales of sensors and licensing of certain of our intellectual property.

Cost of Sales

The \$54.9 million increase in our cost of sales in 2022 compared to 2021, was primarily due to costs associated with industrialization of Iris as we approach closer to series production readiness, increase in sales of sensors, accrual for loss on certain NRE arrangements and impairment of inventory.

Operating Expenses

Research and Development

The \$96.4 million increase in research and development expenses in 2022 compared to 2021 was primarily due:

- \$35.8 million increase in personnel-related costs driven mainly by increased headcount and increased stock-based compensation expense;

- \$34.7 million increased contractor fees and external spend in relation to continued development and testing of our sensor and in-development software products, as well as development activities related to advanced manufacturing; and
- \$15.5 million increase due to spend on data labeling services and investments in ongoing software development.

Sales and Marketing

The \$20.8 million increase in sales and marketing expenses for 2022 compared to 2021 was primarily due:

- a \$14.4 million increase in personnel related costs including stock-based compensation costs due to increase in headcount; and
- a \$5.1 million increase in marketing expenses related to trade shows and presentations in auto industry conventions as well as increased outside consultants costs related to business development activities.

General and Administrative

The \$64.5 million increase in general and administrative expenses for 2022 compared to 2021 was primarily due to:

- a \$58.2 million increase in personnel costs including stock-based compensation costs, driven mainly by increased headcount;
- a \$4.9 million increase in legal and other costs associated with our M&A activity during the year including Freedom Photonics, Solfice etc.; and
- a \$2.3 million increase in travel related costs due to easing of pandemic related travel restrictions.

Change in Fair Value of Warrant Liabilities

The change in fair value of warrant liabilities is a non-cash benefit or charge due to the corresponding decrease or increase in the estimated fair value of public and private warrants assumed in connection with the Business Combination.

Impairment of investments and certain other assets

Impairment of investments and certain other assets in 2022 primarily related to an impairment charge of \$6.0 million related to our investment in Robotic Research OpCo, LLC.

Segment Operating Loss

Segment profit or loss is defined as income or loss before taxes. Our segment loss breakdown is as follows (in thousands):

	Year Ended December 31,		Change	Change
	2022	2021	\$	%
Segment operating loss				
Autonomy Solutions	\$ (412,673)	\$ (214,133)	\$ (198,540)	93%
ATS	(29,394)	(324)	(29,070)	8972%

Liquidity and Capital Resources

Sources of Liquidity and Capital Requirements

Our capital requirements will depend on many factors, including volume, the timing and extent of spending to support R&D efforts, investments in manufacturing equipment and facilities, the expansion of sales and marketing activities, market adoption of new and enhanced products and features, and investments in information technology systems. Until we can generate sufficient revenue from sale of products and services to cover our operating expenses, working capital, and capital expenditures, we expect our cash, cash equivalents and marketable securities, and proceeds from debt and/or equity financings to fund our cash needs. If we are required to raise additional funds by issuing equity securities, dilution to stockholders would result. Any equity securities issued may also provide for rights, preferences or privileges senior to those of holders of our common stock. If we raise funds by issuing debt securities, these debt securities may have rights, preferences and privileges senior to those of holders of our common stock. The terms of debt securities or borrowings could impose significant restrictions on our operations. The credit market and financial services industry have in the past, and may in the future, experience periods of uncertainty that could impact the availability and cost of equity and debt financing.

We expect to continue to invest in our product and software development as well as incur efforts to build customer relations and markets. Further, we expect to invest in developing advanced manufacturing capabilities, both, internally as well as with our contract manufacturing partners. For example, in January 2022, we executed an arrangement with Celestica

committing approximately \$26.9 million for purchase of capital equipment as well as engineering efforts related to manufacturing process. We expect to fund these product and business development initiatives, and capital expenditures either through our cash, cash equivalents and marketable securities or through issuance of shares of our Class A common stock (“Stock-in-lieu of Cash Program”).

As of December 31, 2022, we had cash and cash equivalents totaling \$69.6 million and marketable securities of \$419.3 million, totaling \$488.9 million of total liquidity. To date, our principal sources of liquidity have been proceeds received from issuances of debt and equity. Market and economic conditions, such as increase in interest rates by federal agencies, may materially impact relative cost and mix of these sources of liquidity.

To date, we have not generated positive cash flows from operating activities and have incurred significant losses from operations in the past as reflected in our accumulated deficit of \$1.3 billion as of December 31, 2022. We expect to continue to incur operating losses for at least the foreseeable future due to continued R&D investments that we intend to make in our business and, as a result, we may require additional capital resources to grow our business. We believe that current cash, cash equivalents, and marketable securities will be sufficient to continue to execute our business strategy in the next 12 months and until we expect to begin series production.

Cash Flow Summary

The following table summarizes Luminar’s cash flows for the periods presented:

	Year ended December 31,	
	2022	2021
Net cash provided by (used in):		
Operating activities	\$ (208,232)	\$ (148,421)
Investing activities	27,986	(194,188)
Financing activities	(79,351)	463,592

Operating Activities

Net cash used in operating activities was \$208.2 million during the year ended December 31, 2022. Net cash used in operating activities was due to our net loss of \$445.9 million adjusted for non-cash items of \$225.3 million, primarily consisting of \$162.4 million of stock-based compensation, \$41.5 million of vendor payments in stock in lieu of cash, \$12.2 million of inventory write-offs and write-downs, \$9.2 million of change in fair value of warrant liabilities, \$6.6 million of depreciation and amortization, and \$6.0 million of impairment of investments and certain other assets, offset by cash provided by operating assets and liabilities of \$5.9 million due to the timing of cash receipts from customers and cash payments to vendors.

Investing Activities

Net cash provided by in investing activities of \$28.0 million in 2022 comprised of \$367.4 million and \$88.0 million, respectively, of cash proceeds from maturities and sales or redemptions of marketable securities, offset primarily by \$404.6 million related to purchases of marketable securities and \$15.6 million in capital expenditures.

Financing Activities

Net cash used in financing activities of \$79.4 million in 2022 primarily related to \$80.9 million of cash paid for repurchases of shares of Class A common stock and \$3.7 million of cash paid for employee taxes related to stock-based awards, offset by \$4.0 million of cash received from exercises of stock options and \$1.3 million of proceeds from sale of Class A common stock under our employee stock purchase plan.

Critical Accounting Policies and Estimates

We prepare our consolidated financial statements in accordance with generally accepted accounting principles in the United States (“GAAP”). The preparation of these consolidated financial statements requires us to make estimates, assumptions and judgments that can significantly impact the amounts we report as assets, liabilities, revenue, costs and expenses and the related disclosures. We base our estimates on historical experience and other assumptions that we believe are reasonable under the circumstances. Our actual results could differ significantly from these estimates under different assumptions and conditions. We believe that the accounting policies and estimates discussed below are critical to understanding our historical and future performance as these policies involve a greater degree of judgment and complexity.

Revenue

Revenue from product sales is recognized upon transfer of control of promised products. Revenue for service projects is recognized as services are performed and amounts are earned in accordance with the terms of a contract. Revenue is recognized in an amount that reflects the consideration that we expect to receive in exchange for those products and services.

Revenues related to NRE projects are recognized over time using the cost input method. In using this input method, we generally apply the cost-to-cost method of accounting where sales and profits are recorded based on the ratio of costs incurred to estimated total costs at completion. Recognition of profit on the NRE contracts requires estimates of the total contract value, the total cost at completion, and the measurement of progress towards completion. During the year ended December 31, 2022, we recorded \$19.2 million in cost of sales (services) estimated losses expected to be incurred on NRE projects with certain customers. Estimated contract losses in the year ended December 31, 2021 and 2020 were not material. The estimated contract losses recorded in 2022 were primarily a result of (a) changes in estimates related to costs expected to be incurred for contractual milestones based on actual experience on similar projects and (b) changes in scope of project deliverables agreed upon with the respective customers during the year. Significant judgment is required when estimating total contract costs and progress to completion on the arrangements, as well as whether a loss is expected to be incurred on the contract. In estimating total contract costs, we are also required to estimate the effort expected to be incurred to complete a NRE project. These estimates are subject to significant estimation uncertainty as actual time and effort incurred on completing a NRE project or actual rates of either internal or contracted personnel working on such NRE projects may differ from our estimates. If circumstances arise that change the original estimates of revenues, costs, or extent of progress toward completion, revisions to the estimates are made. These revisions may result in increases or decreases in estimated revenues or costs, and such revisions are reflected in income in the period in which the circumstances that gave rise to the revision become known to us. We perform ongoing profitability analysis of our contracts accounted for under this method to determine whether the latest estimates of revenues, costs, and profits require updating. If at any time these estimates indicate that the contract will be unprofitable, the entire estimated loss for the remainder of the contract is recorded immediately.

We enter into contracts that can include various combinations of products and services, which are generally capable of being distinct and accounted for as separate performance obligations; however, determining whether products or services are considered distinct performance obligations that should be accounted for separately versus together may sometimes require significant judgment. Transaction price is allocated to each performance obligation on a relative standalone selling price (“SSP”) basis. Judgment is required to determine SSP for each distinct performance obligation. We use a range of sales prices from actual sales to customers to estimate SSP when products and services are sold separately. In instances where SSP is not directly observable, we determine SSP using information that may include other observable inputs available to it.

Changes in judgments with respect to these assumptions and estimates could impact the timing or amount of revenue recognition.

Recent Accounting Pronouncements

See Note 2 in Item 8. of this Form 10-K for information related to recent accounting pronouncements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

We are exposed to various market risks, which may result in potential losses arising from adverse changes in market rates, such as interest rates and foreign exchange rates. We do not enter into derivatives or other financial instruments for trading or speculative purposes and do not believe we are exposed to material market risk with respect to our cash, cash equivalents and marketable securities.

Interest Rate Risk. We had cash and cash equivalents, and marketable securities totaling \$488.9 million as of December 31, 2022. Cash equivalents and marketable securities were invested primarily in U.S. treasury securities, commercial paper, corporate bonds, U.S. agency and government sponsored securities, equity investments and asset-backed securities. Our investment policy is focused on the preservation of capital and supporting our liquidity needs. Under the policy, we invest in highly rated securities, while limiting the amount of credit exposure to any one issuer other than the U.S. government. We do not invest in financial instruments for trading or speculative purposes, nor do we use leveraged financial instruments. We utilize external investment managers who adhere to the guidelines of our investment policy. A hypothetical 100 basis point change in interest rates is not expected to have a material impact on the value of our cash and cash equivalents or marketable investments.

As of December 31, 2022, the principal amount outstanding of our Convertible Senior Notes was \$625.0 million. The fair value of the Convertible Senior Notes is subject to interest rate risk, market risk and other factors due to their conversion features. The fair value of the Convertible Senior Notes will generally increase or decrease as our common stock price increases or decreases. The interest and market value changes affect the fair value of the Convertible Senior Notes but do not impact our financial position, cash flows or results of operations due to the fixed nature of the debt obligations. We carry the Convertible Senior Notes at face value less unamortized discount on our consolidated balance sheets.

Our Convertible Senior Notes bear fixed interest rate, and therefore, are not subject to interest rate risk. We have not utilized derivative financial instruments, derivative commodity instruments or other market risk sensitive instruments, positions or transactions in any material fashion, except for the privately negotiated capped call transactions entered into in December 2021 related to the issuance of our Convertible Senior Notes.

Foreign Currency Exchange Risk. Our results of operations and cash flows are subject to fluctuations due to changes in foreign currency exchange rates. Currently, all of our revenue is generated in U.S. dollars. Our expenses are generally denominated in the currencies of the jurisdictions in which we conduct our operations, which are primarily in the U.S. and in Europe. Luminar's results of operations and cash flows in the future may be adversely affected due to an expansion of non-U.S. dollar denominated contracts, growth of its international entities, and changes in foreign exchange rates. The effect of a hypothetical 10% change in foreign currency exchange rates applicable to our business would not have a material impact on our historical or current consolidated financial statements. To date, we have not engaged in any hedging strategies. As our international operations grow, we will continue to reassess our approach to manage the risk relating to fluctuations in currency rates.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.

LUMINAR TECHNOLOGIES, INC.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Luminar Technologies, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Luminar Technologies, Inc. and subsidiaries (the “Company”) as of December 31, 2022 and 2021, the related consolidated statements of operations and comprehensive loss, convertible preferred stock and stockholders’ equity (deficit), and cash flows, for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company’s internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 28, 2023, expressed an unqualified opinion on the Company’s internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

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

Revenue — Non-recurring Engineering (“NRE”) services — Refer to Notes 2 and 4 to the financial statements

Critical Audit Matter Description

The Company recognizes revenue from non-recurring engineering services under fixed fee arrangements (“NRE services”) to integrate Luminar lidar hardware for autonomy in vehicle platforms. NRE services are recognized over time using an input method based on contract costs incurred to date compared to total estimated contract costs. The accounting for these contracts involves judgment, particularly as it relates to estimating total contract costs.

Given the judgments necessary to determine total estimated contract costs used to recognize revenue for NRE services, auditing such estimates required extensive audit effort due to the high degree of auditor judgment required when performing audit procedures and evaluating the results of those procedures.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to management’s estimates of total contract costs used to recognize revenue for NRE services included the following, among others:

- We tested the effectiveness of controls over long-term engineering services contract revenue, including management’s controls over the total estimated contract costs.
- We selected a sample of NRE service contracts and performed the following:

- Evaluated the estimates of total contract costs by:
 - Inquiring with management to obtain an understanding of its key inputs and assumptions used to determine total cost estimates.
 - Evaluating management’s ability to achieve the estimates of total cost by performing corroborating inquiries with the Company’s project managers and engineers.
 - Comparing inputs and assumptions to management’s work plans, engineering specifications, supplier contracts, and payroll data.
 - Assessing management’s ability to estimate total costs accurately by comparing actual costs to management’s historical estimates for performance obligations that have been fulfilled.
 - Testing the mathematical accuracy of management’s calculation of estimated total contract cost.

/s/ Deloitte & Touche LLP

San Jose, California

February 28, 2023

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

LUMINAR TECHNOLOGIES, INC. AND SUBSIDIARIES
Consolidated Balance Sheets
(In thousands, except share and per share data)

	December 31,	
	2022	2021
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 69,552	\$ 329,977
Restricted cash	1,553	725
Marketable securities (including \$0 and \$12,200 with a related party as of December 31, 2022 and 2021, see Note 17)	419,314	462,141
Accounts receivable	11,172	13,013
Inventory	8,792	10,342
Prepaid expenses and other current assets	44,203	29,195
Total current assets	554,586	845,393
Property and equipment, net	30,260	11,009
Operating lease right-of-use assets	21,244	9,145
Intangible assets, net	22,077	2,424
Goodwill	18,816	3,110
Other non-current assets	40,344	12,455
Total assets	\$ 687,327	\$ 883,536
LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)		
Current liabilities:		
Accounts payable	\$ 18,626	\$ 14,419
Accrued and other current liabilities	52,962	19,844
Operating lease liabilities	5,953	4,735
Total current liabilities	77,541	38,998
Warrant liabilities	3,005	31,230
Convertible senior notes	612,192	608,957
Operating lease liabilities, non-current	16,989	5,768
Other non-current liabilities	4,005	598
Total liabilities	713,732	685,551
Commitments and contingencies (see Note 15)		
Stockholders' equity (deficit):		
Preferred stock, \$0.0001 par value; 10,000,000 shares authorized, no shares issued and outstanding as of December 31, 2022 and 2021	—	—
Class A common stock, \$0.0001 par value; 715,000,000 shares authorized, 291,942,087 shares issued, 270,078,637 shares outstanding as of December 31, 2022; 715,000,000 shares authorized, 266,076,525 shares issued, 250,812,764 outstanding as of December 31, 2021	29	27
Class B common stock, \$0.0001 par value; 121,000,000 shares authorized, 97,088,670 shares issued and outstanding as of December 31, 2022 and 2021	10	10
Additional paid-in capital	1,558,685	1,257,214
Accumulated other comprehensive loss	(4,226)	(908)
Treasury stock, at cost, 21,863,450 and 15,263,761 shares as of December 31, 2022 and 2021, respectively	(312,477)	(235,871)
Accumulated deficit	(1,268,426)	(822,487)
Total stockholders' equity (deficit)	(26,405)	197,985
Total liabilities and stockholders' equity (deficit)	\$ 687,327	\$ 883,536

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

LUMINAR TECHNOLOGIES, INC. AND SUBSIDIARIES
Consolidated Statements of Operations and Comprehensive Loss
(In thousands, except share and per share data)

	Year Ended December 31,		
	2022	2021	2020
Revenue:			
Products	\$ 18,492	\$ 10,118	\$ 4,840
Services	22,206	21,826	9,111
Total revenue	40,698	31,944	13,951
Cost of sales:			
Products	61,985	23,484	15,097
Services	38,998	22,608	9,855
Total cost of sales	100,983	46,092	24,952
Gross loss	(60,285)	(14,148)	(11,001)
Operating expenses:			
Research and development	185,283	88,861	38,651
Sales and marketing	38,672	17,858	7,948
General and administrative	158,162	93,685	29,275
Total operating expenses	382,117	200,404	75,874
Loss from operations	(442,402)	(214,552)	(86,875)
Other income (expense), net:			
Change in fair value of warrant liabilities	9,222	(26,126)	(268,266)
Impairment of investments and certain other assets	(6,016)	—	—
Loss on extinguishment of debt	—	—	(3,996)
Interest expense and other	(11,095)	(2,028)	(2,885)
Interest income and other	5,024	3,458	(276)
Total other income (expense), net	(2,865)	(24,696)	(275,423)
Loss before provision for (benefit from) income taxes	(445,267)	(239,248)	(362,298)
Provision for (benefit from) income taxes	672	(1,262)	—
Net loss	\$ (445,939)	\$ (237,986)	\$ (362,298)
Net loss attributable to common stockholders	\$ (445,939)	\$ (237,986)	\$ (369,055)
Net loss per share attributable to common stockholders:			
Basic and diluted	\$ (1.25)	\$ (0.69)	\$ (2.54)
Shares used in computing net loss per share attributable to common stockholders:			
Basic and diluted	356,265,774	346,300,975	145,096,996
Comprehensive Loss:			
Net loss	\$ (445,939)	\$ (237,986)	\$ (362,298)
Net unrealized gains (losses) on available-for-sale debt securities	(3,318)	(942)	35
Comprehensive loss	\$ (449,257)	\$ (238,928)	\$ (362,263)

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

LUMINAR TECHNOLOGIES, INC. AND SUBSIDIARIES
Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
(In thousands, except share data)

	Series A Convertible Preferred Stock		Series X Convertible Preferred Stock		Founders Convertible Preferred Stock		Class A Common Stock		Class B Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income Loss	Treasury Stock	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount					
Balance as of December 31, 2019	94,818,151	244,743	—	—	26,206,837	3	139,635,890	14	—	—	10,457	(1)	—	(222,203)	(211,730)
Issuance of Series X convertible preferred stock for cash, net of issuance costs of \$5,790	—	—	18,457,230	178,074	—	—	—	—	—	—	—	—	—	—	—
Retirement of Class A shares	—	—	—	—	—	—	(6,629,372)	(1)	—	—	—	—	—	—	(1)
Conversion of certain shares into Class B common stock	—	—	—	—	(22,935,413)	(3)	(82,182,790)	(8)	105,118,203	11	3,000	—	—	—	3,000
Merger recapitalization—Class A	(94,818,151)	(244,743)	(18,457,230)	(178,074)	(3,271,424)	—	116,546,805	12	—	—	422,802	—	—	—	422,814
Public and Private Warrants	—	—	—	—	—	—	—	—	—	—	(102,396)	—	—	—	(102,396)
Issuance of Class A common stock upon exercise of warrants	—	—	—	—	—	—	1,466,155	—	—	—	30,112	—	—	—	30,112
Gores shares recapitalized, net of redemptions and equity issuance costs of \$17,226	—	—	—	—	—	—	49,981,349	5	—	—	363,455	—	—	—	363,460
Share-based compensation	—	—	—	—	—	—	—	—	—	—	5,745	—	—	—	5,745
Other comprehensive income	—	—	—	—	—	—	—	—	—	—	—	35	—	—	35
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	(362,298)	(362,298)
Balance as of December 31, 2020	—	\$ —	—	\$ —	—	\$ —	218,818,037	\$ 22	105,118,203	\$ 11	\$ 733,175	\$ 34	\$ —	\$ (584,501)	\$ 148,741
Purchases of capped call options related to the convertible senior notes	—	—	—	—	—	—	—	—	—	—	(73,438)	—	—	—	(73,438)
Shares repurchased	—	—	—	—	—	—	—	—	—	—	—	—	(235,871)	—	—
Issuance of Class A common stock upon exercise of Public and Private Warrants	—	—	—	—	—	—	15,574,037	2	—	—	492,219	—	—	—	492,221
Issuance of Class A common stock upon exercise of stock options and vesting of restricted stock units	—	—	—	—	—	—	5,232,744	—	—	—	6,176	—	—	—	6,176
Retirement of unvested restricted common stock	—	—	—	—	—	—	(71,894)	—	—	—	—	—	—	—	—
Vendor payments under the stock-in-lieu of cash program	—	—	—	—	—	—	291,940	—	—	—	10,743	—	—	—	10,743
Acquisition of Optogration, Inc.	—	—	—	—	—	—	370,034	—	—	—	6,527	—	—	—	6,527
Issuance of earn-out shares	—	—	—	—	—	—	10,242,703	1	6,970,467	1	(2)	—	—	—	—
Issuance of shares for investment in Robotic Research Opco, LLC	—	—	—	—	—	—	618,924	—	—	—	10,002	—	—	—	10,002

	Series A Convertible Preferred Stock		Series X Convertible Preferred Stock		Founders Convertible Preferred Stock		Class A Common Stock		Class B Common Stock		Additional Paid-in Capital		Accumulated Other Comprehensive Income Loss		Treasury Stock		Accumulated Deficit		Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	
Conversion of Class B common stock into Class A common stock	—	—	—	—	—	—	2	(15,000,000)	(2)	—	—	—	—	—	—	—	—	—	—
Share-based compensation	—	—	—	—	—	—	—	—	—	—	70,983	—	—	—	—	—	—	—	70,983
Expense related to Volvo Warrants	—	—	—	—	—	—	—	—	—	—	959	—	—	—	—	—	—	—	959
Payments of employee taxes related to vested restricted stock units	—	—	—	—	—	—	—	—	—	—	(140)	—	—	—	—	—	—	—	(140)
Cash received from Gores on settlement of recapitalization of escrow	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10
Other comprehensive loss	—	—	—	—	—	—	—	—	—	—	—	—	(942)	—	—	—	—	—	(942)
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(237,986)	—	(237,986)
Balance as of December 31, 2021	—	—	—	—	—	—	27	97,088,670	10	1,257,214	(908)	(235,871)	(822,487)	—	(76,606)	—	—	—	197,985
Shares repurchased	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(76,606)
Issuance of Class A common stock upon exercise of Private Warrants	—	—	—	—	—	—	405,752	—	—	—	19,003	—	—	—	—	—	—	—	19,003
Issuance of Class A common stock upon exercise of stock options and vesting of restricted stock units	—	—	—	—	—	—	9,177,748	1	—	—	3,944	—	—	—	—	—	—	—	3,945
Issuance of Class A common stock under ESPP	—	—	—	—	—	—	168,147	—	—	—	1,271	—	—	—	—	—	—	—	1,271
Retirement of unvested restricted common stock	—	—	—	—	—	—	(48,298)	—	—	—	—	—	—	—	—	—	—	—	—
Vendor payments under the stock-in-lieu of cash program	—	—	—	—	—	—	9,949,385	1	—	—	80,254	—	—	—	—	—	—	—	80,255
Investment in ECARX Holdings, Inc.	—	—	—	—	—	—	2,030,374	—	—	—	12,588	—	—	—	—	—	—	—	12,588
Optogration milestone awards	—	—	—	—	—	—	1,632,056	—	—	—	11,751	—	—	—	—	—	—	—	11,751
Acquisition of Freedom Photonics LLC	—	—	—	—	—	—	2,176,205	—	—	—	30,510	—	—	—	—	—	—	—	30,510
Acquisition of certain assets from Solstice Research, Inc.	—	—	—	—	—	—	374,193	—	—	—	3,361	—	—	—	—	—	—	—	3,361
Share-based compensation	—	—	—	—	—	—	—	—	—	—	142,519	—	—	—	—	—	—	—	142,519
Payments of employee taxes related to stock-based awards	—	—	—	—	—	—	—	—	—	—	(3,730)	—	—	—	—	—	—	—	(3,730)
Other comprehensive loss	—	—	—	—	—	—	—	—	—	—	—	—	(3,318)	—	—	—	—	—	(3,318)
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(445,939)	—	(445,939)
Balance as of December 31, 2022	—	\$ —	—	\$ —	—	\$ —	291,942,087	\$ 29	97,088,670	\$ 10	\$ 1,558,685	\$ (4,226)	\$ (312,477)	\$ (1,268,426)	\$ —	\$ —	\$ —	\$ —	(26,405)

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

LUMINAR TECHNOLOGIES, INC. AND SUBSIDIARIES
Consolidated Statements of Cash Flows
(In thousands)

	Year Ended December 31,		
	2022	2021	2020
Cash flows from operating activities:			
Net loss	\$ (445,939)	\$ (237,986)	\$ (362,298)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	6,566	4,162	2,517
Amortization of operating lease right-of-use assets	5,237	3,705	—
Amortization of premium on marketable securities	1,288	1,792	175
Change in fair value of warrants	(9,222)	26,126	268,266
Vendor stock-in-lieu of cash program	41,459	10,817	—
Amortization of debt discount and issuance costs	3,236	—	—
Inventory write-offs and write-downs	12,154	2,918	4,407
Loss on sale or disposal of property and equipment	—	752	525
Loss on extinguishment of debt	—	—	3,996
Share-based compensation	162,405	77,684	8,711
Impairment of investments and certain other assets	6,016	—	—
Expense related to Volvo Warrants	—	959	—
Warranty related to sensors	2,481	1,538	—
Deferred taxes	232	(1,262)	—
Other	—	305	—
Changes in operating assets and liabilities:			
Accounts receivable	5,144	(6,233)	(4,294)
Inventories	(10,477)	(10,751)	(4,018)
Prepaid expenses and other current assets	(6,557)	(24,340)	(2,805)
Other non-current assets	(3,289)	(6)	165
Accounts payable	5,301	3,838	2,620
Accrued and other current liabilities	17,768	3,578	6,693
Other non-current liabilities	(2,035)	(6,017)	(302)
Net cash used in operating activities	(208,232)	(148,421)	(75,642)
Cash flows from investing activities:			
Acquisition of Freedom Photonics LLC (net of cash acquired)	(2,759)	—	—
Acquisition of certain assets from Solstice Research, Inc.	(2,001)	—	—
Cash received from acquisition of Optogration, Inc.	—	358	—
Purchases of marketable securities (including \$17,846 and \$16,423 with related parties in 2022 and 2021, respectively, see Note 17)	(404,598)	(716,933)	(315,920)
Proceeds from maturities of marketable securities	367,367	366,857	16,755
Proceeds from sales/redemptions of marketable securities (including \$24,753 and \$4,396 with related parties in 2022 and 2021, respectively, see Note 17)	88,041	161,910	28,974
Proceeds from refundable security deposits	—	—	581
Purchases of property and equipment	(15,614)	(6,433)	(2,202)
Disposal of property and equipment	—	53	18
Advances for capital projects and equipment	(2,450)	—	—
Net cash provided by (used in) investing activities	27,986	(194,188)	(271,794)
Cash flows from financing activities:			
Proceeds from issuance of convertible senior notes, net of debt discounts of \$15,625	—	609,375	—
Purchases of capped call options	—	(73,438)	—
Cash received from Gores on recapitalization	—	—	380,601
Transaction costs related to merger with Gores	—	—	(17,226)
Proceeds from issuance of Series X convertible preferred stock	—	—	183,865
Issuance cost paid for Series X convertible preferred stock	—	—	(5,790)
Proceeds from the issuance of debt	—	—	32,101
Repayment of debt	—	(112)	(41,190)
Debt prepayment charges	—	—	(1,918)
Debt issuance costs	—	—	(361)
Principal payments on finance leases (capital leases prior to adoption of ASC 842)	—	(289)	(222)
Proceeds from exercise of warrants	—	153,927	—

	Year Ended December 31,		
	2022	2021	2020
Proceeds from exercise of stock options	3,986	5,859	—
Proceeds from sale of Class A common stock under ESPP	1,271	—	—
Payments of employee taxes related to stock-based awards	(3,730)	—	—
Repurchases of common stock and redemption of warrants	(80,878)	(231,600)	(10)
Other financing activities	—	(130)	—
Net cash provided by (used in) financing activities	(79,351)	463,592	529,850
Net increase (decrease) in cash, cash equivalents and restricted cash	(259,597)	120,983	182,414
Beginning cash, cash equivalents and restricted cash	330,702	209,719	27,305
Ending cash, cash equivalents and restricted cash	<u>\$ 71,105</u>	<u>\$ 330,702</u>	<u>\$ 209,719</u>

Supplemental disclosures of cash flow information:

Cash paid for interest	\$ 7,769	\$ 215	\$ 2,789
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Supplemental disclosures of noncash investing and financing activities:

Issuance of Class A common stock upon exercise of warrants	19,003	338,293	30,112
Conversion of Series A, Series X and Founders' convertible preferred stock into Class A and Class B common stock	—	—	422,813
Issuance of Class A common stock for investment in Robotic Research OpCo, LLC	—	10,002	—
Issuance of Class A common stock to acquire Optogration, Inc.	—	6,527	—
Operating lease right-of-use assets obtained in exchange for lease obligations upon adoption of ASC 842	—	10,849	—
Operating lease right-of-use assets obtained in exchange for lease obligations	16,749	2,876	—
Assets acquired under finance leases (capital leases prior to adoption of ASC 842)	—	—	318
Purchases of property and equipment recorded in accounts payable and accrued liabilities	3,870	849	319
Amounts payable for shares repurchased	—	4,273	—
Vendor stock-in-lieu of cash program—advances for capital projects and equipment	28,402	—	—
Investment in ECARX Holdings, Inc.	12,588	—	—

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

LUMINAR TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Organization and Description of Business

Luminar Technologies, Inc. and its wholly-owned subsidiaries (the “Company” or “Luminar”) was originally incorporated in Delaware on August 28, 2018 under the name Gores Metropoulos, Inc. (“Gores”). The Company was formed for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization or similar business combination with one or more businesses. On December 2, 2020, the Company (at such time named Gores Metropoulos, Inc.) consummated the business combination (the “Business Combination”) pursuant to the Agreement and Plan of Merger, dated August 24, 2020 with the pre-Business Combination Luminar Technologies, Inc. (“Legacy Luminar”). Legacy Luminar was incorporated in Delaware on March 31, 2015. In connection with the consummation of the Business Combination, the Company changed its name from Gores Metropoulos, Inc. to Luminar Technologies, Inc. The Company’s common stock is listed on the NASDAQ under the symbol “LAZR.”

Unless the context otherwise requires, the “Company” refers to the combined company and its subsidiaries following the Business Combination, “Gores” refers to the Company prior to the Business Combination and “Legacy Luminar” refers to Luminar Technologies, Inc. prior to the Business Combination. Refer to Note 3 for further discussion of the Business Combination.

The Company is a developer of advanced sensor technologies and software for the autonomous vehicle industry, encompassing Laser Imaging, Detection and Ranging (lidar) technology. The Company manufactures and distributes commercial lidar sensors and certain components for the autonomous vehicle industry. The Company is headquartered in Orlando, Florida and has personnel that conducts the Company’s operations from various locations in the United States and internationally including Germany, Sweden, Mexico, China, India and Israel.

Note 2. Basis of Presentation and Summary of Significant Accounting Policies

Basis of Presentation and Consolidation

The accompanying consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States (“GAAP”) and applicable rules and regulations of the Securities and Exchange Commission (“SEC”) regarding annual financial reporting. All intercompany transactions and balances have been eliminated in consolidation.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make judgments, estimates and assumptions that affect the reported amounts of assets, liabilities, equity, revenues and expenses, and related disclosures. The significant estimates made by management include inventory write-downs, valuation allowance for deferred tax assets, valuation of warrants, fair valuation of assets acquired in mergers and acquisitions including intangible assets, forecasted costs associated with non-recurring engineering (“NRE”) services, product warranty reserves, stock-based compensation expense and other loss contingencies. Management periodically evaluates such estimates and they are adjusted prospectively based upon such periodic evaluation. Actual results could differ from those estimates.

Segment Information

The Company has determined its operating segments using the same indicators which are used to evaluate its performance internally. The Company’s business activities are organized in two operating segments:

(i) “Autonomy Solutions” which includes manufacturing and distribution of lidar sensors that measure distance using laser light to generate a 3D map, non-recurring engineering services related to the Company’s lidar products, development of software products that enable autonomy capabilities for automotive applications, and licensing of the Company’s intellectual property (“IP”). In June 2022, the Company acquired certain assets from Solrice Research, Inc. (“Solrice” or “Civil Maps”). Operations of Civil Maps have been included in the Autonomy Solutions segment.

(ii) “Advanced Technologies and Services (“ATS”)” which includes development of application-specific integrated circuits, pixel-based sensors, advanced lasers, as well as designing, testing and providing consulting services for non-standard integrated circuits. In the second quarter of 2022, the Components segment was renamed as ATS. In August 2021 and in April 2022, the Company acquired Optogration, Inc. (“Optogration”) and Freedom Photonics LLC (“Freedom Photonics”), respectively. Operations of Optogration and Freedom Photonics have been included in the ATS segment.

LUMINAR TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Concentration of Credit Risk

The Company's financial instruments that are exposed to concentrations of credit risk consist primarily of cash and cash equivalents, debt securities and accounts receivable. The Company's deposits exceed federally insured limits. Cash held by the foreign subsidiaries of the Company as of December 31, 2022 and 2021 was not material.

The Company's revenue is derived from customers located in the United States and international markets. Three customers accounted for 23%, 27% and 11%, respectively, of the Company's accounts receivable as of December 31, 2022. Two customers accounted for 39% and 31%, respectively, of the Company's accounts receivable as of December 31, 2021.

Cash and Cash Equivalents

The Company's cash and cash equivalents consist of investments with maturities of three months or less at the time of purchase. The Company's cash equivalents include investments in money market funds, U.S. treasury securities and commercial paper.

Restricted Cash

Restricted cash consists of funds that are contractually restricted as to usage or withdrawal due to legal agreements. The Company determines current or non-current classification of restricted cash based on the expected duration of the restriction.

Debt Securities

The Company's debt securities consist of U.S. agency securities and government sponsored securities, U.S. treasury securities, corporate bonds, commercial paper and asset-backed securities. The Company classifies its debt securities as available-for-sale at the time of purchase and reevaluates such designation as of each balance sheet date. The Company considers all debt securities as available for use to support current operations, including those with maturity dates beyond one year and are classified as current assets under marketable securities in the accompanying consolidated balance sheets. Debt securities included in marketable securities on the consolidated balance sheets consist of securities with original maturities greater than three months at the time of purchase. Debt securities are carried at fair value, with the unrealized gains and losses reported as a component of accumulated other comprehensive income (loss) ("OCI"). Any realized gains or losses on the sale of debt securities are determined on a specific identification method, and such gains and losses are reflected as a component of other income (expense), net.

The Company reviews the fair value of debt securities and when the fair value of a debt security is below its amortized cost, the amortized cost should be written down to its fair value if (i) it is more likely than not that management will be required to sell the impaired security before recovery of its amortized basis; or (ii) management has the intention to sell the security. If neither of these conditions are met, the Company must determine whether the impairment is due to credit losses. To determine the amount of credit losses, the Company compares the present value of the expected cash flows of the security, derived by taking into account the issuer's credit ratings and remaining payment terms, with its amortized cost basis. The amount of impairment recognized is limited to the excess of the amortized cost over the fair value of the security. An allowance for credit losses for the excess of amortized cost over the expected cash flows is recorded in other income (expense), net on the consolidated statements of operations. Non-credit related impairment losses are recorded in OCI.

Marketable Equity Investments

The Company holds marketable equity investments over which the Company does not have a controlling interest or significant influence. Marketable equity investments are measured using the quoted prices in active markets with changes recorded in other income (expense), net on the consolidated statement of operations.

Non-Marketable Equity Investments Measured Using the Measurement Alternative

The Company holds a non-marketable equity investment in a privately held company in which the Company does not own a controlling interest or have significant influence. The investment does not have a readily determinable fair value and the Company has elected the measurement alternative, and consequently, measures the investment at cost less any impairment, adjusted to fair value, if there are observable price changes for an identical or similar investment of the same issuer.

Accounts Receivable

Accounts receivables are recorded at the invoiced amount and do not bear interest. The Company reviews the need for an allowance for doubtful accounts quarterly based on historical experience with each customer and the specifics of each customer arrangement. The Company did not have material write-offs in any period presented, and as of December 31, 2022, the

LUMINAR TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

allowance for doubtful accounts was not material. The Company did not record any allowance for doubtful accounts as of December 31, 2021.

Inventory

The Company values inventory at the lower of cost or net realizable value. The Company determines the cost of inventory using the standard-cost method, which approximates actual costs based on a first-in, first-out method. The Company assesses inventory of slow-moving products for potential impairment, and records write-downs of inventory to cost of sales.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation and amortization, and are depreciated using the straight-line method over the estimated useful lives of the assets as follows:

Asset Category	Estimated useful lives
Machinery and equipment	1 to 7 years
Computer hardware and software	3 to 5 years
Demonstration fleet and demonstration units	2 to 5 years
Leasehold improvements	Shorter of useful life or lease term
Vehicles	5 years
Furniture and fixtures	7 years

Design and development costs for molds, dies and other tools that will be used in producing the products under a long-term supply arrangement are capitalized as tooling which are included in machinery and equipment. The Company estimates useful lives for these tooling items to range between one to three years. The amount capitalized for tooling as of December 31, 2022 was not material. The Company had not capitalized any amount for tooling as of December 31, 2021. Maintenance and repairs are charged to expense as incurred, and improvements and betterments are capitalized. When assets are retired or otherwise disposed of, the cost and accumulated depreciation and amortization are removed from the consolidated balance sheet and any resulting gain or loss is reflected in the consolidated statements of operations and comprehensive loss in the period realized.

Intangible Assets

Intangible assets, consisting of acquired developed technology, customer relationships, customer backlog, assembled workforce, IPR&D and tradename are carried at cost less accumulated amortization. All intangible assets have been determined to have definite lives and are amortized on a straight-line basis over their estimated remaining economic lives, ranging from one to ten years. Amortization expense related to developed technology is included in cost of sales. Amortization expense related to customer relationships is included in sales and marketing expense. Amortization expense related to tradename is included in general and administrative expense. Intangible assets are reviewed for impairment whenever events or changes in circumstances indicate an asset's carrying value may not be recoverable. There was no impairment of intangible assets experienced during the year ended December 31, 2022 or 2021.

Goodwill

The Company records goodwill when the consideration paid in a business combination exceeds the fair value of the net tangible assets and the identified intangible assets acquired. Goodwill is not amortized, but instead is required to be tested for impairment annually and whenever events or changes in circumstances indicate that the carrying value of goodwill may exceed its fair value.

The Company reviews goodwill for impairment annually in its fourth quarter by initially considering qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount, including goodwill, as a basis for determining whether it is necessary to perform a quantitative analysis. If it is determined that it is more likely than not that the fair value of reporting unit is less than its carrying amount, a quantitative analysis is performed to identify goodwill impairment. There was no impairment of goodwill experienced during the year ended December 31, 2022 or 2021.

Impairment of Long-Lived Assets

The Company reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. When such an event occurs, management determines whether there has been impairment by comparing the anticipated undiscounted future net cash flows to the related asset group's carrying value. If

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an asset is considered impaired, the asset is written down to fair value, which is determined based either on discounted cash flows or appraised value, depending on the nature of the asset. There was no impairment experienced of long-lived assets during the years ended December 31, 2022 or 2021.

Convertible Senior Notes

The Company's convertible senior notes issued in December 2021 are accounted for as a single liability instrument measured at its amortized cost, as no other embedded features require bifurcation and recognition as derivatives.

Product Warranties

Estimated future warranty costs are accrued and charged to cost of sales in the period that the related revenue is recognized. These estimates are based on historical warranty experience and any known or expected changes in warranty exposure, such as trends of product reliability and costs of repairing and replacing defective products. The Company periodically assesses the adequacy of its recorded warranty liabilities and adjusts the said estimates as necessary.

Public and Private Warrants

As part of Gores' initial public offering on February 5, 2019, Gores issued to third party investors 40.0 million units, consisting of one share of Class A common stock of Gores and one-third of one warrant, at a price of \$10.00 per unit. Each whole warrant entitled the holder to purchase one share of Class A common stock at an exercise price of \$11.50 per share (the "Public Warrants"). Simultaneously with the closing of the IPO, Gores completed the private sale of 6.667 million warrants to Gore's sponsor at a purchase price of \$1.50 per warrant (the "Private Warrants"). Each Private Warrant allows the sponsor to purchase one share of Class A common stock at \$11.50 per share. Subsequent to the Business Combination, 13,333,309 Public Warrants and 6,666,666 Private Warrants remained outstanding as of December 31, 2020.

The Private Warrants and the shares of common stock issuable upon the exercise of the Private Warrants were not transferable, assignable or salable until after the completion of a Business Combination, subject to certain limited exceptions. Additionally, the Private Warrants are exercisable for cash or on a cashless basis, at the holder's option, and are non-redeemable so long as they are held by the initial purchasers or their permitted transferees. If the Private Warrants are held by someone other than the initial purchasers or their permitted transferees, said Private Warrants will be redeemable by the Company and exercisable by such holders on the same basis as the Public Warrants.

The exercise of the Private Warrants may be settled in cash upon the occurrence of a tender offer or exchange that involves 50% or more of the Company's Class A stockholders. Public Warrants contained the same feature. Since not all of the Company's stockholders need to participate in such tender offer or exchange to trigger the potential cash settlement and the Company does not control the occurrence of such an event, the Company concluded that the Public Warrants and Private Warrants do not meet the conditions to be classified in equity per the guidance in ASC 815-40, *Derivatives and Hedging—Contracts in Entity's Own Equity*. Since the Public and Private Warrants meet the definition of a derivative under ASC 815, the Company recorded these warrants as liabilities on the balance sheet at fair value upon the closing of the Business Combination, with subsequent changes in their respective fair values recognized in the consolidated statement of operations and comprehensive loss at each reporting date.

In the first quarter of 2021, 3,589,645 Private Warrants and 13,128,671 Public Warrants were exercised, and the Company received \$153.9 million in cash proceeds from the exercise of these warrants. Pursuant to the terms of the agreements governing the rights of the holders of the Public Warrants, the Company redeemed the remaining unexercised and outstanding 204,638 Public Warrants for a redemption price of \$0.01 per Public Warrant.

The Company had 3,077,021 Private Warrants and no Public Warrants, outstanding as of December 31, 2021.

In January 2022 and April 2022, 1,389,529 and 19,223 Private Warrants, respectively, were exercised on a cashless basis and the Company issued 401,365 and 4,387 shares of Class A common stock, respectively, pursuant to the exercises. The Company had 1,668,269 Private Warrants outstanding as of December 31, 2022. These Private Warrants expire on December 2, 2025.

Revenue Recognition

Under ASC 606, the Company determines revenue recognition through the following steps:

- Identifying the contract, or contracts, with the customer;
- Identifying the performance obligations in the contract;

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- Determining the transaction price;
- Allocating the transaction price to performance obligations in the contract; and
- Recognizing revenue when, or as, the Company satisfies performance obligations by transferring the promised goods or services.

Nature of Products and Services and Revenue Recognition

The Autonomy Solutions segment derives revenue primarily from (a) product sales of lidar sensors to customers and distributors, (b) NRE services to integrate Luminar lidar hardware for autonomy in vehicle platforms, and (c) licensing of certain IP.

The ATS segment derives revenue primarily from (a) product sales of application-specific integrated circuits, pixel-based sensors and advanced lasers, as well as (b) NRE services for designing and testing non-standard integrated circuits.

Revenue from product sales is recognized at a point in time when control of the goods is transferred to the customer, generally occurring upon shipment or delivery dependent upon the terms of the underlying contract. Certain customer arrangements involve NRE services to design and develop custom prototype products to customers. Revenue from NRE service arrangements is recognized over time.

For NRE services, the Company recognizes revenue over time using an input method based on contract cost incurred to date compared to total estimated contract costs (cost-to-cost). For NRE service projects, the Company contracts with customers based on hourly rates or on a fixed fee basis. For arrangements based on hourly rates, revenue is recognized as services are performed and amounts are earned in accordance with the terms of a contract at estimated collectible amounts. For arrangements based on a fixed fee, revenue is recognized based on the progress or the percentage of completion of the NRE service project. Expenses associated with performance of work may be reimbursed with a markup depending on contractual terms and are included in revenue.

Contract costs related to NRE arrangements are incurred over time, which can be several years, and the estimation of these costs requires management's judgment. Significant judgment is required when estimating total contract costs and progress to completion on the arrangements, as well as whether a loss is expected to be incurred on the contract. In estimating total contract costs, the Company is also required to estimate the effort expected to be incurred to complete a NRE project. These estimates are subject to significant estimation uncertainty as actual time and effort incurred on completing a NRE project or actual rates of either internal or contracted personnel working on such NRE projects may differ from the Company's estimates. Changes in circumstances may change the original estimates of revenues, costs, or extent of progress toward completion, revisions to the estimates are made which may result in increases or decreases in estimated revenues or costs, and such revisions are reflected in income in the period in which the circumstances that gave rise to the revision become known to us. We perform ongoing profitability analysis of our contracts accounted for under this method to determine whether the latest estimates of revenues, costs, and profits require updating. If at any time these estimates indicate that the contract will be unprofitable, the entire estimated loss for the remainder of the contract is recorded immediately.

The Company enters into term-based licenses that provide customers the right to use certain IP available with the Company. Revenue from these licenses is recognized at the point in time at which the customer is able to use and benefit from the licensed information, which is generally upon delivery of the information to the customer or upon commencement of the renewal term.

Amounts billed to customers for shipping and handling are included in revenue. Taxes collected from customers and remitted to governmental authorities are excluded from revenue on the net basis of accounting.

Arrangements with Multiple Performance Obligations

When a contract involves multiple performance obligations, the Company accounts for individual products and services separately if the customer can benefit from the product or service on its own or with other resources that are readily available to the customer and the product or service is separately identifiable from other promises in the arrangement. The consideration is allocated between separate performance obligations in proportion to their estimated standalone selling price. The transactions to which the Company had to estimate standalone selling prices and allocate the arrangement consideration to multiple performance obligations were immaterial.

The Company provides standard product warranties for a term of typically up to one year to ensure that its products comply with agreed-upon specifications. Standard warranties are considered to be assurance type warranties and are not accounted for as separate performance obligations. See Product Warranties for accounting policy on standard warranties.

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Other Policies, Judgments and Practical Expedients

Contract balances. Contract assets and liabilities represent the differences in the timing of revenue recognition from the receipt of cash from the Company's customers and billings. Contract assets reflect revenue recognized and performance obligations satisfied in advance of customer billing. Contract liabilities relate to payments received in advance of the satisfaction of performance under the contract. Receivable represents right to consideration that is unconditional. Such rights are considered unconditional if only the passage of time is required before payment of that consideration is due.

Remaining performance obligations. Revenue allocated to remaining performance obligations represents the transaction price allocated to the performance obligations that are unsatisfied, or partially unsatisfied. It includes unearned revenue and amounts that will be invoiced and recognized as revenue in future periods and does not include contracts where the customer is not committed. The customer is not considered committed where they are able to terminate for convenience without payment of a substantive penalty under the contract. The Company has elected the optional exemption, which allows for the exclusion of the amounts for remaining performance obligations that are part of contracts with an original expected duration of one year or less.

Significant financing component. In certain arrangements, the Company receives payment from a customer either before or after the performance obligation has been satisfied. Typically, the expected timing difference between the payment and satisfaction of performance obligations is one year or less; therefore, the Company applies a practical expedient and does not consider the effects of the time value of money. The Company's contracts with customer prepayment terms do not include a significant financing component because the primary purpose is not to receive or provide financing from or to the customers.

Contract modifications. The Company may modify contracts to offer customers additional products or services. Each of the additional products and services are generally considered distinct from those products or services transferred to the customer before the modification. The Company evaluates whether the contract price for the additional products and services reflects the standalone selling price as adjusted for facts and circumstances applicable to that contract. In these cases, the Company accounts for the additional products or services as a separate contract. In other cases where the pricing in the modification does not reflect the standalone selling price as adjusted for facts and circumstances applicable to that contract, the Company accounts on a prospective basis where the remaining goods and services are distinct from the original items and on a cumulative catch-up basis when the remaining goods and services are not distinct from the original items.

Judgments and estimates. Accounting for contracts recognized over time involves the use of various techniques to estimate total contract revenue and costs. Due to uncertainties inherent in the estimation process, it is possible that estimates of costs to complete a performance obligation will be revised in the near term. The Company reviews and updates its contract-related estimates regularly, and records adjustments as needed. For those performance obligations for which revenue is recognized using a cost-to-cost input method, changes in total estimated costs, and related progress towards complete satisfaction of the performance obligation, are recognized on a cumulative catch-up basis in the period in which the revisions to the estimates are made.

Cost of Sales

The Company includes all manufacturing and sourcing costs incurred prior to the receipt of finished goods at its distribution facility in cost of sales. The cost of sales principally includes personnel-related costs (including certain engineering personnel), including stock-based compensation, directly associated with the Company's manufacturing organization, direct costs, product costs, purchasing costs, allocation of overhead costs associated with manufacturing operations, inbound freight charges, insurance, inventory write-downs, warranty cost and depreciation and amortization expense associated with the manufacturing and sourcing operations. Cost of sales also includes the direct cost and appropriate allocation of overhead costs involved in execution of service contracts.

Research and Development (R&D)

R&D expenses consist primarily of personnel-related expenses, consulting and contractor expenses, tooling and prototype materials to the extent no future benefit is expected and allocated overhead costs. Substantially all of the Company's R&D expenses are related to developing new products and services, improving existing products and services, and developing manufacturing processes. R&D expenses are expensed as incurred.

Design and development costs for products to be sold under long-term supply arrangements are expensed as incurred. Design and development costs for molds, dies, and other tools involved in new technologies are expensed as incurred. Design and development costs for molds, dies, and other tools that will be used in producing the products under a long-term supply arrangement are capitalized as part of the molds, dies, and other tools.

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Stock-based Compensation

Employee awards

For equity classified awards, the Company measures the cost of share-based awards granted to employees, non-employees and directors based on the grant-date fair value of the awards. The grant-date fair value of the stock options is calculated using a Black-Scholes option pricing model. The grant-date fair value of purchase rights under the Company's 2020 Employee Stock Purchase Plan ("ESPP") is calculated using a Black-Scholes option pricing model. The grant-date fair value of restricted stock is calculated based on the fair value of the underlying common stock less cash proceeds paid by the recipient to acquire the restricted stock, if any. The grant-date fair value of restricted stock unit is calculated based on the fair value of the underlying common stock. The grant-date fair value of stock-based awards with market conditions is calculated using a Monte Carlo simulation model. The fair value of the stock-based compensation is recognized on a straight-line basis over the requisite service period, which is generally the vesting period of the award. The Company has elected to recognize the effect of forfeitures in the period they occur.

The Company grants fixed value share-based awards to certain employees, wherein the awardee is entitled to a fixed dollar value compensation settled by issuing shares on the vesting date, with the number of shares determined based on the Company's stock price on or close to the settlement date. These fixed value equity awards are considered as liability classified awards. The Company measures the cost of fixed value share-based awards granted to employees based on a fixed monetary amount that is known at the inception of the obligation. The Company records the compensation cost for the fixed dollar amount of the award over the vesting period, with a corresponding liability.

Stock-based payments to vendors / non-employees

The Company has entered into arrangements with certain vendors and other third parties wherein the Company at its discretion may elect to compensate the respective vendors for services provided in either cash or by issuing shares of the Company's Class A common stock ("Stock-in-lieu of Cash Program"). Typically, the amounts owed under the Stock-in-lieu of Cash Program are settled by issuing shares, with the number of shares generally determined based on the Company's stock price on or close to the settlement date. Payments owed under this program may be equity or liability classified depending upon fixed or variable number of shares issued for the amount owed to vendors. The Company measures the cost based on a fixed monetary amount that is known at the inception of the obligation.

Income Taxes

Income taxes are accounted for under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of the differences between the financial statement and tax bases of assets and liabilities by using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

The Company recognizes deferred tax assets to the extent that these assets are more likely than not to be realized. In making such a determination, all available positive and negative evidence are considered, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. If it is determined that deferred tax assets would be realized in the future, in excess of their net recorded amount, an adjustment would be made to the deferred tax asset valuation allowance, which would reduce the provision for income taxes.

The Company records uncertain tax positions in accordance with ASC 740, *Income Taxes*, on the basis of a two-step process which includes (1) determining whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position, and (2) for those tax positions that meet the more-likely-than-not recognition threshold. Recognized income tax positions are measured at the largest amount of tax benefit that is more than 50% likely to be realized upon ultimate settlement with the related tax authority.

The Company recognizes interest and penalties related to unrecognized tax benefits on the income tax expense line in the accompanying consolidated statement of operations. Accrued interest and penalties are included on the related tax liability line in the consolidated balance sheet.

The Tax Cuts and Jobs Act ("TCJA") subjects a U.S. shareholder to tax on global intangible low-taxed income ("GILTI") earned by certain foreign subsidiaries. Under GAAP, the Company can make an accounting policy election to either

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treat taxes due on the GILTI inclusion as a current period expense or factor such amounts into the Company's measurement of deferred taxes. The Company elected to treat the GILTI inclusion as a period expense.

Recently Adopted Accounting Pronouncements

In October 2021, the Financial Accounting Standards Board ("FASB") issued Accounting Standard Update ("ASU") No. ASU 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* ("ASU 2021-08"). ASU 2021-08 requires an acquirer to recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with Topic 606. At the acquisition date, it requires an acquirer to account for the related revenue contracts in accordance with Topic 606 as if it had originated the contracts, which should generally result in an acquirer recognizing and measuring the acquired contract assets and contract liabilities consistent with how they were recognized and measured in the acquiree's financial statements. The Company elected to early adopt ASU 2021-08 as of January 1, 2022. The adoption of ASU 2021-08 did not have a material impact on the Company's consolidated financial position, operating results or cash flows.

Note 3. Business Combinations

Freedom Photonics Acquisition

On April 13, 2022 (the "Acquisition Date"), the Company completed its acquisition of Freedom Photonics, a designer and manufacturer of high-performance lasers and related photonic products. The Freedom Photonics acquisition is expected to help the Company secure intellectual property and the supply of a key enabling component as part of the Company's vertical integration strategy.

Pursuant to the terms of the Merger Agreement between the Company and Freedom Photonics, the Company acquired all of the issued and outstanding units of capital of Freedom Photonics for an aggregate purchase price of approximately \$34.6 million payable primarily in Class A common stock of the Company. The purchase price includes a \$0.4 million adjustment to the preliminary estimates of working capital. In conjunction with the acquisition, the Company issued share-based compensation awards to certain employees and selling equity holders of Freedom Photonics, which may result in future stock-based compensation expense, subject to achievement of certain service and performance conditions, including certain technical and financial milestones. These post-combination shared-based awards were determined to be compensatory in nature and consequently are being expensed over the vesting period of these awards. The results of operations related to Freedom Photonics are included in the Company's consolidated statements of operations beginning from the Acquisition Date. As part of the transaction, the Company incurred \$1.4 million of acquisition-related costs, which were expensed and included in general and administrative expenses in the periods in which the costs were incurred.

Recording of Assets Acquired and Liabilities Assumed

Preliminary estimates of fair values included in the consolidated financial statements are expected to be finalized within a year following the Acquisition Date. These are related to certain working capital adjustments and finalization of the estimates relating to deferred tax balances which will occur after the filing of the current tax returns. After the measurement period, any subsequent adjustments will be reflected in the consolidated statements of operations.

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The following table summarizes the preliminary purchase price allocation to assets acquired and liabilities assumed, including identification of measurement period adjustments (in thousands):

	Preliminary Recorded Value
Cash and cash equivalents	\$ 1,063
Accounts receivable	3,311
Contract asset	1,913
Inventories, net	127
Prepaid expenses and other current assets	70
Property and equipment	1,353
Operating lease right-of-use assets	449
Other non-current assets	22
Intangible assets (1)	15,600
Goodwill (2)	15,885
Total assets acquired	39,793
Current and non-current liabilities	(5,158)
Total liabilities assumed	(5,158)
Net assets acquired	<u>\$ 34,635</u>

(1) Tradename was measured using the relief-from-royalty method. The remaining identifiable intangible assets were measured using the income approach. Significant inputs used as part of the valuation of intangible assets include revenue forecasts, present value factors, expected product margins and costs to complete the IPR&D.

(2) Goodwill is the excess of the consideration transferred over the net assets recognized and represents the expected future economic benefits as a result of other assets acquired that could not be individually identified and separately recognized. Goodwill is not amortized. The factors that made up goodwill recognized included assembled workforce and component cost savings. The entire amount of goodwill is expected to be deductible for tax purposes and is allocated to the ATS segment, which is also deemed the reporting unit.

Identifiable intangible assets recognized (in thousands):

	Useful Life	Preliminary Recorded Value
Customer backlog	2 years	\$ 650
Customer relationships	4 years	2,950
Developed technology	8 years	4,000
In-process research and development (IPR&D) (1)		7,500
Tradename	4 years	500
Total intangible assets		<u>\$ 15,600</u>

(1) IPR&D intangibles are treated as indefinite-lived until the completion or abandonment of the associated R&D project, at which time the appropriate useful lives will be determined.

Supplemental Unaudited Pro Forma Information

The following unaudited pro forma financial information summarizes the combined results of operations for the Company and Freedom Photonics as if the companies were combined as of the beginning of fiscal year 2021. The unaudited pro forma information includes adjustments to amortization and depreciation for intangible assets and property and equipment acquired, the purchase accounting effect on transaction costs, and stock-based compensation expense.

The table below reflects the impact of adjustments to the unaudited pro forma results for the years ended December 31, 2022 and 2021 that are directly attributable to the acquisition (in thousands):

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	December 31,	
	2022	2021
	(Unaudited)	
(Decrease) / increase to expenses as a result of transaction costs	\$ (2,582)	\$ 2,795
(Decrease) / increase to expenses as a result of stock-based compensation expense	4,119	19,593

Nonrecurring pro forma adjustments include:

- Transaction costs of \$2.8 million are assumed to have occurred on January 1, 2021, and are recognized as if incurred in the first quarter of 2021;
- Employee compensation in connection with the retention awards, incentive plan awards, sign-on bonuses, and deferred shares are assumed to have started on January 1, 2021, and recognized as incurred based on their respective periods.

The unaudited pro forma information presented below is for informational purposes only and is not necessarily indicative of our consolidated results of operations of the combined business had the acquisition actually occurred at the beginning of fiscal year 2021 or the results of our future operations of the combined businesses (in thousands).

	December 31,	
	2022	2021
	(Unaudited)	
Revenue	\$ 46,422	\$ 49,804
Net loss	(447,736)	(260,813)

Solfice Assets Acquisition

On June 15, 2022, the Company completed its acquisition from Solfice of certain assets for an aggregate consideration of \$6.3 million, payable in Class A common stock of the Company, that are expected to advance Luminar's mapping software development capabilities. The transaction was determined to be an asset acquisition under ASC 805, Business Combinations, with substantially all of the fair value attributable to acquired technology.

Optogration Acquisition

On August 3, 2021, (the "Optogration Acquisition Date") the Company completed its acquisition of Optogration. The Optogration acquisition helps the Company secure intellectual property and supply of Indium Gallium Arsenide ("InGaAs") photodetector semiconductor chips, which are used to convert optical power into an electrical current. The acquisition of Optogration is part of the Company's vertical integration strategy, which helps to secure the supply of a key component of its sensor technology.

Pursuant to the terms of the Stock Purchase Agreement between the Company and Optogration, the Company acquired all of the issued and outstanding capital stock of Optogration for an aggregate purchase price of approximately \$6.3 million payable in Class A common stock of the Company. Subsequent to the Optogration Acquisition Date, up to \$22.0 million of post combination share-based awards may be payable to certain selling shareholders of Optogration, subject to certain service and performance conditions. These post combination shared-based awards were determined to be compensatory in nature and consequently are being expensed over the vesting period of these awards. In August 2022, the Company issued 1,632,056 shares of Class A common stock for \$11.0 million of the Optogration Milestone Awards due to achievement of the service and performance conditions. As of December 31, 2022, it is probable that the service and performance conditions for the remaining \$11.0 million obligation will be met.

The results of operations related to Optogration are included in the Company's consolidated statements of operations beginning from the Optogration Acquisition Date. The impact of the acquisition on the consolidated financial results of the Company for the year ended December 31, 2021 was not material.

Recording of Assets Acquired and Liabilities Assumed

Estimates of fair value included in the consolidated financial statements, in conformity with ASC 820, Fair Value Measurement, represent the Company's best estimates and valuations. In accordance with ASC 805, Business Combinations, the allocation of the consideration value is subject to adjustment until the Company has completed its analysis, but not to exceed one year after the Optogration Acquisition Date to provide the Company with the time to complete the valuation of its assets and liabilities.

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Settlement of a pre-existing agreement with Optogration

Prior to the acquisition, the Company had contracted with Optogration as a supplier. In assessing whether said pre-existing supply contract was at market, favorable or unfavorable from the Company's perspective, the Company assessed whether the terms of the supply contract, including pricing, were consistent with what the Company would have required from another company that would have contracted for similar products and production volumes. The Company concluded that the supply agreement was at market, and thus no gain or loss was recognized upon effective settlement of the pre-existing supply agreement.

The following table summarizes the purchase price allocation to assets acquired and liabilities assumed, including identification of measurement period adjustments:

	<u>Recorded Value</u>
Cash and cash equivalents	\$ 358
Accounts receivable	810
Other current assets	482
Property and equipment	1,248
Other non-current assets	384
Intangible assets (1)	2,650
Goodwill (2)	2,244
Total assets acquired	8,176
Current Liabilities	(488)
Non-current liabilities	(1,346)
Total liabilities assumed	(1,834)
Net assets acquired	<u>\$ 6,342</u>

(1) Identifiable intangible assets were measured using the income approach.

(2) Goodwill is the excess of the consideration transferred over the net assets recognized and represents the expected future economic benefits as a result of other assets acquired that could not be individually identified and separately recognized. Goodwill is not amortized. The factors that made up the goodwill recognized included assembled workforce and component cost savings. Goodwill is not expected to be deductible for tax purposes.

Identifiable intangible assets recognized:

	<u>Useful Life</u>	<u>Recorded Value</u>
Customer relationships	10 years	\$ 780
Tradenname	≤ 1 year	120
Developed technology	10 years	1,750
Total intangible assets		<u>\$ 2,650</u>

Reverse Merger with Gores

On December 2, 2020, Gores consummated the Business Combination pursuant to that certain Agreement and Plan of Merger, dated August 24, 2020 (the "Merger Agreement"), by and among Gores, Dawn Merger Sub, Inc. ("First Merger Sub"), a wholly owned subsidiary of Gores, Dawn Merger Sub II, LLC ("Second Merger Sub"), a wholly owned subsidiary of Gores, and Legacy Luminar. In connection with the consummation of the Business Combination (the "Closing"), the registrant changed its name from Gores Metropoulos, Inc. to Luminar Technologies, Inc.

Immediately following the Business Combination, there were 323,936,240 shares of common stock, consisting of 218,818,037 shares of Class A common stock and 105,118,203 shares of Class B common stock with a par value of \$0.0001 issued and outstanding, options to purchase an aggregate of 16,224,474 shares of Class A common stock and warrants to purchase, 4,089,280 shares of Class A common stock.

Pursuant to the Merger Agreement, the Company's stockholders were entitled to receive an aggregate of up to 25,819,887 earn-out shares in the form of common stock (with respect to the Company's Class A stockholders' shares of Class A common stock and with respect to the Company's Class B stockholders' shares of Class B common stock). There were six

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different triggering events that affect the number of earn-out shares that will be issued based upon the per share price of Class A common stock ranging from \$13.00 to \$28.00 per share. On August 11, 2021, the Company issued a total of 17,213,170 earn-out shares towards additional consideration in the form of common stock, consisting of 10,242,703 shares of Class A common stock and 6,970,467 shares of Class B common stock, upon meeting four of six triggering events. The shares issued were based upon the Class A common stock trading price exceeding \$13.00, \$16.00, \$19.00 and \$22.00 per share for a certain period of time. There are 5,121,484 shares of Class A common stock and 3,485,233 shares of Class B common stock remaining under the Merger Agreement, which will be issued in equal parts if the Class A common stock share price exceeds \$25.00 and \$28.00 per share for a certain period of time.

The Company accounts for the potential earn-out shares as a component of stockholders' equity in accordance with the guidance in ASC 480, *Distinguishing Liabilities from Equity*, and ASC 815, *Derivatives and Hedging*. On December 2, 2020, the Company estimated the fair value of the potential earn-out shares to be \$587.7 million, which was estimated using a Monte Carlo Model and Level 3 fair value inputs including volatility of 58.5% and a contractual term of 5.5 years. This was recorded as an increase in additional paid-in capital with an offsetting amount recorded in the same account, due to the absence of retained earnings.

The Business Combination was accounted for as a reverse recapitalization in accordance with GAAP as Legacy Luminar has been determined to be the accounting acquirer, primarily due to the fact that Legacy Luminar stockholders continue to control the post-combination Company. Under this method of accounting, while Gores was the legal acquirer, it has been treated as the "acquired" company for financial reporting purposes. Accordingly, the Business Combination was treated as the equivalent of Legacy Luminar issuing stock for the net assets of Gores, accompanied by a recapitalization. The net assets of Gores were stated at historical cost, with no goodwill or other intangible assets recorded. Operations prior to the Business Combination are those of Legacy Luminar. Reported shares and earnings per share available to holders of the Company's common stock, prior to the Business Combination, have been retroactively restated as shares reflecting the exchange ratio established in the Business Combination (approximately 1 Gores shares to 13.63094 Luminar shares).

The Company incurred \$17.2 million in transaction costs relating to the merger with Gores, which has been offset against additional paid-in capital in the Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit). On the date of the Business Combination, the Company recorded a liability related to the Public and Private Warrants of \$102.4 million, with an offsetting entry to additional paid-in capital.

Upon closing of the Business Combination, the shareholders' of Gores were issued 49,981,349 shares of Class A common stock. In connection with the Closing, holders of 18,651 shares of common stock of Gores were redeemed at a price per share of \$10.16.

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Note 4. Revenue

The Company's revenue is comprised of sales of lidar sensors hardware, components, NRE services and licensing of certain information available with the Company.

Disaggregation of Revenues

The Company disaggregates its revenue from contracts with customers by (1) geographic region based on customer's billed to location, and (2) type of good or service and timing of transfer of goods or services to customers (point-in-time or over time), as it believes it best depicts how the nature, amount, timing and uncertainty of its revenue and cash flows are affected by economic factors. Total revenue based on the disaggregation criteria described above, as well as revenue by segment, are as follows (in thousands):

	Year Ended December 31,					
	2022		2021		2020	
	Revenue	% of Revenue	Revenue	% of Revenue	Revenue	% of Revenue
Revenue by primary geographical market:						
North America	\$ 35,032	86%	\$ 23,043	72%	\$ 4,010	29%
Asia Pacific	3,703	9%	2,502	8%	906	6%
Europe and Middle East	1,963	5%	6,399	20%	9,035	65%
Total	40,698	100%	31,944	100%	13,951	100%
Revenue by timing of recognition:						
Recognized at a point in time	17,595	43%	8,892	28%	2,639	19%
Recognized over time	23,103	57%	23,052	72%	11,312	81%
Total	40,698	100%	31,944	100%	13,951	100%
Revenue by segment:						
Autonomy Solutions	24,353	60%	28,497	89%	11,387	82%
ATS	16,345	40%	3,447	11%	2,564	18%
Total	40,698	100%	31,944	100%	13,951	100%

Volvo Stock Purchase Warrant

In March 2020, the Company issued a stock purchase warrant ("Volvo Warrants") to Volvo Car Technology Fund AB ("VCTF") in connection with an engineering services contract. The Volvo Warrants entitle VCTF to purchase up to 4,089,280 shares of Class A common stock, at a price of \$3.1769 per share from the Company and were determined to be an equity classified award to VCTF. The Volvo Warrants vest and become exercisable in two tranches based on satisfaction of certain commercial milestones, upon reaching commercial production and delivery of production units. The grant date fair value of the Volvo Warrants, aggregating \$2.9 million, represents consideration payable to VCTF and is being recognized as reduction in revenue consistent with the revenue recognition pattern when these warrants become probable of vesting. The Company's management determined that the vesting of the first of the two tranches of the Volvo Warrants was probable as of December 31, 2021. As such, the Company had recognized a reduction in revenue in the amount of \$1.0 million related to the said first tranche of the Volvo Warrants in the year ended December 31, 2021. The second tranche of the Volvo warrants will be recorded as a reduction in revenue upon achievement of sales of a certain number of the Company's sensors to Volvo for use in their commercial vehicles. This threshold had not been achieved as of December 31, 2022.

Contract assets and liabilities

Contract assets primarily represent revenues recognized for performance obligations that have been satisfied but for which amounts have not been billed. The Company's contract assets as of December 31, 2022 and 2021 were \$18.0 million and \$9.9 million. Contract liabilities consist of deferred revenue and customer advanced payments. Deferred revenue includes billings in excess of revenue recognized related to product sales and other services revenue and is recognized as revenue when the Company performs under the contract. Customer advanced payments represent required customer payments in advance of product shipments according to customer's payment term. Customer advance payments are recognized as revenue when control of the performance obligation is transferred to the customer. The Company's contract liabilities were \$3.0 million and \$0.9 million as of December 31, 2022 and 2021, respectively, and were included in accrued and other current and non-current liabilities in the consolidated balance sheets.

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The opening and closing balances of contract assets were as follows (in thousands):

	December 31,	
	2022	2021
Contract assets, current	\$ 15,395	\$ 9,907
Contract assets, non-current	2,575	—
Ending balance	<u>\$ 17,970</u>	<u>\$ 9,907</u>

The significant changes in contract assets balances consisted of the following (in thousands):

	December 31,	
	2022	2021
Beginning balance	\$ 9,907	\$ —
Amounts billed that were included in the contract assets beginning balance	(4,228)	—
Revenue recognized for performance obligations that have been satisfied but for which amounts have not been billed	12,291	9,907
Ending balance	<u>\$ 17,970</u>	<u>\$ 9,907</u>

The opening and closing balances of contract liabilities were as follows (in thousands):

	December 31,	
	2022	2021
Contract liabilities, current	\$ 1,993	\$ 898
Contract liabilities, non-current	1,015	—
Ending balance	<u>\$ 3,008</u>	<u>\$ 898</u>

The significant changes in contract liabilities balances consisted of the following (in thousands):

	December 31,	
	2022	2021
Beginning balance	\$ 898	\$ 2,284
Revenue recognized that was included in the contract liabilities beginning balance	(489)	(1,792)
Increase due to cash received and not recognized as revenue and billings in excess of revenue recognized during the period	2,599	406
Ending balance	<u>\$ 3,008</u>	<u>\$ 898</u>

Remaining Performance Obligations

Revenue allocated to remaining performance obligations was \$39.7 million as of December 31, 2022 and includes amounts within contract liabilities. The Company expects to recognize approximately 82% of this revenue over the next 12 months and the remainder thereafter.

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Note 5. Investments

Debt Securities

The Company's investments in debt securities consisted of the following as of December 31, 2022 and 2021 (in thousands):

	December 31, 2022			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. treasury securities	\$ 191,075	\$ 3	\$ (2,598)	\$ 188,480
U.S. agency and government sponsored securities	4,999	—	(75)	4,924
Commercial paper	74,755	—	(232)	74,523
Corporate bonds	111,123	—	(1,214)	109,909
Asset-backed securities	11,945	—	(110)	11,835
Total debt securities	<u>\$ 393,897</u>	<u>\$ 3</u>	<u>\$ (4,229)</u>	<u>\$ 389,671</u>
Included in marketable securities	\$ 393,897	\$ 3	\$ (4,229)	\$ 389,671

	December 31, 2021			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. treasury securities	\$ 161,938	\$ 1	\$ (474)	\$ 161,465
U.S. agency and government sponsored securities	4,995	—	(25)	4,970
Commercial paper	40,788	—	(4)	40,784
Corporate bonds	165,522	13	(345)	165,190
Asset-backed securities	46,540	—	(74)	46,466
Total debt securities	<u>\$ 419,783</u>	<u>\$ 14</u>	<u>\$ (922)</u>	<u>\$ 418,875</u>
Included in cash and cash equivalents	\$ 950	\$ —	\$ —	\$ 950
Included in marketable securities	\$ 418,833	\$ 14	\$ (922)	\$ 417,925

The following table presents the gross unrealized losses and the fair value for those debt securities that were in an unrealized loss position for less than 12 months as of December 31, 2022 and 2021 (in thousands):

	December 31, 2022		December 31, 2021	
	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value
U.S. treasury securities	\$ (2,598)	\$ 158,888	\$ (474)	\$ 146,454
U.S. agency and government sponsored securities	(75)	4,924	(25)	4,970
Commercial paper	(232)	74,523	(4)	30,285
Corporate bonds	(1,214)	109,909	(345)	145,522
Asset-backed securities	(110)	11,835	(74)	45,251
Total	<u>\$ (4,229)</u>	<u>\$ 360,079</u>	<u>\$ (922)</u>	<u>\$ 372,482</u>

As of December 31, 2022, the total amortized cost basis of the Company's available-for-sale securities exceeded its fair value by \$4.2 million, which was primarily attributable to widening credit spreads and rising interest rates since purchase. The Company reviewed its available-for-sale securities and concluded that the decline in fair value was not related to credit losses and that it is more likely than not that the entire amortized cost of each security will be recoverable before the Company is required to sell them or when the security matures. Accordingly, during the year ended December 31, 2022, no allowance for credit losses was recorded and instead the unrealized losses are reported as a component of accumulated other comprehensive income (loss).

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Equity Investments

The Company's equity investments consisted of the following as of December 31, 2022 and 2021 (in thousands):

	<u>Consolidated Balance Sheets Location</u>	<u>December 31,</u>	
		<u>2022</u>	<u>2021</u>
Money market funds ⁽¹⁾	Cash and cash equivalents	\$ 42,056	\$ 25,654
Marketable equity investments ⁽¹⁾	Marketable securities	29,643	44,216
Non-marketable equity investment measured using the measurement alternative ⁽²⁾	Other non-current assets	4,000	10,002
		<u>\$ 75,699</u>	<u>\$ 79,872</u>

(1) Investments with readily determinable fair values.

(2) Investment in privately held company without readily determinable fair value.

In December 2021, the Company made an investment in 1,495 Class A Preferred Units of Robotic Research OpCo, LLC ("Robotic Research") for consideration of \$10.0 million, which was settled by issuing 618,924 shares of Class A common stock of the Company. The Company's investment in Robotic Research represents less than 5% of Robotic Research's capitalization. The Company neither has a significant influence over Robotic Research nor does its investment amount to a controlling financial interest in Robotic Research. As such, the Company measured the initial investment in Robotic Research at cost as provided under the guidance for measurement of equity investment using the measurement alternative. In the fourth quarter of 2022, the Company recorded an impairment charge of \$6.0 million related to the investment in Robotic Research.

In December 2022, the Company made an investment in 1,500,000 Class A ordinary shares of ECARX Holdings Inc., ("ECARX") for consideration of \$15.0 million, which was settled by issuing 2,030,374 shares of Class A common stock of the Company. The Company's investment in ECARX represents less than 5% of ECARX's capitalization. The Company neither has a significant influence over ECARX nor does its investment amount to a controlling financial interest in ECARX. The Company measured the investment in ECARX using the quoted prices in active markets with changes recorded in other income (expense), net on the consolidated statement of operations. Jun Hong Heng is a director of ECARX. Mr. Heng is also a director of Luminar.

Note 6. Financial Statement Components

Cash and Cash Equivalents

Cash and cash equivalents consisted of the following (in thousands):

	<u>December 31,</u>	
	<u>2022</u>	<u>2021</u>
Cash	\$ 27,496	\$ 303,373
Money market funds	42,056	25,654
Commercial paper	—	950
Total cash and cash equivalents	<u>\$ 69,552</u>	<u>\$ 329,977</u>

Inventory

Inventory consisted of the following (in thousands):

	<u>December 31,</u>	
	<u>2022</u>	<u>2021</u>
Raw materials	\$ 3,614	\$ 5,866
Work-in-process	2,329	1,171
Finished goods	2,849	3,305
Total inventory	<u>\$ 8,792</u>	<u>\$ 10,342</u>

The Company's inventory write-offs and write-downs (primarily due to obsolescence, lower of cost or market assessment, and other adjustments) was \$12.2 million, \$2.9 million and \$4.4 million during the years ended December 31, 2022, 2021 and 2020, respectively.

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Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consisted of the following (in thousands):

	December 31,	
	2022	2021
Prepaid expenses	\$ 15,653	\$ 14,651
Contract assets	15,395	9,907
Advance payments to vendors	7,919	1,810
Other receivables	5,236	2,827
Total prepaid expenses and other current assets	<u>\$ 44,203</u>	<u>\$ 29,195</u>

Property and Equipment

Property and equipment consisted of the following (in thousands):

	December 31,	
	2022	2021
Machinery and equipment	\$ 14,047	\$ 7,694
Computer hardware and software	6,797	2,854
Land	1,001	—
Leasehold improvements	885	869
Vehicles, including demonstration fleet	3,222	2,421
Furniture and fixtures	818	272
Construction in progress	13,642	3,677
Total property and equipment	40,412	17,787
Accumulated depreciation and amortization	(10,152)	(6,778)
Total property and equipment, net	<u>\$ 30,260</u>	<u>\$ 11,009</u>

Property and equipment capitalized under finance lease (capital lease prior to adoption of ASC 842) were not material. Construction in progress increased due to increased capital expenditure related to capital projects to enable the Company to achieve series production readiness.

Depreciation and amortization associated with property and equipment was \$4.3 million, \$3.9 million and \$2.5 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Intangible Assets

The following table summarizes the activity in the Company's intangible assets (in thousands):

	December 31,	
	2022	2021
Beginning of the period	\$ 2,424	\$ —
Additions	21,890	2,650
Amortization	(2,237)	(226)
End of the period	<u>\$ 22,077</u>	<u>\$ 2,424</u>

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Intangible assets were acquired in connection with the Company's acquisition of Optogration in August 2021, Freedom Photonics in April 2022 and Solrice in June 2022. See Note 3 for further details of these acquisitions. The components of intangible assets were as follows (in thousands):

	December 31, 2022				December 31, 2021			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted Average Remaining Period (Years)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted Average Remaining Period (Years)
Customer relationships	\$ 3,730	\$ (664)	\$ 3,066	4.4	\$ 780	\$ (33)	\$ 747	9.6
Customer backlog	650	(292)	358	0.9	—	—	—	—
Tradename	620	(214)	406	3.3	120	(120)	—	—
Assembled workforce	130	(130)	—	—	—	—	—	—
Developed technology	11,910	(1,163)	10,747	7.5	1,750	(73)	1,677	9.6
IPR&D	7,500	—	7,500	—	—	—	—	—
Total intangible assets	<u>\$ 24,540</u>	<u>\$ (2,463)</u>	<u>\$22,077</u>	6.6	<u>\$ 2,650</u>	<u>\$ (226)</u>	<u>\$ 2,424</u>	9.6

Amortization expense related to intangible assets was \$2.2 million, \$0.2 million and \$0.0 million for the year ended December 31, 2022, 2021 and 2020, respectively.

As of December 31, 2022, the expected future amortization expense for intangible assets was as follows (in thousands):

Period	Expected Future Amortization Expense
2023	\$ 2,730
2024	2,373
2025	2,373
2026	1,726
2027	1,510
Thereafter	3,865
IPR&D	7,500
Total	<u>\$ 22,077</u>

Goodwill

The carrying amount of goodwill allocated to the Company's reportable segments was as follows (in thousands):

	Autonomy Solutions	ATS	Total
Balance as of December 31, 2021	\$ 687	\$ 2,423	\$ 3,110
Acquired goodwill related to Freedom Photonics in 2022	—	15,885	15,885
Purchase accounting adjustments	—	(179)	(179)
Balance as of December 31, 2022	<u>\$ 687</u>	<u>\$ 18,129</u>	<u>\$ 18,816</u>

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Other Non-Current Assets

Other non-current assets consisted of the following (in thousands):

	December 31,	
	2022	2021
Security deposits	\$ 5,495	\$ 1,187
Non-marketable equity investment	4,000	10,002
Advance payment for capital projects	27,683	—
Contract assets	2,575	—
Other non-current assets	591	1,266
Total other non-current assets	<u>\$ 40,344</u>	<u>\$ 12,455</u>

Accrued and Other Current Liabilities

Accrued and other current liabilities consisted of the following (in thousands):

	December 31,	
	2022	2021
Accrued compensation and benefits	\$ 16,682	\$ 9,899
Accrued expenses	22,358	6,727
Warranty reserves	3,584	1,798
Contract liabilities	1,993	898
Accrued interest payable	359	316
Contract losses	7,526	115
Other	460	91
Total accrued and other current liabilities	<u>\$ 52,962</u>	<u>\$ 19,844</u>

During the year ended December 31, 2022, the Company recorded \$19.2 million in cost of sales (services) estimated losses expected to be incurred on NRE projects with certain customers. Estimated contract losses in the year ended December 31, 2021 and 2020 were not material. The estimated contract losses recorded in 2022 were primarily a result of (a) changes in estimates related to costs expected to be incurred for contractual milestones based on actual experience on similar projects and (b) changes in scope of project deliverables agreed upon with the respective customers during the year.

Note 7. Debt

Convertible Senior Notes and Capped Call Transactions

In December 2021, the Company issued \$625.0 million aggregate principal amount of 1.25% Convertible Senior Notes due 2026 in a private placement, which included \$75.0 million aggregate principal amount of such notes pursuant to the exercise in full of the option granted to the initial purchasers to purchase additional notes (collectively, the “Convertible Senior Notes”). The interest on the Convertible Senior Notes is payable semi-annually in arrears on June 15 and December 15 of each year, beginning on June 15, 2022. The Convertible Senior Notes will mature on December 15, 2026, unless earlier repurchased or redeemed by the Company or converted pursuant to their terms.

The total net proceeds from the debt offering, after deducting fees paid to the initial purchasers paid by the Company, was approximately \$609.4 million.

Each \$1,000 principal amount of the Convertible Senior Notes is initially convertible into 50.0475 shares of the Company’s Class A common stock, par value \$0.0001, which is equivalent to an initial conversion price of approximately \$19.98 per share. The conversion rate is subject to adjustment upon the occurrence of certain specified events prior to the maturity date but will not be adjusted for any accrued and unpaid interest. In addition, following certain corporate events that occur prior to the maturity date or if the Company delivers a notice of redemption in respect of some or all of the Convertible Senior Notes, the Company will, under certain circumstances, increase the conversion rate of the Convertible Senior Notes for a holder who elects to convert its Convertible Senior Notes in connection with such a corporate event or convert its Convertible Senior Notes called for redemption during the related redemption period, as the case may be. The Convertible Senior Notes are redeemable, in whole or in part (subject to certain limitations), at the Company’s option at any time, and from time to time, on or after December 20, 2024, and on or before the 40th scheduled trading day immediately before the maturity date, at a cash redemption price equal to the principal amount of the Convertible Senior Notes to be redeemed, plus accrued and unpaid

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interest, if any, to, but excluding, the redemption date, but only if certain liquidity conditions are satisfied and the last reported sale price per share of the Class A common stock exceeds 130% of the conversion price on (1) each of at least 20 trading days, whether or not consecutive, during the 30 consecutive trading days ending on, and including, the trading day immediately before the date the Company sends the related redemption notice, and (2) the trading day immediately before the date the Company sends such notice. If the Company undergoes a fundamental change (as defined in the indenture governing the Convertible Senior Notes) prior to the maturity date, holders may require the Company to repurchase for cash all or any portion of their Convertible Senior Notes in principal amounts of \$1,000 or a multiple thereof at a fundamental change repurchase price equal to 100% of the principal amount of the Convertible Senior Notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

Holders of the Convertible Senior Notes may convert their Convertible Senior Notes at their option at any time prior to the close of business on the business day immediately preceding December 15, 2026, in multiples of \$1,000 principal amount, only under the following circumstances: (1) during any calendar quarter (and only during such calendar quarter) commencing after the calendar quarter ending on March 31, 2022, if the last reported sale price per share of the Class A common stock exceeds 130% of the conversion price for each of at least 20 trading days, whether or not consecutive, during the 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter; (2) during the five consecutive business days immediately after any 10 consecutive trading day period (such 10 consecutive trading day period, the “measurement period”) in which the trading price per \$1,000 principal amount of Convertible Senior Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price per share of the Class A common stock on such trading day and the conversion rate on such trading day; (3) upon the occurrence of specified corporate events or distributions on the Class A common stock; and (4) if the Convertible Senior Notes are called for redemption. On or after June 15, 2026, holders may convert all or any portion of their Convertible Senior Notes at any time prior to the close of business on the second scheduled trading day immediately preceding the maturity date, regardless of the foregoing circumstances. Upon conversion, the Company will pay or deliver, as the case may be, cash, shares of its Class A common stock or a combination of cash and shares of its Class A common stock, at the Company’s election. As of December 31, 2022, the conditions allowing holders of the Convertible Senior Notes to convert were not met.

It is the Company’s current intent to settle the principal amount of its outstanding Convertible Senior Notes in cash and any excess in shares of the Company’s Class A common stock.

The Convertible Senior Notes are senior unsecured obligations and will rank equal in right of payment with the Company’s future senior unsecured indebtedness; senior in right of payment to the Company’s future indebtedness that is expressly subordinated to the Convertible Senior Notes; effectively subordinated to the Company’s existing and future secured indebtedness, to the extent of the value of the collateral securing that indebtedness; and structurally subordinated to all existing and future indebtedness and other liabilities, including trade payables, and (to the extent the Company is not a holder thereof) preferred equity, if any, of the Company’s subsidiaries.

The Company has classified the Convertible Senior Notes as a non-current liability under the guidance in ASC 470-20, as amended by ASU 2020-06. Debt discount and issuance costs aggregating approximately \$16.2 million were initially recorded as a reduction to the principal amount of the Convertible Senior Notes and is being amortized as interest expense on a straight line basis over the contractual terms of the notes. The Company estimates that the difference between amortizing the debt discounts and the issuance costs using the straight line method as compared to using effective interest rate method is immaterial.

The net carrying amount of the Convertible Senior Notes was as follows (in thousands):

	December 31,	
	2022	2021
Principal	\$ 625,000	\$ 625,000
Unamortized debt discount and issuance costs	(12,808)	(16,043)
Net carrying amount	<u>\$ 612,192</u>	<u>\$ 608,957</u>

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The following table sets forth the interest expense recognized related to the Convertible Senior Notes (in thousands):

	Year Ended December 31	
	2022	2021
Contractual interest expense	\$ 7,812	\$ 316
Amortization of debt discount and issuance costs	3,236	135
Total interest expense	<u>\$ 11,048</u>	<u>\$ 451</u>

The remaining term over which the debt discount and issuance costs will be amortized is 3.96 years. Interest expense of \$7.8 million and \$0.5 million is reflected as a component of interest (expense) income, net in the accompanying consolidated statement of operations for the years ended December 31, 2022 and 2021, respectively.

In connection with the offering of the Convertible Senior Notes, the Company entered into privately negotiated capped call option transactions with certain counterparties (the “Capped Calls”). The Capped Calls each have an initial strike price of approximately \$19.98 per share, subject to certain adjustments, which corresponds to the initial conversion price of the Convertible Senior Notes. The Capped Calls have initial cap prices of \$30.16 per share, subject to certain adjustment events. The Capped Calls are generally intended to reduce the potential dilution to the Class A common stock upon any conversion of the Convertible Senior Notes and/or offset any cash payments the Company is required to make in excess of the principal amount of converted Convertible Senior Notes, as the case may be, with such reduction and/or offset subject to a cap based on the cap price. The Capped Calls expire on April 6, 2027, subject to earlier exercise. The Capped Calls are subject to either adjustment or termination upon the occurrence of specified extraordinary events affecting the Company, including a merger event, a tender offer, and a nationalization, insolvency or delisting involving the Company. In addition, the Capped Calls are subject to certain specified additional disruption events that may give rise to a termination of the Capped Calls, including changes in law, failure to deliver, and hedging disruptions. The net cost of \$73.4 million incurred to purchase the Capped Calls was recorded as a reduction to additional paid-in capital in the accompanying consolidated balance sheet. The Capped Calls are not accounted for as derivatives.

Senior Secured Loan

Legacy Luminar had in August 2017 issued certain Senior Secured Promissory Notes (“Senior Secured Notes”). These Senior Secured Notes were subsequently amended, refinanced and partially repaid at various times through 2020. The Senior Secured Notes were repaid in full in December 2020 as required per the terms of the Merger Agreement. The Company had recorded loss on extinguishment of debt in connection with the Senior Secured Notes in the amount of approximately \$4.0 million and interest expense in the amount of \$2.5 million in 2020.

In connection with the issuance of Senior Secured Notes and its subsequent amendment, refinance and partial repayments at various times through 2020, Legacy Luminar had issued warrants in 2017, 2018 and 2019 (collectively “Legacy Warrants”). The Legacy Warrants were recorded at fair value with subsequent changes in fair value reflected in earnings. The change in fair value resulted in a loss of \$27.3 million during the year ended December 31, 2020. Upon closing of the Business Combination, the Legacy Warrants were exercised for 1,466,155 shares of Class A common stock. No Legacy Warrants have been outstanding since December 31, 2020.

Note 8. Fair Value Measurements

As of December 31, 2022, the Company carried cash equivalents, marketable investments and Private Warrants that are measured at fair value on a recurring basis. The Company had previously carried Public Warrants which were exercised and redeemed in March 2021.

Fair value is based on the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is estimated by applying the following hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

Level 1 — Observable inputs, which include unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2 — Observable inputs other than Level 1 inputs, such as quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 — Unobservable inputs that are supported by little or no market activity and that are based on management’s assumptions, including fair value measurements determined by using pricing models, discounted cash flow methodologies or similar techniques.

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The Company determined the fair value of its Level 1 financial instruments, which are traded in active markets, using quoted market prices for identical instruments.

Marketable investments classified within Level 2 of the fair value hierarchy are valued based on other observable inputs, including broker or dealer quotations, alternative pricing sources or U.S. Government Treasury yield of appropriate term. When quoted prices in active markets for identical assets or liabilities are not available, the Company relies on non-binding quotes from its investment managers, which are based on proprietary valuation models of independent pricing services. These models generally use inputs such as observable market data, quoted market prices for similar instruments, historical pricing trends of a security as relative to its peers. To validate the fair value determination provided by its investment managers, the Company reviews the pricing movement in the context of overall market trends and trading information from its investment managers. The Company performs routine procedures such as comparing prices obtained from independent source to ensure that appropriate fair values are recorded.

Given that the transfer of Private Warrants to anyone outside of a small group of individuals constituting the sponsors of Gores Metropoulos, Inc. would result in the Private Warrants having substantially the same terms as the Public Warrants, management determined that the fair value of each Private Warrant is the same as that of a Public Warrant, with an insignificant adjustment for short-term marketability restrictions, as of December 31, 2021. As of December 31, 2022, management determined the fair value of the Private Warrants using observable inputs in the Black-Scholes valuation model, which used the remaining term of warrants of 2.92 years, volatility of 85.0% and a risk-free rate of 4.23%. Accordingly, the Private Warrants are classified as Level 3 financial instruments.

The following table presents changes in Level 3 liabilities relating to Private Warrants measured at fair value (in thousands):

	Private Warrants
Balance as of December 31, 2021	\$ 31,230
Change in fair value prior to exercises	4,713
Reduction in liability due to exercises	(19,003)
Change in fair value of outstanding warrants	(13,935)
Balance as of December 31, 2022	<u>\$ 3,005</u>

The Company's financial assets and liabilities subject to fair value measurements on a recurring basis and the level of inputs used for such measurements were as follows (in thousands):

	Fair Value (in thousands) Measured as of December 31, 2022 Using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents:				
Money market funds	\$ 42,056	\$ —	\$ —	\$ 42,056
Total cash equivalents	<u>\$ 42,056</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 42,056</u>
Marketable investments:				
U.S. treasury securities	\$ 188,480	\$ —	\$ —	\$ 188,480
U.S. agency and government sponsored securities	—	4,924	—	4,924
Commercial paper	—	74,523	—	74,523
Corporate bonds	—	109,909	—	109,909
Asset-backed securities	—	11,835	—	11,835
Marketable equity investments	29,643	—	—	29,643
Total marketable investments	<u>\$ 218,123</u>	<u>\$ 201,191</u>	<u>\$ —</u>	<u>\$ 419,314</u>
Liabilities:				
Private Warrants	—	—	3,005	3,005
Total warrant liabilities	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 3,005</u>	<u>\$ 3,005</u>

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	Fair Value (in thousands) Measured as of December 31, 2021 Using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents:				
Money market funds	\$ 25,654	\$ —	\$ —	\$ 25,654
Commercial paper	—	950	—	950
Total cash equivalents	\$ 25,654	\$ 950	\$ —	\$ 26,604
Marketable investments:				
U.S. treasury securities	\$ 161,465	\$ —	\$ —	\$ 161,465
U.S. agency and government sponsored securities	—	4,970	—	4,970
Commercial paper	—	39,834	—	39,834
Corporate bonds	—	165,190	—	165,190
Asset-backed securities	—	46,466	—	46,466
Marketable equity investments	44,216	—	—	44,216
Total marketable investments	\$ 205,681	\$ 256,460	\$ —	\$ 462,141
Liabilities:				
Private Warrants	—	—	31,230	31,230
Total warrant liabilities	\$ —	\$ —	\$ 31,230	\$ 31,230

The Company's non-marketable equity investment, measured at fair value on a non-recurring basis, that has been remeasured during the period due to impairment is classified within Level 3 in the fair value hierarchy because the Company estimated the value based on valuation methods which included unobservable inputs including projections received from Robotic Research, market conditions, preference rights, etc. of the investment the Company holds. See Note 5 for further information on the Company's non-marketable equity investment.

As of December 31, 2022 and 2021, the estimated fair value of the Company's outstanding Convertible Senior Notes was \$352.5 million and \$669.4 million, respectively. The fair value was determined based on the quoted price of the Convertible Senior Notes in an inactive market on the last trading day of the reporting period and have been classified as Level 2 in the fair value hierarchy. See Note 7 for further information on the Company's Convertible Senior Notes.

The Company's other financial instruments' fair value, including accounts receivable, accounts payable and other current liabilities, approximate its carrying value due to the relatively short maturity of those instruments. The carrying amounts of the Company's finance leases approximate their fair value, which is the present value of expected future cash payments based on assumptions about current interest rates and the creditworthiness of the Company.

Note 9. Convertible Preferred Stock

Series A Convertible Preferred Stock

On June 24, 2019, Legacy Luminar had amended and restated its Certificate of Incorporation ("Certificate"), which authorized the issuance of up to 102,740,023 shares of Series A Convertible Preferred Stock with a par value of \$0.00001. On June 24, 2019, Legacy Luminar entered into a Series A Convertible Preferred Stock Purchase Agreement to issue preferred stock to investors for cash and in settlement of outstanding SAFEs and Bridge Note.

Series X Convertible Preferred Stock

On August 24, 2020, Legacy Luminar had entered into the Series X Convertible Preferred Stock Purchase Agreement to offer shares of Legacy Luminar's Series X Convertible Preferred Stock. In August 2020 and September of 2020, Legacy Luminar issued an aggregate of 17,065,536 convertible preferred stock for cash at a purchase price of \$9.96 per share of preferred stock, which generated gross proceeds of \$170.0 million. In October 2020, Legacy Luminar had issued an additional 1,391,694 shares of preferred stock for gross proceeds of \$13.86 million. Accordingly, Legacy Luminar had amended and restated its certificate of incorporation, which authorized the issuance of up to 20,077,073 shares of Series X Convertible Preferred Stock with a par value of \$0.00001.

Upon closing of the Business Combination on December 2, 2020, the outstanding shares of Series A and Series X Convertible Preferred Stock were automatically converted into 113,275,381 shares of the Company Class A common stock.

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Beneficial Conversion Features (“BCFs”)

The Company had assessed whether BCFs existed for the optional conversion rights that did not require bifurcation as derivatives. If the conversion option was in-the-money as of the commitment date, the preferred stock contained a BCF. The BCF was recognized as a deemed dividend against the carrying amount of the preferred stock. The Company had monitored for the issuance of additional shares below the conversion price, which could have resulted in a contingent BCF. The Company had recorded a total BCF of \$12.0 million from the issuance of preferred stock prior to the close of the Business Combination. Because the preferred stock was convertible at any time pursuant to the optional conversion feature, the Company recognized a dividend equal to the BCF at the applicable commitment date. As the Company had an accumulated deficit as of the end of all periods presented, the BCF resulted in an increase and decrease in additional paid-in capital by the same amount.

Furthermore, the preferred stock contained a down-round protection provision that reduced the conversion price if the Company issues shares at less than the conversion price or for no consideration. This provision was not triggered upon consummation of the Business Combination and no contingent BCF was recorded during the year ended December 31, 2020.

Note 10. Earnings (Loss) Per Share

Basic earnings (loss) per share is computed by dividing net income (loss) by the weighted average number of shares of common stock outstanding during the period. Diluted earnings per share is computed by dividing net income by the weighted average number of shares of common stock during the period plus, common stock equivalents, as calculated under the treasury stock method, outstanding during the period. If the Company reports a net loss, the computation of diluted loss per share excludes the effect of dilutive common stock equivalents, as their effect would be antidilutive. The Company computes earnings (loss) per share using the two-class method for its Class A and Class B common stock. Earnings (loss) per share is same for both Class A and Class B common stock since they are entitled to the same liquidation and dividend rights. Earnings (loss) per share calculations for all periods prior to the Business Combination have been retrospectively restated to the equivalent number of shares reflecting the exchange ratio established in the reverse capitalization.

The following table sets forth the computation of basic and diluted loss for the years ended December 31, 2022, 2021, and 2020 as follows: (in thousands, except for share and per share amounts):

	December 31,		
	2022	2021	2020
Numerator:			
Net loss	\$ (445,939)	\$ (237,986)	\$ (362,298)
Deemed dividend attributable to BCF accretion	—	—	(6,757)
Net loss attributable to common shareholders	<u>\$ (445,939)</u>	<u>\$ (237,986)</u>	<u>\$ (369,055)</u>
Denominator:			
Weighted average Common shares outstanding- Basic	356,265,774	346,300,975	145,096,996
Weighted average Common shares outstanding- Diluted	<u>356,265,774</u>	<u>346,300,975</u>	<u>145,096,996</u>
Net loss per shares attributable to Common shareholders- Basic and Diluted	<u>\$ (1.25)</u>	<u>\$ (0.69)</u>	<u>\$ (2.54)</u>

The following table presents the potential shares of common stock outstanding that were excluded from the computation of diluted net loss per share of common stock as of the periods presented because including them would have been antidilutive:

	December 31,		
	2022	2021	2020
Warrants	5,757,549	7,166,301	24,089,255
Stock-based awards—Equity classified	33,372,534	24,156,973	18,003,962
Stock-based awards—Liability classified	14,302,723	2,401,648	—
Vendor stock-in-lieu of cash program	3,162,879	1,659,510	—
Convertible Senior Notes	31,279,716	31,279,716	—
Earn-out shares	8,606,717	8,606,717	25,818,744
Total	<u>96,482,118</u>	<u>75,270,865</u>	<u>67,911,961</u>

The Company uses the if converted method for calculating the dilutive effect of the Convertible Senior Notes using the initial conversion price of \$19.981 per share. The closing price of Class A common stock as of December 31, 2022 was less than the initial conversion price.

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Note 11. Stockholders' Equity (Deficit)

Class A and Class B Common Stock

The Company's Board of Directors has authorized two classes of common stock, Class A and Class B. As of December 31, 2022, the Company had authorized 715,000,000 and 121,000,000 shares of Class A and Class B common stock with a par value of \$0.0001 per share for each class. As of December 31, 2022, the Company had 291,942,087 shares issued and 270,078,637 shares outstanding shares of Class A common stock, and 97,088,670 shares of issued and outstanding Class B common stock. Holders of the Class A and Class B common stock have identical rights, except that holders of the Class A common stock are entitled to one vote per share and the holder of the Class B common stock is entitled to ten votes per share. Shares of Class B common stock can be converted to shares of Class A common stock at any time at the option of the stockholder and automatically convert upon sale or transfer, except for certain transfers specified in the Company's amended and restated certificate of incorporation. During 2021, 15,000,000 shares of Class B common stock were converted into Class A common stock on a one-for-one basis.

In connection with the merger with Gores on December 2, 2020, the Company's Chief Executive Officer exchanged 22,935,412 shares of Founders Preferred Stock and 82,182,791 shares of Class A common stock, which were entitled to one vote per share, into the same number of shares of Class B common stock, which are entitled to ten votes per share. The Company recorded the incremental value of \$3.0 million associated with this transaction as stock-based compensation in general and administrative expenses.

Treasury Stock

In December 2021, the Company's Board of Directors authorized share repurchases up to \$312.5 million of the Company's Class A common stock. The Company's share repurchase program does not obligate the Company to acquire any specific number of shares. Under the program, shares could be repurchased in privately negotiated and/or open market transactions, including under plans complying with Rule 10b5-1 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). In the fourth quarter of 2021, the Company repurchased 15,263,761 shares Class A common stock for \$235.9 million through negotiated and market purchase transactions. In the first and second quarters of 2022, the Company repurchased 2,682,548 and 3,917,141 shares of Class A common stock for \$39.7 million and \$36.9 million, respectively. As of December 31, 2022, no amount remained available for stock repurchases pursuant to our stock repurchase program. The repurchased shares have been recorded as Treasury Stock on the Balance Sheet as of December 31, 2022 and 2021.

Founders Preferred Stock

26,206,837 shares of Founders Preferred Stock were issued in 2015. The compensation expense associated with the Founders Preferred Stock was immaterial to the financial statements. The Founders Preferred Stock was substantively the same as common stock, as they share identical rights and features. The Founders Preferred Stock was convertible into common stock on a one-to-one basis at any time. The Founders Preferred Stock is presented as a component of the Company's permanent equity. Upon closing of the Business Combination, Founders Preferred Stock was converted into shares of Class A and Class B common stock. No Founders Preferred Stock have been outstanding since the closing of the Business Combination.

Public and Private Warrants

In March 2021, 3,589,645 Private Warrants and 13,128,671 Public Warrants were exercised, and the Company received \$153.9 million in cash proceeds from the exercise of these warrants. Pursuant to the terms of the agreements governing the rights of the holders of the Public Warrants, the Company redeemed the remaining unexercised and outstanding 204,638 Public Warrants after March 2021 for a redemption price of \$0.01 per Public Warrant.

As of December 31, 2021, the Company had no Public Warrants and 3,077,021 Private Warrants outstanding.

In January 2022 and April 2022, 1,389,529 and 19,223 Private Warrants, respectively, were exercised on a cashless basis and the Company issued 401,365 and 4,387 shares of Class A common stock, respectively, pursuant to the exercises. The Company had 1,668,269 Private Warrants outstanding as of December 31, 2022. These Private Warrants expire on December 2, 2025. Each Private Warrant allows the holder to purchase one share of Class A common stock at \$11.50 per share.

Stock-in-lieu of Cash Program

The Company has entered into arrangements with certain vendors and other third parties wherein the Company at its discretion may elect to pay amounts owed to the respective vendors or third parties for services provided either in cash or by issuing shares of the Company's Class A common stock ("Stock-in-lieu of Cash Program"). During the year ended December 31, 2022, the Company issued 8,824,385 shares of Class A common stock, as part of the Stock-in-lieu of Cash

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Program. The Company considers the shares issuable under the Stock-in-lieu of Cash Program as liability classified awards when the arrangement with the vendors requires the Company to issue a variable number of shares to settle amounts owed. As of December 31, 2022, the Company had a total of \$15.2 million in prepaid expenses and other current and non-current assets related to its Stock-in-lieu of Cash Program.

In November 2021, the Company entered into an agreement with Daimler North America Corporation (“Daimler”) wherein Daimler is providing certain data and other services to the Company. To compensate Daimler for these services, the Company agreed to issue 1.5 million shares of Class A common stock to Daimler. These shares are subject to certain vesting conditions and vest over a period of two years. The Company recorded costs related to these shares as research and development expense of \$7.9 million during the year ended December 31, 2022. During the year ended December 31, 2022, the Company issued 1,125,000 shares of Class A common stock related to this arrangement. The unamortized cost relating to the shares issued to Daimler under this agreement was recorded as \$9.2 million in prepaid expenses and other current and non-current assets as of December 31, 2022.

The Company’s vendor Stock-in-lieu of Cash Program activity for the year ended December 31, 2022 was as follows:

	Shares	Weighted Average Grant Date Fair Value per Share
Outstanding as of December 31, 2021	1,500,000	\$ 15.72
Granted	8,824,385	9.93
Vested	(9,277,234)	10.65
Outstanding as of December 31, 2022	<u>1,047,151</u>	11.90

Note 12. Stock-based Compensation

Prior to becoming a publicly traded entity, the Company issued incentive stock options, non-qualified stock options, and restricted stock to employees and non-employee consultants under its 2015 Stock Plan (the “2015 Plan”). Since the closing of the Business Combination, the Company has not issued any new stock-based awards under the 2015 Plan.

In December 2020, the Board adopted, and the Company’s stockholders approved the 2020 Equity Incentive Plan (the “2020 Plan”). The 2020 Plan became effective upon the closing of the Business Combination. Under the 2020 Plan, the Company was originally authorized to issue a maximum number of 36,588,278 shares of Class A common stock.

In June 2022, the Company’s stockholders approved an amendment and restatement of the Company’s 2020 Plan (the “Amended 2020 Plan”) to increase the number of shares of Class A common stock authorized for issuance by 36,000,000 additional shares and added an evergreen provision under which the number of shares of Class A common stock available for issuance under the Amended 2020 Plan will be increased on the first day of each fiscal year of the Company beginning with the 2023 fiscal year and ending on (and including) the first day of the 2030 fiscal year, in an amount equal to the lesser of (i) 5% of the outstanding shares of common stock on the last day of the immediately preceding fiscal year, (ii) 40,000,000 shares or (iii) such number of shares determined by the Board. Pursuant to the evergreen provision, 18,358,365 additional shares of Class A common stock were added to the Amended 2020 Plan on January 1, 2023.

Stock Options

Under the terms of the 2015 Plan, incentive stock options had an exercise price at or above the fair market value of the stock on the date of the grant, while non-qualified stock options were permitted to be granted below fair market value of the stock on the date of grant. Stock options granted had service-based vesting conditions only. The service-based vesting conditions varied, though typically, stock options vest over four years with 25% of stock options vesting on the first anniversary of the grant and the remaining 75% vesting monthly over the remaining 36 months. Option holders have a 10-year period to exercise the options before they expire. Forfeitures are recognized in the period of occurrence.

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A summary of the Company's stock option activity for the year ended December 31, 2022 was as follows (in thousands, except years and per share data):

	Number of Stock Options	Weighted- Average Exercise Price	Weighted- Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value
Outstanding as of December 31, 2021	11,507,643	\$ 1.72		
Exercised	(2,370,989)	1.67		
Cancelled/Forfeited	(973,804)	1.67		
Outstanding as of December 31, 2022	8,162,850	1.74	7.03	\$ 26,763
Vested and exercisable as of December 31, 2022	5,472,821	1.73	6.95	\$ 17,654
Vested and expected to vest as of December 31, 2022	8,162,850	1.74	7.03	\$ 26,763

No stock options were granted by the Company in 2022 or 2021. The weighted-average grant date fair value per share of options granted during the year ended December 31, 2020 was \$0.98. The total grant-date fair value of options that vested during the year ended December 31, 2022, 2021 and 2020 was \$2.9 million, \$7.1 million and \$1.4 million, respectively.

The aggregate intrinsic value of stock options exercised during the year ended December 31, 2022 was \$20.6 million. The intrinsic value is calculated as the difference between the exercise price and the fair value of the common stock on the exercise date.

As of December 31, 2022, the Company had \$2.7 million of unrecognized stock-based compensation expense related to stock options. This cost is expected to be recognized over a weighted-average period of 0.63 years.

Restricted Stock Awards

Prior to June 30, 2019, the Company granted restricted stock awards ("RSAs") to employees. Recipients purchased the restricted stock on the grant date and the Company has the right to repurchase the restricted shares at the same price recipients paid to obtain those shares. The restrictions lapse solely based on continued service, and generally lapse over 4 years —25% on the first anniversary of the date of issuance, and the remaining 75% monthly over the remaining 36 months. At the grant date of the award, recipients of restricted stock were granted voting rights and right to receive dividends on unvested shares. No restricted stock awards have been granted after June 30, 2019.

The Company's RSAs activity for the year ended December 31, 2022 was as follows:

	Shares	Weighted Average Grant Date Fair Value per Share
Outstanding as of December 31, 2021	666,298	1.21
Forfeited	(18,476)	1.23
Vested	(583,336)	1.20
Outstanding as of December 31, 2022	64,486	1.29

The total grant-date fair value of restricted stock awards vested during the year ended December 31, 2022, 2021 and 2020 was \$0.7 million, \$1.0 million and \$2.2 million, respectively.

As of December 31, 2022, the Company had \$0.1 million of unrecognized stock-based compensation expense related to restricted stock awards, which is expected to be recognized in the first quarter of 2023.

Restricted Stock Units

Since the closing of the Business Combination, the Company has granted restricted stock units ("RSUs") under the Amended 2020 Plan (and prior to its amendment and restatement, under the 2020 Plan). Each RSU granted under the Amended 2020 Plan represents a right to receive one share of the Company's Class A common stock when the RSU vests. RSUs generally vest over a period up to six years. The Company has granted certain performance-based equity awards that vest upon achievement of certain performance milestones. The fair value of RSU is equal to the fair value of the Company's common stock on the date of grant.

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The Company's RSUs activity for the year ended December 31, 2022 was as follows:

	Shares	Weighted Average Grant Date Fair Value per Share
Outstanding as of December 31, 2021	11,983,032	19.56
Granted	23,213,889	10.29
Forfeited	(2,069,915)	16.15
Vested	(7,532,971)	15.40
Outstanding as of December 31, 2022	<u>25,594,035</u>	<u>12.66</u>

The total fair value of RSUs vested during the year ended December 31, 2022 and 2021 was \$116.0 million and \$32.8 million, respectively.

As of December 31, 2022, the Company had \$277.7 million of unrecognized stock-based compensation expense related to RSUs. This cost is expected to be recognized over a weighted-average period of 1.53 years.

Fixed Value Equity Awards

The Company issues fixed value equity awards to certain employees as a part of their compensation package. These awards are issued as RSUs out of the Amended 2020 Plan (and prior to its amendment and restatement, under the 2020 Plan) and are accounted for as liability classified awards under ASC 718 — Stock Compensation. Fixed value equity awards granted have service-based conditions only and vest quarterly over a period a period up to four years. These awards represent a fixed dollar amount settled in a variable number of shares determined at each vesting date. For the year ended December 31, 2022, the Company recorded \$7.6 million in stock-based compensation expense related to these awards.

Employee Stock Purchase Plan

In December 2020, the Board and the Company's stockholders adopted the 2020 Employee Stock Purchase Plan ("ESPP") under which 7,317,655 shares were authorized for issuance. The 2020 ESPP became effective on February 26, 2021.

The ESPP permits eligible employees to purchase the Company's Class A common stock through payroll deduction with up to 15% of their pre-tax earnings subject to certain Internal Revenue Code limitations. The purchase price of shares is 85% of the lower of the fair market value of the Company's common stock on the first day of a six-month offering period, or the relevant purchase date. In addition, no participant may purchase more than 5,000 shares of common stock in each purchase period.

During 2022, 168,147 shares were purchased at a weighted average price of \$7.56 per share.

The assumptions used to value purchase rights under the ESPP during the year ended December 31, 2022 were as follows:

	May 16, 2022	November 16, 2022
Expect term (years)	0.5	0.5
Volatility	82.3%	93.5%
Risk-free interest rate	1.54%	4.54%
Dividend yield	—%	—%

Optogration Milestone Awards

As discussed in Note 3, as part of the Optogration acquisition in August 2021, the Company owed up to \$22.0 million of post combination compensation related to certain service and performance conditions ("Optogration Milestone Awards"). In August 2022, the Company issued 1,632,056 shares of Class A common stock for \$11.0 million of the Optogration Milestone Awards due to achievement of the service and performance conditions. As of December 31, 2022, it is probable that the service and performance conditions for the remaining \$11.0 million obligation will be met. The Company recorded \$16.5 million in stock-based compensation expense from inception to December 31, 2022 for Optogration Milestone Awards.

Freedom Photonics Awards

As part of the Freedom Photonics acquisition in April 2022, the Company owes up to \$28.3 million of post combination compensation related to certain service and performance conditions including achievement of certain technical and financial

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milestones. As of December 31, 2022, Freedom Photonics did not achieve a portion of its stipulated financial milestone. As of December 31, 2022, it is probable that the remaining conditions will be met, and as a result, the Company recorded \$7.6 million in stock-based compensation expense through December 31, 2022.

Solstice Awards

The Company owes up to \$0.7 million in compensation related to certain service and performance conditions. As of December 31, 2022, it is probable that the conditions will be met, and as a result, the Company recorded \$0.4 million in stock-based compensation expense through December 31, 2022.

Executive Officer Awards

On May 2, 2022, the Board granted an award of 10.8 million RSUs to Austin Russell, the Company's Chief Executive Officer. The grant date fair value per share was \$8.70 per share. This award represents Mr. Russell's total compensation from the Company. On August 19, 2022, the Board granted 500,000 RSUs to each of Thomas Fennimore, the Company's Chief Financial Officer and Alan Prescott, the Company's Chief Legal Officer. The grant date fair value per share was \$6.12 per share.

The Company measured compensation cost for the above executive officer awards using a Monte Carlo simulation model and recorded \$14.7 million in stock-based compensation expense related to these awards in the year ended December 31, 2022. These awards to the executive officers are subject to all of the following vesting conditions:

- Public Market condition: Achievement of three stock price milestones: \$50 or more, \$60 or more, and \$70 or more. The stock price will be measured based on the volume-weighted average price per share for 90 consecutive trading days;
- Service condition: Approximately 7-years of vesting; and
- Performance condition: Start of production for at least one series production program.

As of December 31, 2022, the Company had \$85.3 million of unrecognized stock-based compensation expense related to RSUs. This cost is expected to be recognized over a weighted-average period of 6.36 years.

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Compensation expense

Stock-based compensation expense by type of award was as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Equity Classified Awards:			
Stock options	\$ 2,666	\$ 5,137	\$ 3,179
RSAs	293	1,682	5,532
RSUs	129,992	60,191	—
ESPP	714	—	—
Liability Classified Awards:			
Equity settled fixed value	7,545	3,826	—
Optogration	10,894	6,114	—
Freedom Photonics	7,633	—	—
Solfice	410	—	—
Other	2,258	734	—
Total	<u>\$ 162,405</u>	<u>\$ 77,684</u>	<u>\$ 8,711</u>

Stock-based compensation expense by function was as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Cost of sales	\$ 7,680	\$ 6,422	\$ 309
Research and development	40,898	20,216	2,098
Sales and marketing	15,814	4,546	414
General and administrative	98,013	46,500	5,890
Total	<u>\$ 162,405</u>	<u>\$ 77,684</u>	<u>\$ 8,711</u>

Note 13. Leases

The Company leases office and manufacturing facilities under non-cancelable operating leases expiring at various dates through September 2028. In October 2021, the Company entered into a lease agreement commencing on April 1, 2022 for a term of 65 months through August 31, 2027. In September 2022, the Company entered into a lease agreement for a term of 66 months through February 2028. Some of the Company's leases include one or more options to renew, with renewal terms that if exercised by the Company, extend the lease term from one to six years. The exercise of these renewal options is at the Company's discretion. The Company's lease agreements do not contain any material terms and conditions of residual value guarantees or material restrictive covenants. The Company's short-term leases and sublease income were not material.

The Company adopted ASC 842 using the modified retrospective method on January 1, 2021 and elected the available package of practical expedients upon adoption. The most significant impact of the adoption of ASC 842 was the recognition of right-of-use, or ROU, assets and lease liabilities for operating leases of \$10.8 million and \$12.0 million, respectively, and a reversal of deferred rent of \$1.2 million on January 1, 2021. The Company's accounting for finance leases remained substantially unchanged. The adoption of ASC 842 did not have any impact on the Company's operating results or cash flows.

The components of lease expenses were as follows (in thousands):

	Year Ended	
	December 31, 2022	December 31, 2021
Operating lease cost	\$ 6,533	\$ 4,654
Variable lease cost	2,230	1,703
Total operating lease cost	<u>\$ 8,763</u>	<u>\$ 6,357</u>

LUMINAR TECHNOLOGIES, INC. AND SUBSIDIARIES
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Supplemental cash flow information related to leases was as follows (in thousands):

	Year Ended	
	December 31, 2022	December 31, 2021
Cash paid for amounts included in the measurement of lease liabilities:		
Cash paid for operating leases included in operating activities	\$ (6,070)	\$ (4,609)
Right of use assets obtained in exchange for lease obligations:		
Operating leases	16,749	2,876

Supplemental balance sheet information related to leases was as follows (in thousands):

	December 31, 2022	December 31, 2021
Operating leases:		
Operating lease right-of-use assets	\$ 21,244	\$ 9,145
Operating lease liabilities:		
Operating lease liabilities, current	\$ 5,953	\$ 4,735
Operating lease liabilities, non-current	16,989	5,768
Total operating lease liabilities	\$ 22,942	\$ 10,503

Weighted average remaining terms were as follows (in years):

	December 31, 2022	December 31, 2021
Weighted average remaining lease term		
Operating leases	4.43	2.95

Weighted average discount rates were as follows:

	December 31, 2022	December 31, 2021
Weighted average discount rate		
Operating leases	5.45%	2.80%

Maturities of lease liabilities were as follows (in thousands):

Year Ending December 31,	Operating Leases
2023	\$ 6,190
2024	5,123
2025	5,193
2026	4,732
2027	3,927
Thereafter	1,149
Total lease payments	26,314
Less: imputed interest	(3,372)
Total leases liabilities	\$ 22,942

Note 14. Income Taxes

The following table presents components of loss before provision for (benefit from) income taxes for the periods presented (in thousands):

	Year Ended December 31,		
	2022	2021	2020
United States	\$ (445,720)	\$ (239,855)	\$ (362,338)
International	453	607	40
Loss before provision for (benefit from) income taxes	\$ (445,267)	\$ (239,248)	\$ (362,298)

LUMINAR TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Provision for (benefit from) income taxes for the periods presented consisted of (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Current:			
Foreign	440	—	—
Total current:	440	—	—
Deferred:			
U.S. federal	204	(1,262)	—
U.S. state	28	—	—
Total deferred:	232	(1,262)	—
Total provision for (benefit from) income taxes	\$ 672	\$ (1,262)	\$ —

The reconciliation between the U.S. federal statutory income tax rate of 21% to the Company's effective tax for the periods presented is as follows:

	Year Ended December 31,		
	2022	2021	2020
U.S. federal provision at statutory rate	21.0%	21.0%	21.0%
State income taxes	5.7	4.4	0.7
Tax credits	2.4	1.5	0.6
Fair value of financial instruments	0.4	(2.3)	(15.6)
Stock-based compensation expense	(3.4)	2.0	(0.4)
Executive compensation	(0.8)	(1.1)	0.0
Other permanent items	0.2	(0.3)	0.0
Uncertain tax benefits	(1.4)	(0.8)	(0.3)
Change in valuation allowance	(24.3)	(24.0)	(6.0)
Effective tax rate	(0.2%)	0.4%	0.0%

The Company's effective tax rates differ from the federal statutory rate primarily due to the change in valuation allowance, non-deductible stock-based compensation expense net of excess windfall stock compensation deductions, nondeductible executive compensation, R&D tax credits, state income taxes and the fluctuation of fair value on instruments treated as debt for GAAP and equity for tax purposes, which is not taxable/deductible for income tax purposes, for 2022, 2021 and 2020.

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The Company's deferred income tax assets and liabilities as of December 31, 2022 and 2021 were as follows (in thousands):

	Year Ended December 31,	
	2022	2021
Deferred tax assets:		
Net operating loss carry forward	\$ 161,881	\$ 120,544
Tax credits	16,322	6,296
Accruals and reserves	3,309	—
Stock-based compensation expense	14,535	6,944
Lease liability (ASC 842)	6,268	2,622
Section 174 R&D capitalization	43,240	—
Inventory reserves	1,961	617
Depreciation and amortization	2,170	—
Other	20	15
Total deferred tax assets	249,706	137,038
Valuation allowance	(243,811)	(130,569)
Total deferred tax asset	5,895	6,469
Deferred tax liabilities:		
Depreciation and amortization	—	1,185
Prepaid expenses	—	2,983
Other	162	—
ROU asset (ASC 842)	5,801	2,301
Total deferred tax liabilities	5,963	6,469
Net deferred tax assets (liabilities)	\$ (68)	\$ —

The Company assesses the realizability of deferred tax assets based on the available evidence, including a history of taxable income and estimates of future taxable income. In assessing the realizability of deferred tax assets, the Company considers whether it is more likely than not that all or some portion of deferred tax assets will not be realized. Due to the history of losses incurred by the Company, management believes it is not more likely than not that substantially all of the deferred tax assets can be realized. Accordingly, the Company established and recorded a full valuation allowance on its net deferred tax assets of \$243.8 million and \$130.6 million as of December 31, 2022 and 2021, respectively. The valuation allowance increased by \$113.2 million in 2022.

No deferred tax liabilities for foreign withholding taxes have been recorded relating to the earnings of the Company's foreign subsidiaries since all such earnings are intended to be indefinitely reinvested. The amount of the unrecognized deferred tax liability associated with these earnings is immaterial.

Utilization of the net operating loss and tax credit carryforwards is subject to a substantial annual limitation due to the "ownership change" limitations provided by Sections 382 and 383 of the Internal Revenue Code of 1986, as amended ("IRC") and other similar state provisions. Any annual limitation may result in the expiration of net operating loss and tax credit carryforwards before utilization. As of December 31, 2022, the Company had \$597.0 million of U.S. federal net operating loss carryforwards available to reduce future taxable income, of which \$553.8 million will be carried forward indefinitely for U.S. federal tax purposes and \$43.2 million will expire beginning in 2035 to 2037. The Company also has \$547.8 million of U.S. state net operating loss carryforwards that will expire beginning in 2036.

The Company also has federal and state research and development ("R&D") tax credit carryforwards of \$21.1 million and \$3.9 million, respectively, as of December 31, 2022. The federal research credit carryforwards will begin expiring in 2035 and although a small portion, less than \$0.05 million, of the state research credit carryforwards will begin expiring in 2023, \$4.3 million of the state research credit carryforwards do not expire.

Under the Tax Cuts and Jobs Act ("TCJA"), for tax years beginning after December 31, 2021, taxpayers are required to capitalize and amortize all R&D expenditures that are paid or incurred in connection with their trade or business which represent costs in the experimental or laboratory sense. Specifically, costs for U.S.-based R&D activities must be amortized over 5 years and costs for foreign R&D activities must be amortized over 15 years. As of December 31, 2022, there is

LUMINAR TECHNOLOGIES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

insufficient Internal Revenue Service guidance on how to treat capitalizable R&D expenditures. The Company will continue to monitor the status of any new guidance that might be issued and will update its estimated capitalized R&D, accordingly.

Beginning January 1, 2022, the TCJA eliminated the option to deduct research and development expenditures in the current year and requires taxpayers to capitalize such expenses pursuant to IRC Section 174. The capitalized expenses are amortized over a 5-year period for domestic expenses and a 15-year period for foreign expenses. As a result of this provision of the TCJA, deferred tax assets related to capitalized research expenses increased by \$43.2 million.

Unrecognized Tax Benefits

The Company reports income tax related interest and penalties within its provision for income tax in its consolidated statements of operations. The Company had no interest and penalties accrued through December 31, 2022. The Company does not expect the total amount of unrecognized tax benefits will significantly increase or decrease within 12 months of the reporting date.

The following is a tabular reconciliation of the total amounts of unrecognized tax benefits (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Unrecognized tax benefits as of the beginning of the year	\$ 6,296	\$ 3,975	\$ 2,397
Increases related to prior year tax positions	—	535	327
Decreases related to prior year tax provisions	(3,723)	—	—
Increase related to current year tax positions	6,031	1,786	1,251
Unrecognized tax benefits as of the end of the year	<u>\$ 8,604</u>	<u>\$ 6,296</u>	<u>\$ 3,975</u>

None of the Company's unrecognized tax benefits, if recognized, would affect the effective tax rate since the tax benefits would increase a deferred tax asset that is currently fully offset by a full valuation allowance. The Company and its subsidiaries file federal, state and foreign income tax returns. In the normal course of business, the Company is subject to examination by taxing authorities, for which the Company's major tax jurisdictions are the United States and various states. The Company's federal, state and foreign income tax returns from inception to December 31, 2022 remain subject to examination.

Note 15. Commitments and Contingencies

Purchase Obligations

The Company purchases goods and services from a variety of suppliers in the ordinary course of business. Purchase obligations are defined as agreements that are enforceable and legally binding and that specify all significant terms, including fixed or minimum quantities to be purchased, fixed, minimum, or variable price provisions, and the approximate timing of the transaction. The Company had purchase obligations primarily for purchases of inventory, R&D, and general and administrative activities totaling \$96.0 million as of December 31, 2022.

Legal Matters

From time to time, the Company is involved in actions, claims, suits and other proceedings in the ordinary course of business, including assertions by third parties relating to intellectual property infringement, breaches of contract or warranties or employment-related matters. When it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated, the Company records a liability for such loss contingencies. The Company's estimates regarding potential losses and materiality are based on the Company's judgment and assessment of the claims utilizing currently available information. Although the Company will continue to reassess its reserves and estimates based on future developments, the Company's objective assessment of the legal merits of such claims may not always be predictive of the outcome and actual results may vary from the Company's current estimates. The Company's current legal accrual is not material to the financial statements.

Note 16. Segment and Customer Concentration Information

Reportable segments are (i) Autonomy Solutions and (ii) ATS. These segments reflect the way the chief operating decision maker ("CODM") evaluates the Company's business performance and manages its operations. Each segment has distinct product offerings, customers and market penetration. The Chief Executive Officer is the CODM of the Company.

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Autonomy Solutions

This segment manufactures and distributes commercial lidar sensors that measure distance using laser light for automotive mobility applications. This segment is impacted by trends in the autonomous vehicles and associated infrastructure/technology sector.

ATS

This segment is in the business of development of semiconductor technology based lasers and sensors. This segment also designs, tests and provides consulting services for development of integrated circuits. This segment is impacted by trends in and the strength of the automobile and aeronautics sector as well as government spending in military and defense activities.

The accounting policies of the operating segments are the same as those described in Note 2. Segment operating results and reconciliations to the Company's consolidated balances are as follows (in thousands):

	Year ended December 31, 2022				
	Autonomy Solutions	ATS	Total reportable segments	Eliminations (1)	Total Consolidated
Revenue:					
Revenues from external customers	\$ 24,353	\$ 16,345	\$ 40,698	\$ —	\$ 40,698
Revenues from internal customer	14,748	12,485	27,233	(27,233)	—
Total Revenue	<u>\$ 39,101</u>	<u>\$ 28,830</u>	<u>\$ 67,931</u>	<u>\$ (27,233)</u>	<u>\$ 40,698</u>
Depreciation and amortization	\$ 4,110	\$ 2,456	\$ 6,566	\$ —	\$ 6,566
Operating gain (loss)	(412,673)	(29,394)	(442,067)	(335)	(442,402)
Other significant items:					
Segment assets	752,088	60,529	812,617	(125,290)	687,327
Inventories, net	8,664	474	9,138	(346)	8,792

	Year ended December 31, 2021				
	Autonomy Solutions	ATS	Total reportable segments	Eliminations (1)	Total Consolidated
Revenue:					
Revenues from external customers	\$ 28,497	\$ 3,447	\$ 31,944	\$ —	\$ 31,944
Revenues from internal customer	8,098	5,929	14,027	(14,027)	—
Total Revenue	<u>\$ 36,595</u>	<u>\$ 9,376</u>	<u>\$ 45,971</u>	<u>\$ (14,027)</u>	<u>\$ 31,944</u>
Depreciation and amortization	\$ 3,723	\$ 439	\$ 4,162	\$ —	\$ 4,162
Operating gain (loss)	(214,133)	(324)	(214,457)	(95)	(214,552)
Other significant items:					
Segment assets	882,704	9,771	892,475	(8,939)	883,536
Inventories, net	10,179	163	10,342	—	10,342

LUMINAR TECHNOLOGIES, INC. AND SUBSIDIARIES
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Year ended December 31, 2020

	Autonomy Solutions	ATS	Total reportable segments	Eliminations (1)	Total Consolidated
Revenue:					
Revenues from external customers	\$ 11,387	\$ 2,564	\$ 13,951	\$ —	\$ 13,951
Revenues from internal customer	1,516	3,248	4,764	(4,764)	—
Total Revenue	\$ 12,903	\$ 5,812	\$ 18,715	\$ (4,764)	\$ 13,951
Depreciation and amortization	\$ 2,395	\$ 128	\$ 2,523	\$ (6)	\$ 2,517
Operating gain (loss)	(86,661)	(316)	(86,977)	102	(86,875)
Other significant items:					
Segment assets	511,676	2,975	514,651	(4,300)	510,351
Inventories, net	3,604	9	3,613	—	3,613

(1) Represent the eliminations of all intercompany balances and transactions during the period presented.

Two customers accounted for 21%, and 17% of the Company's revenue for the year ended December 31, 2022. Two customers accounted for 42% and 17% of the Company's revenue for the year ended December 31, 2021. One customer accounted for 64% of the Company's revenue for the year ended December 31, 2020.

Note 17. Related Party Transactions

Equity Investments

In February 2021, the Company invested \$15.0 million in a special purpose acquisition company, of which Mr. Jun Hong Heng, was the Chairman and Chief Executive Officer, and a principal shareholder. Mr. Heng became a director of the Company in June 2021. The terms of such investment were no less favorable to the Company than to other third party investors. During 2021, the Company sold \$2.9 million of this investment and had a remaining balance of \$12.1 million as of December 31, 2021. The fair value of this investment as of December 31, 2021 was \$12.2 million, which was included in marketable securities in the balance sheet. The Company sold this investment in its entirety in the second quarter of 2022. The special purpose acquisition company merged with ECARX on December 20, 2022 and Mr. Heng continues to be a director of the merged company.

In June 2022, the Company invested in a special purpose acquisition company through open market purchases, of which Mr. Alec Gores was the Chairman and Chief Executive Officer, and a principal shareholder. The special purpose acquisition company merged with Polestar Automotive Holdings UK PLC on June 24, 2022 and Mr. Gores continues to be a director of the merged company. Mr. Gores is a director of Luminar as well. The balance of this investment as of December 31, 2022 was not material.

Note 18. Subsequent Events

In preparing the audited consolidated financial statements as of December 31, 2022, the Company has evaluated subsequent events through February 28, 2023.

In January 2023, the Company executed an asset purchase agreement with Seagate Technology LLC and Seagate Singapore International Headquarters Pte. Ltd. (individually and collectively, "Seagate") and concurrently completed the acquisition of certain fixed assets, inventory and intellectual property related to Seagate's lidar-related projects and obtained a license to certain patents and other intangibles for an aggregate cash consideration of \$12.6 million. Additionally, the Company hired certain former employees of Seagate who had been working on the above projects.

In February 2023, the Company executed an agreement with Swiss Re Solutions Ltd ("Swiss Re") for use of certain of Swiss Re's tools and services for assessment of the Company's technology for purposes of potentially developing an insurance product and Swiss Re potentially providing reinsurance and other services. The Company agreed to pay Swiss Re \$4.0 million in consideration for these services over 4 years, of which \$1.0 million is non-cancelable. The Company may at its sole discretion pay the consideration owed to Swiss Re either in cash or shares of Class A common stock.

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

We have established disclosure controls and procedures that are designed to ensure that the information required to be disclosed by us in the reports that we file or submit under the Exchange Act and other securities laws is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms and that such information is accumulated and communicated to management, including our principal executive officer and principal financial officer, as appropriate to allow timely decision making and timely required disclosure to investors.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we have evaluated the effectiveness of our disclosure controls and procedures as required under Rules 13a-15(e) and 15d-15(e) under the Exchange Act as of December 31, 2022. Based on this evaluation, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures were effective as of December 31, 2022.

Management's Report on Internal Control Over Financial Reporting

Management, including our CEO and CFO, is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act and based upon the criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("the COSO framework"). Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of our financial statements for external purposes in accordance with U.S. GAAP.

Management's internal control system provides reasonable assurance with respect to the preparation and fair presentation of financial statements, but has inherent limitations that may not prevent or detect all misstatements, including the possibility of human error, circumvention of controls, or fraud.

Under the supervision and with the participation of our management, including our CEO and CFO, we have conducted an evaluation of the effectiveness of our internal control over financial reporting based on the COSO framework. Based on evaluation under these criteria, management has concluded that our internal control over financial reporting was effective as of December 31, 2022 to provide reasonable assurance regarding the reliability of financial reporting and preparation of consolidated financial statements in accordance with U.S. GAAP.

Our evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2022, did not include the internal controls of Freedom Photonics. We excluded Freedom Photonics from our assessment of internal control over financial reporting as of December 31, 2022 because it was acquired in a business combination on April 13, 2022. Freedom Photonics is a wholly owned subsidiary whose total assets represent approximately 5%, total operating expenses represent approximately 5% and revenue represents 28% of the related consolidated financial statement amounts as of and for the year ended December 31, 2022.

The effectiveness of our internal control over financial reporting as of December 31, 2022 has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, and their opinion is stated in their report which is included in this Annual Report on Form 10-K.

Remediation of Prior Year Material Weaknesses

The material weaknesses as previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2021, have been remediated. Since that time, our management, with the oversight of the audit committee of our Board of Directors, engaged in efforts to remediate the material weaknesses by implementing new and enhanced procedures and controls, including:

- An oversight mechanism was established to define responsibilities to achieve control objectives and hold individuals accountable for their internal control responsibilities. A number of qualified personnel, including a new Chief Accounting Officer, Corporate Controller, and Assistant Corporate Controller, within the accounting function were hired and effectively leading their respective functions for sufficient period to ensure GAAP principles are appropriately applied to the recording of accounting transactions.

- An internal audit function was established in-house with a new VP and Director, Internal Audit to strengthen oversight of the team and improve the design, implementation, execution and supervision of internal controls within the organization.
- The design of the controls was enhanced, new controls were implemented to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements, training was provided, and documentation and supervisory reviews were strengthened by management. Policies were updated and reviewed to establish expectations and procedures. Controls were implemented to monitor adherence to policies.
- User access controls related to the general ledger, automated business controls, and service organization controls were redesigned and enhanced to provide reasonable assurance over the information used in the control.
- An appropriate monitoring framework was designed to periodically evaluate the Company's internal control over financial reporting.
- Access and segregation of duties related to Information Technology General Controls were enhanced. Standardization and automations were implemented within the accounting processes to improve the reliability of information.
- Training was provided and new controls were implemented along with strengthening existing controls to enhance oversight over review and approval of manual journal entries.

These controls are adequately designed and have operated effectively for a sufficient period during 2022. Accordingly, the material weaknesses were determined to be remediated as of December 31, 2022.

Inherent Limitations on Effectiveness of Controls

Our management, including our principal executive officer and our principal financial officer, has determined that our internal controls are reasonably designed and implemented to assure reliable financial reporting and preparation of our financial statements. However, no control system can prevent and detect all errors and fraud. The design of any system of controls is based in part on certain assumptions about the likelihood of future events and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Projections of any evaluation of the effectiveness of controls to future periods are subject to risks. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

Changes in Internal Control Over Financial Reporting

Other than the remediation of the material weaknesses in the internal controls described above, there were no changes in our internal control over financial reporting during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Luminar Technologies, Inc.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Luminar Technologies, Inc. and subsidiaries (the "Company") as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2022, of the Company and our report dated February 28, 2023, expressed an unqualified opinion on those financial statements.

As described in Management's Report on Internal Control Over Financial Reporting, management excluded from its assessment the internal control over financial reporting at Freedom Photonics, which was acquired on April 13, 2022, and whose financial statements constitute 5% of total assets, 28% of revenues, and 5% of operating expenses, respectively of the consolidated financial statement amounts as of and for the year ended December 31, 2022. Accordingly, our audit did not include the internal control over financial reporting at Freedom Photonics.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control

over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

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

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

/s/ Deloitte & Touche LLP

San Jose, California

February 28, 2023

ITEM 9B. OTHER INFORMATION.

The information below is reported in lieu of information that would be reported under Items 1.01 and 8.01 under Form 8-K.

On February 28, 2023, the Company entered into a Financing Agreement (the "Sales Agreement") with Virtu Americas LLC (the "Agent") under which the Company may offer and sell, from time to time in its sole discretion, shares (the "Shares") of the Company's Class A common stock, par value \$0.0001 per share (the "Class A Common Stock"), with aggregate gross sales proceeds of up to \$75,000,000 through an "at the market" equity offering program under which Virtu Americas LLC will act as sales agent.

Under the Sales Agreement, the Company will set the parameters for the sale of the Shares, including the number of Shares to be issued, the time period during which sales are requested to be made, limitations on the number of Shares that may be sold in any one trading day and any minimum price below which sales may not be made. Subject to the terms and conditions of the Sales Agreement, the Agent has agreed to use its commercially reasonable efforts, consistent with its normal trading and sales practices, to sell the Shares by methods deemed to be an "at the market" offering as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, including sales made through The Nasdaq Global Select Market.

The Sales Agreement provides that the Agent will be entitled to compensation for its services equal to up to 2% of the gross proceeds of any shares of Class A Common Stock sold through the Agent under the Sales Agreement and the Company will reimburse the Agent for certain expenses incurred in connection with its services under the Sales Agreement, including reasonable legal fees in connection with the establishment of the at the market offering. The Company has no obligation to sell any Shares under the Sales Agreement, and may at any time suspend solicitation and offers under the Sales Agreement. The offering of Shares pursuant to the Sales Agreement will terminate upon the earlier of (i) the sale of all Shares subject to the Sales Agreement or (ii) termination of the Sales Agreement in accordance with its terms.

The shares will be issued pursuant to the Company's shelf registration statement on Form S-3 (File No. 333-262250), as amended by that certain Amendment No. 1 filed on February 1, 2022, which was declared effective by the Securities and Exchange Commission (the "SEC") on February 3, 2022. The Company will file a prospectus supplement with the SEC in connection with the offer and sale of the Shares pursuant to the Sales Agreement.

The foregoing description of the Sales Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the Sales Agreement. A copy of the Sales Agreement is filed with this Annual Report on Form 10-K as Exhibit 10.4 and is incorporated herein by reference.

A copy of the legal opinion of Orrick, Herrington & Sutcliffe LLP, relating to the validity of the Shares that may be sold pursuant to the Sales Agreement, is filed with this Annual Report on Form 10-K as Exhibit 5.1.

This information set forth under this Item 9B shall not constitute an offer to sell or the solicitation of any offer to buy the securities discussed herein, nor shall there be any offer, solicitation or sale of the securities in any state in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS.

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

The information required by this item will be included under the captions “Board of Directors and Corporate Governance,” “Proposal One: Election of Directors” and “Executive Officers” in our Proxy Statement for the 2023 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the year ended December 31, 2022 and is incorporated herein by reference.

Code of Business Conduct and Ethics

We have adopted a Code of Business Conduct and Ethics that applies to all of the members of our board of directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. Our Code of Business Conduct and Ethics is posted on the Investor Relations section of our website, which is located at <https://investors.luminartech.com> by clicking on “Governance Documents” in the “Governance” section of our website. We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding amendment to, or waiver from, a provision of our Code of Business Conduct and Ethics by posting such information on our website at the location specified above.

ITEM 11. EXECUTIVE COMPENSATION.

The information required by this item will be included under the captions “Board of Directors and Corporate Governance” and “Executive Compensation” in our Proxy Statement for the 2023 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the year ended December 31, 2022 and is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

The information required by this item will be included under the captions “Equity Compensation Plan Information” and “Security Ownership of Certain Beneficial Owners and Management” in our Proxy Statement for the 2023 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the year ended December 31, 2022 and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE.

The information required by this item will be included under the captions “Board of Directors and Corporate Governance” and “Certain Relationships and Related Party Transactions” in our Proxy Statement for the 2023 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the year ended December 31, 2022 and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES.

The information required by this item will be included under the caption “Proposal Two: Ratification of Appointment of Independent Registered Public Accounting Firm” in our Proxy Statement for the 2023 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the year ended December 31, 2022 and is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES.

The following documents are filed as part of this report:

1. *Financial Statements*. The financial statements included in “Index to the Consolidated Financial Statements” in Part II, Item 8 are filed as part of this Annual Report on Form 10-K.
2. *Financial Statement Schedules*. None.
3. *Exhibits*. Exhibits listed in the accompanying index to exhibits are filed or incorporated by reference as part of this Annual Report on Form 10-K.

EXHIBIT INDEX

Exhibit Number	Description	Incorporation by Reference				Filed Herewith
		Form	File Number	Exhibit/Appendix Reference	Filing Date	
2.1*	Agreement and Plan of Merger, dated as of August 24, 2020, by and among Gores Metropoulos, Inc., Dawn Merger Sub, Inc., Dawn Merger Sub II, LLC., and the Company.	8-K/A	001-38791	2.1	12/8/20	
3.1	Second Amended and Restated Certificate of Incorporation of the Company.	8-K/A	001-38791	3.1	12/8/20	
3.2	Amended and Restated By-Laws of the Company.	8-K/A	001-38791	3.2	12/8/20	
4.1	Specimen Class A Common Stock Certificate.	8-K/A	001-38791	4.1	12/8/20	
4.2	Warrant Agreement, dated January 31, 2019, between Continental Stock Transfer & Trust Company and Gores Metropoulos, Inc.	8-K/A	001-38791	4.2	12/8/20	
4.3	Specimen Warrant Certificate.	8-K/A	001-38791	4.3	12/8/20	
4.4	Description of Securities.	10-K	001-38791	4.4	03/1/22	
4.5	Indenture, dated as of December 17, 2021, by and between the Company and U.S. Bank National Association, as trustee (1.25% Convertible Senior Notes due 2026).	8-K	001-38791	4.1	12/17/21	
4.6	Amended Warrant Agreement, dated January 11, 2022, by and among the Company, Continental Stock Transfer & Trust Company, and American Stock Transfer & Trust Company.	10-K	001-38791	4.7	03/1/22	
5.1	Opinion of Orrick, Herrington & Sutcliffe LLP.					X
10.1	Amended and Restated Registration Rights Agreement, dated as of December 2, 2020, by and among the Company, Gores Metropoulos Sponsor LLC and certain other parties.	8-K/A	001-38791	10.1	12/8/20	
10.2	Form of Secondary Lock-Up Agreement.	8-K/A	001-38791	10.4	12/8/20	
10.3	Form of Indemnification Agreement.	8-K/A	001-38791	10.5	12/8/20	
10.4	Financing Agreement, dated as of February 28, 2023, between the Company and Virtu Americas LLC.					X
10.5†	Luminar Technologies, Inc. Management Longer Term Equity Incentive Plan.	8-K/A	001-38791	10.6	12/8/20	
10.6†	Luminar Technologies, Inc. Amended and Restated 2020 Equity Incentive Plan and related forms of award agreements.					X

10.7†	Luminar Technologies, Inc. 2020 Employee Stock Purchase Plan.	8-K/A	001-38791	10.8	12/8/20	
10.8†	Luminar Technologies, Inc. Amended and Restated 2015 Stock Plan.	8-K/A	001-38791	10.9	12/8/20	
10.9	Voting Agreement, dated August 24, 2020, by and between Luminar Technologies, Inc. (f/k/a Gores Metropoulos, Inc.) and Austin Russell (incorporated by reference to Annex G to the Company's Registration Statement on Form S-4/A (Registration No. 333-248794), filed with the Securities and Exchange Commission on October 23, 2020).	8-K/A	001-38791	10.10	12/8/20	
10.10	Offer Letter by and between Luminar Technologies, Inc. and Thomas J. Fennimore dated April 3, 2020 (incorporated by reference to Exhibit 10.13 to the Company's Registration Statement on Form S-1/A, (Registration No. 333-251657) filed with the SEC on January 13, 2021).	S-1/A	333-251657	10.10	01/29/21	
10.11	Luminar Technologies, Inc. Director Compensation Policy.	10-K	001-38791	10.14	04/14/21	
10.12	Form of certificate representing the 1.25% Convertible Senior Notes due 2026.	8-K	001-38791	4.1	12/17/21	
10.13	Framework Purchase Agreement, dated March 23, 2020 by and between Volvo Car Corporation and the Company.	S-4/A	333-248794	10.8	10/23/20	
10.14	Amendment No. 1 to Framework Purchase Agreement, dated June 24, 2021, by and between Volvo Car Corporation and the Company.	10-Q	001-38791	10.1	08/13/21	
10.15†	Amended and Restated Offer Letter by and between the Company and Alan Prescott dated November 11, 2021.	10-Q	001-38791	10.1	11/15/21	
10.16	Lease Agreement, dated February 15, 2018, by and between 2603 Discovery Lakes LLC and the Company.	S-4/A	333-248794	10.9	10/23/20	
21.1	List of Subsidiaries.					X
23.1	Consent of Deloitte & Touche LLP.					X
23.2	Consent of Orrick, Herrington & Sutcliffe LLP (included in Exhibit 5.1).					X
24.1	Power of Attorney (included on signature page).					X
31.1	Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15(d)-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15(d)-14(a) under the Securities Exchange Act of 1934, as adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
32.1	Certification of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					Furnished herewith
101.INS	XBRL Instance Document .					X

101.SCH	XBRL Taxonomy Extension Schema Document.	X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.	X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.	X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.	X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.	X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).	X

* The schedules to this Exhibit have been omitted in accordance with Regulation S-K Item 601(b)(2). The Company agrees to furnish supplementally a copy of any omitted schedule to the Securities and Exchange Commission upon its request.

† Indicates a management contract or compensatory plan, contract or arrangement.

ITEM 16. FORM 10-K SUMMARY.

None provided.

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.

Luminar Technologies, Inc.

Date: February 28, 2023

By: /s/ Thomas J. Fennimore
Thomas J. Fennimore
Chief Financial Officer
(Principal Financial Officer)

POWER OF ATTORNEY.

KNOW ALL PERSONS BY THESE PRESENTS that each individual whose signature appears below constitutes and appoints Austin Russell and Thomas J. Fennimore, and each of them, severally, as his or her true and lawful attorneys-in-fact and agents with the power to act, with or without the other, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in his or her capacity as a director or officer or both, as the case may be, of the Company, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that each of said attorneys-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/ Austin Russell</u> Austin Russell	President, Chief Executive Officer and Chairman of the Board of Directors (Principal Executive Officer)	February 28, 2023
<u>/s/ Thomas J. Fennimore</u> Thomas J. Fennimore	Chief Financial Officer (Principal Financial and Accounting Officer)	February 28, 2023
<u>/s/ Alec E. Gores</u> Alec E. Gores	Director	February 28, 2023
<u>/s/ Jun Hong Heng</u> Jun Hong Heng	Director	February 28, 2023
<u>/s/ Mary Lou Jepsen, PhD</u> Mary Lou Jepsen, PhD	Director	February 28, 2023
<u>/s/ Shaun Maguire, PhD</u> Shaun Maguire, PhD	Director	February 28, 2023
<u>/s/ Katharine A. Martin</u> Katharine A. Martin	Director	February 28, 2023
<u>/s/ Matthew J. Simoncini</u> Matthew J. Simoncini	Director	February 28, 2023
<u>/s/ Daniel D. Tempesta</u> Daniel D. Tempesta	Director	February 28, 2023

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LUMINAR

Executive Officers

Austin Russell
*President, Chief Executive Officer and
Chairperson of the Board of Directors*

Thomas J. Fennimore
Chief Financial Officer

Alan Prescott
Chief Legal Officer and Secretary

Board of Directors

Austin Russell
*President, Chief Executive Officer and
Chairperson of the Board of Directors*

Alec E. Gores
Chairman and Chief Executive Officer at The Gores Group

Jun Hong Heng
*Chief Investment Officer at Crescent Cove Advisors, LP; Member of
the Audit Committee and the Compensation & Human Capital
Management Committee*

Mary Lou Jepsen, PhD
*Chief Executive Officer at Openwater; Chairperson of the
Nominating & ESG Committee and
Member of the Compensation & Human Capital Management
Committee*

Shaun Maguire, PhD
*General Partner at Sequoia Capital; Member of the Nominating &
ESG Committee*

Katharine A. Martin
*Chairperson and Partner at Wilson Sonsini Goodrich & Rosati;
Chairperson of the Compensation & Human Capital Management
Committee and Member of the Nominating & ESG Committee*

Matthew J. Simoncini
*Chairperson of the Audit Committee and Member of the
Compensation & Human Capital Management Committee*

Daniel D. Tempesta
*Executive Vice President and Chief Financial Officer at Nuance
Communications, Inc.; Member of the Audit Committee*