Filed pursuant to Rule 424(b)(3) Registration No. 333-251657

PROSPECTUS SUPPLEMENT NO. 5 (to Prospectus dated May 27, 2021)

LUMINAR

LUMINAR TECHNOLOGIES, INC. Up to 181,247,830 Shares of Class A Common Stock Up to 19,999,975 Shares of Class A Common Stock Issuable Upon Exercise of Warrants

This prospectus supplement supplements the prospectus dated May 27, 2021 (the "Prospectus"), which forms a part of our registration statement on Form S-1 (No. 333-251657). This prospectus supplement is being filed to update and supplement the information in the Prospectus with the information contained in our Current Report on Form 8-K, filed with the Securities and Exchange Commission (the "SEC") on December 14, 2021 (the "Current Report"). Accordingly, we have attached the Current Report to this prospectus supplement.

The Prospectus and this prospectus supplement relates to the offer and sale from time to time by the selling securityholders named in the Prospectus (the "Selling Securityholders") of up to (A) 181,247,830 shares of our Class A common stock, par value \$0.0001 per share ("Class A Stock"), which consists of (i) 10,000,000 shares of Class A Stock (the "Founder Shares") originally issued in a private placement to Gores Metropoulos Sponsor LLC (the "Sponsor") in connection with the initial public offering (the "IPO") of Gores Metropoulos, Inc. ("Gores"), and subsequently distributed to certain equityholders of the Sponsor, (ii) 42,064,871 shares of Class A Stock issued pursuant to the Merger Agreement (as defined in the Prospectus), (iii) 6,666,666 shares of Class A Stock issuable upon the exercise of 6,666,666 warrants (the "Private Warrants") originally issued in a private placement to the Sponsor in connection with the IPO at an exercise price of \$11.50 per share of Class A Stock and subsequently distributed to certain equityholders of the Sponsor, (iv) 105,118,203 Executive Shares (as defined in the Prospectus), (v) up to 3,944,151 Earn-Out Shares (as defined in the Prospectus) that may be issued in the form of Class A Stock pursuant to the earn-out provisions in the Merger Agreement, (vi) up to 10,455,134 shares of Class A Stock that may be issued or issuable upon the conversion of any Earn-Out Shares that may be issued in the form of our Class B common stock, par value \$0.0001 per share ("Class B Stock") pursuant to the earn-out provisions in the form of class A Stock issuable upon the exercise of outstanding Rollover Options (as defined in the Prospectus) to purchase shares of Class A Stock, and (B) up to 6,666,666 Private Warrants.

In addition, the Prospectus relates to the offer and sale of up to 13,333,309 shares of Class A Stock that are issuable by us upon the exercise of 13,333,309 warrants originally issued in connection with the IPO at an exercise price of \$11.50 per share of Class A Stock (the "Public Warrants" and, together with the Private Warrants, the "Warrants"). On February 3, 2021, we announced the redemption of the Public Warrants. As a result of the ensuing exercises of the Public Warrants and the redemption of the remaining Public Warrants, no Public Warrants were outstanding as of April 14, 2021.

Our Class A Stock is listed on the Nasdaq Global Select Market ("Nasdaq") under the symbol "LAZR." On December 13, 2021, the closing price of our Class A Stock was \$14.67 per share.

This prospectus supplement should be read in conjunction with the Prospectus, and this prospectus supplement is qualified by reference to the Prospectus, except to the extent that the information provided by this prospectus supplement supersedes the information contained in the Prospectus.

This prospectus supplement is not complete without, and may not be delivered or utilized except in connection with, the Prospectus dated May 27, 2021 with respect to the securities described above, including any amendments or supplements thereto.

We are an "emerging growth company" as defined in Section 2(a) of the Securities Act of 1933, as amended, and, as such, have elected to comply with certain reduced disclosure and regulatory requirements.

Investing in our Class A Stock is highly speculative and involves a high degree of risk. You should consider carefully the risks and uncertainties in the section entitled "Risk Factors" beginning on page 6 of the Prospectus.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS SUPPLEMENT. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus supplement is December 14, 2021.

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

FORM 8-K

CURRENT REPORT Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): December 12, 2021

LUMINAR TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation) 001-38791 (Commission File Number) 83-1804317 (IRS Employer Identification No.)

2603 Discovery Drive, Suite 100 Orlando, Florida 32826 (Address of principal executive offices, including zip code) Registrant's telephone number, including area code: (407) 900-5259

N/A

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions: Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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

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

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company \boxtimes

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.

Item 7.01. Regulation FD Disclosure.

On December 12, 2021, Luminar Technologies, Inc. ("Luminar") announced that its Board of Directors has authorized a program to repurchase an amount of Class A common stock not to exceed the greater of \$250 million and 50% of the aggregate principal amount of the notes (as defined below). The repurchase program does not have an expiration date. Under the repurchase program, Luminar may purchase shares of Class A common stock from time to time through open market repurchases, privately negotiated transactions or other means, including through Rule 10b5-1 trading plans or through the use of other techniques such as accelerated share repurchases. The timing and number of shares repurchased will depend on a variety of factors, including stock price, trading volume, and general business and market conditions. A copy of the press release announcing the common stock repurchase program is furnished hereto as Exhibit 99.1 and is incorporated herein by reference.

The information furnished with this Item 7.01, including Exhibit 99.1, shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or incorporated by reference in any filing under the Securities Act of 1933, as amended (the "Securities Act"), or the Exchange Act, regardless of any general incorporation language in such filing.

Item 8.01. Other events.

On December 14, 2021, Luminar announced its intention to offer, subject to market conditions and other factors, \$500.0 million aggregate principal amount of convertible senior notes due 2026 (the "notes") in a private offering (the "offering") to persons reasonably believed to be qualified institutional buyers pursuant to Rule 144A under the Securities Act. In connection with the offering, Luminar also expects to grant the initial purchasers of the notes a 13-day period to purchase up to an additional \$75.0 million aggregate principal amount of the notes.

Luminar intends to use a portion of the net proceeds from the offering for general corporate purposes that advance its growth strategy and to pay the cost of the capped call transactions described below. Luminar also intends to use a portion of the net proceeds to repurchase shares of its Class A common stock in an amount not to exceed the greater of \$250 million and 50% of the aggregate principal amount of the notes being offered, including from certain purchasers of notes in privately negotiated transactions through one of the initial purchasers or its affiliate as Luminar's agent, concurrently with or following the offering as well as through a variety of methods, which could include open market purchases, accelerated share repurchase transactions, 10b5-1 plans, other transactions that may be structured through investment banking institutions or a combination thereof. Luminar expects the purchase price per share of the Class A common stock repurchased from certain purchasers of notes in privately negotiated transactions to equal the closing price per share of Luminar's Class A common stock repurchased from certain purchasers of notes in privately negotiated transactions to equal the closing price per share of Luminar's Class A common stock repurchased from certain purchasers of notes in privately negotiated transactions to equal the closing price per share of Luminar's Class A common stock on the date of pricing of the offering. These activities and Luminar's repurchases of shares of its Class A common stock or the notes, and, to the extent the activity occurs during any observation period related to a conversion of notes, it could affect the amount and value of the consideration that noteholders will receive upon conversion of the notes. Any such share repurchases may increase, or prevent a decrease in, the market price of Luminar's Class A common stock.

The notes will be senior unsecured obligations of Luminar and will accrue interest payable semi-annually in arrears. The notes will be convertible under certain circumstances into cash, shares of Luminar's Class A common stock or a combination thereof, at Luminar's election. The notes will mature on December 15, 2026, unless earlier converted, redeemed or repurchased. The interest rate, initial conversion rate and other terms of the notes are to be determined upon pricing of the offering.

In connection with the pricing of the notes, Luminar intends to enter into privately negotiated capped call transactions with one or more of the initial purchasers of the notes and/or their respective affiliates and/or other financial institutions (the "option counterparties"). The capped call transactions are expected generally to reduce the potential dilution to Luminar's Class A common stock upon conversion of the notes and/or offset any cash payments Luminar is 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, which is subject to certain adjustments under the terms of the capped call transactions. If the initial purchasers of the notes exercise their option to purchase additional notes, Luminar expects to enter into additional capped call transactions with the option counterparties.

Luminar has been advised that, in connection with establishing their initial hedges of the capped call transactions, the option counterparties and/or their respective affiliates expect to enter into various derivative transactions with respect to Luminar's Class A common stock and/or purchase shares of Luminar's Class A common stock concurrently with or shortly after the pricing of the notes. This activity could increase (or reduce the size of any decrease in) the market price of Luminar's Class A common stock or the notes at that time.

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 Luminar's Class A common stock and/or purchasing or selling Luminar's Class A common stock or other securities of Luminar 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 Luminar on any fundamental change repurchase date, any redemption date or any other date on which the notes are retired by Luminar). This activity could also cause a decrease or avoid an increase in the market price of Luminar's Class A common stock or the notes, which could affect the ability of noteholders to convert the notes and, to the extent the activity occurs following conversion or during any observation period related to a conversion of notes, it could affect the amount and value of the consideration that noteholders will receive upon conversion of such notes.

The notes will be offered only to persons reasonably believed to be qualified institutional buyers pursuant to Rule 144A under the Securities Act. Neither the notes, nor any shares of Luminar's Class A common stock issuable upon conversion of the notes, have been registered under the Securities Act or the securities laws of any other jurisdiction, and unless so registered, may not be offered or sold in the United States absent registration or an applicable exemption from, or in a transaction not subject to, the registration requirements of the Securities Act and other applicable securities laws.

Neither this Current Report nor this announcement constitutes (x) an offer to sell, or the solicitation of an offer to buy, any of these securities or (y) an offer, solicitation or sale in any jurisdiction in which such offer, solicitation or sale is unlawful.

Forward-Looking Statements

Certain statements included in this Current Report that are not historical facts are forward-looking statements for purposes of the safe harbor provisions under the Private Securities Litigation Reform Act of 1995. Forward-looking statements generally are accompanied by words such as "aims", "believe," "may," "will," "estimate," "set," "continue," "towards," "anticipate," "intend," "expect," "should," "would," "forward," and similar expressions that predict or indicate future events or trends or that are not statements of historical matters. These forward-looking statements include, but are not limited to, statements regarding the proposed terms of the notes, the share repurchases and the capped call transactions, the completion, timing and size of the proposed offering of the notes, the share repurchases and the capped call transactions of actual performance. Forward-looking statements are subject to a number of risks and uncertainties, including but not limited to whether we will consummate the offering of notes on the expected terms or at all, which could differ or change based upon market conditions or for other reasons, that could cause actual results to differ materially from the forward-looking statements including the risks discussed under the heading "Risk Factors" in the Annual Report on Form 10-K filed by Luminar on April 14, 2021, and other documents Luminar files with the Securities and Exchange Commission in the future. You are cautioned not to place undue reliance upon any forward-looking statements, which speak only as of the date made and Luminar undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date of this Current Report.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.	
Exhibit Number	Description
99.1	Press release, dated December 14, 2021.
104	The cover page from this Current Report on Form 8-K, formatted in Inline XBRL.

SIGNATURES

By:

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Luminar Technologies, Inc.

Date: December 14, 2021

/s/ Thomas J. Fennimore

Name:Thomas J. FennimoreTitle:Chief Financial Officer