

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

**FORM S-3  
REGISTRATION STATEMENT**

*Under  
The Securities Act of 1933*

**LENZ THERAPEUTICS, INC.**  
(Exact name of Registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**84-4867570**  
(I.R.S. Employer  
Identification Number)

**201 Lomas Santa Fe Dr., Suite 300  
Solana Beach, California 92075  
(858) 925-7000**  
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

**Evert Schimmelpennink  
President and Chief Executive Officer  
201 Lomas Santa Fe Dr., Suite 300  
Solana Beach, California 92075  
(858) 925-7000**  
(Name, address, including zip code, and telephone number, including area code, of agent for service)

*Copies to:*

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**Approximate date of commencement of proposed sale to the public:** From time to time after the effective date of this registration statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box: ☐

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. ☒ x

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐ o

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐ o

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. ☐ o

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. ☐ o

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 ☐  
Non-accelerated filer ☒

Accelerated filer ☐  
Smaller reporting company ☒  
Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐ o

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission acting pursuant to said Section 8(a) may determine.

The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities, nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS

Subject to Completion Dated April 4, 2025

## 13,070,093 Shares of Common Stock



This prospectus relates to the resale by certain of the selling securityholders named in this prospectus (each a “selling securityholder” and, collectively, the “selling securityholders”) of (i) 12,922,451 shares of common stock, par value \$0.00001 per share (the “Common Stock”) held by the selling securityholders and (ii) 147,642 shares of Common Stock issuable upon the exercise of outstanding warrants held by the selling securityholders. This prospectus also covers any additional securities that may become issuable by reason of stock splits, stock dividends or other similar transactions.

We are registering the resale of these securities to satisfy certain registration rights we have granted. We will not receive any of the proceeds from the sale of the securities by the selling securityholders. We will pay the expenses associated with registering the sales by the selling securityholders, as described in more detail in the section titled “*Use of Proceeds*” appearing elsewhere in this prospectus.

The selling securityholders may sell the securities described in this prospectus in a number of different ways and at varying prices. We provide more information about how the selling securityholders may sell their securities in the section titled “*Plan of Distribution*” appearing elsewhere in this prospectus.

The selling securityholders may sell any, all or none of the securities and we do not know when or in what amount the selling securityholders may sell their securities hereunder following the effective date of this registration statement.

Our Common Stock is listed on The Nasdaq Global Select Market (“Nasdaq”) under the symbol “LENZ.” On April 3, 2025, the last quoted sale price for our Common Stock as reported on Nasdaq was \$23.00.

We are an “emerging growth company,” as defined under the federal securities laws, and, as such, may elect to comply with certain reduced public company reporting requirements for future filings.

Investing in our securities involves a high degree of risk. Before buying any securities, you should carefully read the discussion of the risks of investing in our securities in the section titled “[Risk Factors](#)” beginning on page 6 of this prospectus and under similar headings in any amendments or supplements to this prospectus and the documents incorporated herein by reference.

You should rely only on the information contained in this prospectus or any prospectus supplement or amendment hereto. We have not authorized anyone to provide you with different information.

Neither the Securities Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

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The date of this prospectus is \_\_\_\_\_, 2025.

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You should rely only on the information contained in this prospectus, information incorporated by reference into this prospectus or any supplement to this prospectus prepared by us or on our behalf. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since such dates.

## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the “SEC”) using the “shelf” registration process. Under this shelf registration process, the selling securityholders hereunder may, from time to time, sell the securities offered by them described in this prospectus. We will not receive any proceeds from the sale by such selling securityholders of the securities offered by them described in this prospectus.

Neither we nor the selling securityholders have authorized anyone to provide you with any information or to make any representations other than those contained in or incorporated by reference into this prospectus or any applicable prospectus supplement or any free writing prospectuses prepared by or on behalf of us or to which we have referred you. Neither we nor the selling securityholders take responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. Neither we nor the selling securityholders will make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted.

You should assume that the information appearing in this prospectus and the applicable prospectus supplement to this prospectus is accurate only as of the date on its respective cover and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since those dates.

We may also provide a prospectus supplement or post-effective amendment to the registration statement to add information to, or update or change information contained in, this prospectus. You should read both this prospectus and any applicable prospectus supplement or post-effective amendment to the registration statement together with the additional information to which we refer you in the section of this prospectus titled “*Where You Can Find Additional Information*” and “*Incorporation by Reference*.”

## MARKET AND INDUSTRY DATA

We obtained the industry and market data used throughout this prospectus and the documents incorporated by reference herein from our own internal estimates and research, as well as from independent market research, industry and general publications and surveys, governmental agencies, publicly available information and research, surveys and studies conducted by third parties. Internal estimates are derived from publicly available information released by industry analysts and third-party sources, our internal research and our industry experience, and are based on assumptions made by us based on such data and our knowledge of our industry and market, which we believe to be reasonable. In some cases, we do not expressly refer to the sources from which this data is derived. In addition, while we believe the industry and market data included in this prospectus is reliable and based on reasonable assumptions, such data involve material risks and other uncertainties and are subject to change based on various factors, including those discussed in the section entitled “*Risk Factors*.” These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties or by us.

## TRADEMARKS

This prospectus and the documents incorporated by reference herein contain references to trademarks and service marks belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus and the documents incorporated by reference herein may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that the applicable licensor will not assert, to the fullest extent under applicable law, its rights to these trademarks and trade names. We do not intend our use or display of other companies’ trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of it by, any other companies.

## THE COMPANY

*This summary highlights information contained in greater detail elsewhere in this prospectus. This summary is not complete and does not contain all of the information you should consider in making your investment decision. You should read the entire prospectus carefully before making an investment in our Common Stock, including the section entitled “Risk Factors” and the documents we have incorporated by reference in this prospectus, along with our consolidated financial statements and related notes incorporated by reference in this prospectus.*

### OVERVIEW

We are a pre-commercial biopharmaceutical company focused on the development and commercialization of innovative therapies to improve vision. Our initial focus is the treatment of presbyopia, the inevitable loss of near vision that impacts the daily lives of nearly all people over 45. In the United States, the estimated addressable population who suffer from this condition, known as presbyopes, is 128 million, almost four times the number of individuals suffering from dry eye disease and three times the number of individuals suffering from childhood myopia, macular degeneration, diabetic retinopathy and glaucoma combined. We believe that a once-daily pharmacological eye drop that can effectively and safely improve near vision throughout the full workday, without the need for reading glasses, could be a highly attractive commercial product with an estimated U.S. market opportunity in excess of \$3 billion. It is our goal to develop and commercialize such a product, and we have assembled an executive team with extensive clinical and commercial experience to execute this goal and become the category leader.

Our lead product candidate LNZ100 is a preservative-free, single-use, once-daily eye drop containing aceclidine. We believe our product candidate is differentiated based on rapid onset, degree and duration of near vision improvement, its ability to be used across the full age range of presbyopes, from their mid-40s to well into their mid-70s, as well as a broad refractive range. Aceclidine’s pupil-selective mechanism of action was demonstrated in our clinical trials where near vision improved while avoiding blurry distance vision. Our product candidate was well-tolerated in clinical trials, and its active ingredient aceclidine has a favorable tolerability profile that has been well-established empirically. LNZ100 has patent protection until 2039 in the United States, at a minimum, due to a robust intellectual property portfolio underpinned by issued patents.

We submitted a New Drug Application for LNZ100 to the U.S. Food and Drug Administration (“FDA”) in August 2024. In October 2024, the FDA assigned a Prescription Drug User Fee Act target action date of August 8, 2025, which, if approved, will be immediately followed by a commercial launch in the United States, with the product anticipated to be available in the market in the fourth quarter of 2025. Given our goal to develop and commercialize the leading, once-daily eye drop for presbyopia that can effectively and safely improve near vision throughout the full workday, we continue to build a robust commercial strategy in the United States and plan to be launch-ready upon potential FDA approval.

### CORPORATE INFORMATION

On March 21, 2024 (the “Closing Date”), LENZ Therapeutics, Inc., a Delaware corporation (previously named Graphite Bio, Inc., a Delaware corporation and our predecessor company (“Graphite”)), consummated the previously announced merger pursuant to the terms of the Agreement and Plan of Merger, dated as of November 14, 2023 (the “Merger Agreement”), by and among Graphite, Generate Merger Sub, Inc., a Delaware corporation and wholly-owned subsidiary of Graphite (“Generate Merger Sub”) and LENZ Therapeutics Operations, Inc. (previously named Lenz Therapeutics, Inc.), a Delaware corporation (“LENZ OpCo”).

Pursuant to the Merger Agreement, on the Closing Date, (i) Graphite effected a reverse stock split of Graphite’s issued common stock at a ratio of 1:7, (ii) Graphite changed its name to “LENZ Therapeutics, Inc.”, and (iii) Generate Merger Sub merged with and into LENZ OpCo (the “Merger”), with LENZ OpCo as the surviving company in the Merger and, after giving effect to such Merger, LENZ OpCo becoming a wholly-owned subsidiary of LENZ Therapeutics, Inc. (together with its consolidated subsidiary, “New LENZ” or “LENZ”). As of the open of trading on March 22, 2024, the Common Stock of the Company, formerly those of Graphite, began trading on The Nasdaq Global Select Market (“Nasdaq”) under the symbol “LENZ.”

Our principal executive offices are located at 201 Lomas Santa Fe Dr., Suite 300, Solana Beach, California 92075, and our telephone number is (858) 925-7000.

Our website address is <https://lenz-tx.com/>. The information on, or that can be accessed through, our website is not part of this prospectus, and you should not consider information contained on our website in deciding whether to purchase shares of our Common Stock. We have included our website address in this prospectus solely as an inactive textual reference.

We use the LENZ logo and other marks as trademarks in the United States and other countries. This prospectus contains references to our trademarks and service marks and to those belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus, including logos, artwork and other visual displays, may appear without a trademark symbol, but such references are not intended to indicate in any way that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other entities' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other entity.

We are an emerging growth company as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"). We will remain an emerging growth company until the earliest to occur of: the last day of the fiscal year in which we have more than \$1.235 billion in annual revenues; the date we qualify as a "large accelerated filer," with at least \$700 million of equity securities held by non-affiliates; the issuance, in any three-year period, by us of more than \$1.0 billion in non-convertible debt securities; and the last day of the fiscal year ending after the fifth anniversary of Graphite's initial public offering (i.e., December 31, 2026).

Section 107 of the JOBS Act provides that an emerging growth company can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act of 1933, as amended (the "Securities Act"), for complying with new or revised accounting standards. In other words, an emerging growth company can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected not to opt out of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we, as an emerging growth company, can adopt the new or revised standard at the time private companies adopt the new or revised standard. This may make comparison of our financial statements with certain other public companies difficult or impossible because of the potential differences in accounting standards used.

Additionally, we are a "smaller reporting company" as defined in Item 10(f)(1) of Regulation S-K. Smaller reporting companies may take advantage of certain reduced disclosure obligations, including, among other things, providing only two years of audited financial statements. We may continue to be a smaller reporting company in any given year if either (i) the market value of our stock held by non-affiliates is less than \$250 million as of June 30th in the most recently completed fiscal year, or (ii) our annual revenue is less than \$100 million during the most recently completed fiscal year and the market value of our stock held by non-affiliates is less than \$700 million as of June 30th in the most recently completed fiscal year.

Unless expressly indicated or the context requires otherwise, the terms "LENZ," "New LENZ," the "Company," the "Registrant," "we," "us" and "our" in this prospectus refer to LENZ Therapeutics, Inc., the parent entity formerly named Graphite Bio, Inc., after giving effect to the Merger, and as renamed LENZ Therapeutics, Inc., and where appropriate, our wholly-owned subsidiaries (including LENZ OpCo).

### The Offering

Shares of Common Stock Offered Hereunder	An aggregate of 13,070,093 shares of Common Stock, consisting of (i) 12,922,451 shares of Common Stock held by the selling securityholders and (ii) 147,642 shares of Common Stock issuable upon the exercise of outstanding warrants held by the selling securityholders.
Use of Proceeds	We will not receive any proceeds from the sale of our shares of common stock offered by the selling securityholders under this prospectus (the “Securities”). See the section titled “ <i>Use of Proceeds</i> ” appearing elsewhere in this prospectus for more information.
Common Stock Outstanding	27,531,490 shares of Common Stock as of December 31, 2024.
Risk Factors	See the section titled “ <i>Risk Factors</i> ” and other information included in this prospectus and the documents incorporated by reference for a discussion of factors that you should consider carefully before deciding to invest in our Common Stock.
Nasdaq symbol	“LENZ” for our Common Stock.

The number of shares of Common Stock outstanding is based on 27,531,490 shares of Common Stock as of December 31, 2024 and excludes the following, in each case as of December 31, 2024:

- 164,676 shares of our Common Stock issuable upon the exercise of warrants to purchase shares of our Common Stock outstanding as of December 31, 2024, with an exercise price of \$10.64 per share;
- 1,458,939 shares of our Common Stock issuable upon the exercise of outstanding options under the LENZ OpCo 2020 Equity Incentive Plan (the “2020 Plan”) as of such date, which were assumed by the Company in connection with the Merger, with a weighted average exercise price of \$4.28 per share;
- 8,438 shares of our Common Stock issuable upon the exercise of outstanding options under the LENZ Therapeutics, Inc. (f/k/a Graphite Bio, Inc.) 2021 Stock Option and Incentive Plan as of such date, with a weighted average exercise price of \$11.94 per share;
- 1,522,550 shares of our Common Stock issuable upon the exercise of outstanding options under the LENZ Therapeutics, Inc. 2024 Equity Incentive Plan (the “2024 Plan”) as of such date, with a weighted average exercise price of \$16.45 per share;
- 790,139 shares of our Common Stock issuable upon the exercise of stock options granted pursuant to the 2024 Plan subsequent to December 31, 2024, with a weighted average exercise price of \$26.00 per share;
- 30,500 shares of common stock issuable upon the vesting of restricted stock units granted pursuant to the 2024 Plan subsequent to December 31, 2024;
- 1,544,122 shares of our Common Stock reserved for future issuance under our 2024 Plan, as well as any automatic increases in the number of shares of Common Stock reserved for future issuance under this plan; and
- 250,995 shares of our Common Stock reserved for future issuance under our 2024 Employee Stock Purchase Plan (the “2024 ESPP”), as well as any automatic increases in the number of shares of Common Stock reserved for future issuance under this plan.

## RISK FACTORS SUMMARY

Investing in our Common Stock involves a high degree of risk. You should consider carefully the risks and uncertainties described below, together with all of the other information contained in this prospectus, including our consolidated financial statements and related notes, before deciding to invest in our securities. If any of the following risks actually occur, our business, operating results, financial condition and prospects could be materially and adversely affected. In that event, the market price of our Common Stock could decline, and you could lose all or part of your investment. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that adversely affect our business or results of operations.

Our business is subject to numerous risks and uncertainties that you should consider before investing in our company, as more fully described below. The principal factors and uncertainties that make investing in our company risky include, among others:

- We are a pre-commercial biopharmaceutical company with limited operating history. We have incurred significant losses and negative cash flows from operations since our formation, and we anticipate that we will continue to incur losses as we seek approval and begin commercialization. We have no products approved for commercial sale, which may make it difficult for you to evaluate our current business and predict our future success and viability.
- Our business depends entirely on the development and commercialization of LNZ100, and we do not have additional product candidates in our current development pipeline. If we are unable to successfully complete our clinical development program for LNZ100 and obtain the marketing approvals necessary to commercialize LNZ100, or experience significant delays in doing so, or if after obtaining marketing approvals, we fail to commercialize LNZ100, our business will be materially harmed. We currently generate no revenue from sales of any products and may never generate revenue or be profitable.
- Clinical trials are expensive, time-consuming, difficult to design and implement and involve an uncertain outcome. The outcome of preclinical testing and earlier clinical trials may not be predictive of the success of later clinical trials. The results of our clinical trials may not satisfy the requirements of the FDA, European Medicines Agency or other comparable foreign regulatory authorities, and we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of such product candidate.
- Even if LNZ100 or any other product candidate receives marketing approval, they may fail to achieve market acceptance by eye care professionals and patients, and the market opportunity for these products, if approved, may be smaller than we estimate.
- If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to sell and market our product candidates on acceptable terms, we may be unable to successfully commercialize our product candidates that obtain regulatory approval.
- We intend to deploy a targeted, cost-effective, digitally focused direct-to-consumer marketing strategy, but if we are unable to be sufficiently effective with a limited budget and are required to spend more than anticipated, we may need to raise more capital, divert resources from other strategies, or just fail to reach the intended market, in each case which could have a material adverse effect on our business.
- If we are unable to obtain and maintain sufficient intellectual property protection for our technology and products and product candidates we may develop, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors or other third parties could develop and commercialize products similar or identical to ours, and our ability to successfully develop and, if approved, commercialize our product candidates may be adversely affected.
- We face significant competition, and if our competitors develop and market technologies or products more rapidly than we do or that are more effective, safer or less expensive than the product candidates we



develop, our commercial opportunities will be negatively impacted. Our product candidates may, if approved, also face competition from existing branded, generic and off-label products.

- We contract with third parties for the manufacture of our product candidates for our ongoing clinical trials, and expect to continue to do so for additional clinical trials and ultimately for commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or drugs or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.
- The manufacture of drugs is complex and our third-party manufacturers may encounter difficulties in production. If any of our third-party manufacturers encounter such difficulties, our ability to provide adequate supply of LNZ100 for patients, if approved, could be delayed or prevented.
- We have relied, and expect to continue to rely on third parties, including independent clinical investigators and CROs, to conduct, supervise and monitor certain aspects of our clinical trials and any future preclinical studies. If these third parties do not successfully carry out their contractual duties, comply with applicable regulatory requirements or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our product candidates, or such approval or commercialization may be delayed, and our business could be substantially harmed.
- Our success is highly dependent on our ability to attract and retain highly skilled executive officers and employees.
- The market price of our common stock is expected to be volatile.

## **RISK FACTORS**

*An investment in our Common Stock involves a high degree of risk. In addition to the risk and uncertainties described under the section titled "Cautionary Note Regarding Forward-Looking Statements," you should consider carefully the risks and uncertainties incorporated by reference to our most recent Annual Report on Form 10-K, any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K, and all other information contained in or incorporated by reference into this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in any applicable prospectus supplement before acquiring any of such securities. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that adversely affect our business or results of operations. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.*

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements in this prospectus and the documents incorporated by reference herein may constitute “forward-looking statements” for purposes of the federal securities laws. Our forward-looking statements include, but are not limited to, statements regarding our or our management team’s expectations, hopes, beliefs, intentions or strategies regarding the future, including those relating to the Merger and their expected benefits; our plans relating to the clinical development of our product candidates, including the size, number and areas to be evaluated; our plans relating to commercializing our product candidates, if approved, including the geographic areas of focus and strategy; and our ability to obtain funding for its operations. Forward-looking statements include statements relating to our management team’s expectations, hopes, beliefs, intentions or strategies regarding the future, including those relating to the Merger and related transactions. In addition, any statements that refer to projections, forecasts or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking statements. The words “believe,” “may,” “will,” “estimate,” “continue,” “anticipate,” “intend,” “expect,” “could,” “would,” “project,” “plan,” “potentially,” “likely,” “target” or the negative of these terms and other similar expressions and variations thereof are intended to identify forward-looking statements, but are not the exclusive means of identifying such statements, and the absence of these words does not mean that a statement is not forward-looking.

These forward-looking statements are based on current expectations and beliefs concerning future developments and their potential effects. There can be no assurance that future developments affecting us will be those that we have anticipated. These forward-looking statements involve a number of risks, uncertainties (some of which are beyond our control) or other assumptions that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. As a result of a number of known and unknown risks and uncertainties, our actual results or performance may be materially different from those expressed or implied by these forward-looking statements. Some factors that could cause actual results to differ include, but are not limited to, the following:

- the likelihood of our clinical trials demonstrating safety and efficacy of our product candidates to the satisfaction of the FDA, and other positive results;
- the timing, scope and likelihood of regulatory filings and approvals for LNZ100;
- our ability to obtain and maintain regulatory approval of LNZ100;
- our plans relating to the development of LNZ100;
- the size of the market opportunity for LNZ100, including our estimates of the size of the affected population and potential adoption rate;
- our plans relating to commercializing LNZ100, if approved, including the geographic areas of focus and sales strategy;
- our competitive position and the success of competing therapies that are or may become available;
- the beneficial characteristics, and the potential safety, efficacy and therapeutic effects of LNZ100;
- the need to hire additional personnel and our ability to attract and retain such personnel;
- our plans relating to the further development and manufacturing of LNZ100 and any future product candidates;
- the expected potential benefits of strategic collaborations with third parties and our ability to attract collaborators with development, regulatory and commercialization expertise;
- the rate and degree of market acceptance and clinical utility of LNZ100 and any other product candidates we may develop;

- the impact of existing laws and regulations and regulatory developments in the United States and other jurisdictions;
- our intellectual property position, including the scope of protection we are able to establish and maintain for intellectual property rights covering LN2100, including the extensions of existing patent terms where available, the validity of intellectual property rights held by third parties, and our ability not to infringe, misappropriate or otherwise violate any third-party intellectual property rights;
- our continued reliance on third parties to conduct any additional clinical trials of LN2100 or any future product candidates, and for the manufacture of our product candidates for any such trials;
- the accuracy of our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- our financial performance;
- our ability to recognize the anticipated benefits of the Merger;
- the period over which we estimate our existing cash and cash equivalents will be sufficient to fund our future operating expenses and capital expenditure requirements;
- our expectations regarding the period during which we will remain an emerging growth company under the JOBS Act;
- our anticipated use of our existing resources and the proceeds from the Merger; and
- the risks and uncertainties described under the heading “Risk Factors” and in our current and periodic reports, and other filings, filed from time to time with the SEC that are incorporated by reference into this prospectus.

Should one or more of these risks or uncertainties materialize, or should any of our assumptions prove incorrect, actual results may vary in material respects from those projected in these forward-looking statements. It is not possible to predict or identify all such risks.

The forward-looking statements made in this prospectus relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statements made in this prospectus to reflect events or circumstances after the date of this prospectus or to reflect new information or the occurrence of unanticipated events, except as required by law. We may not actually achieve the plans, intentions, or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make.

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 prospectus, 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.

#### **USE OF PROCEEDS**

All of the Securities offered by the selling securityholders pursuant to this prospectus will be sold by the selling securityholders for their respective accounts. We will not receive any of the proceeds from the sale of the Securities hereunder.

With respect to the registration of shares of our Common Stock offered by the selling securityholders pursuant to this prospectus, the selling securityholders will pay any underwriting discounts and commissions and expenses incurred by them for brokerage, accounting, tax or legal services or any other expenses incurred by them in disposing of the Securities. We will bear all other costs, fees and expenses incurred in effecting the registration of the Securities covered by this prospectus, including, without limitation, all registration and filing fees, Nasdaq listing fees, and fees of our counsel and our independent registered public accountants.

## SELLING SECURITYHOLDERS

This prospectus relates to the resale by the selling securityholders from time to time of up to an aggregate of 13,070,093 shares of Common Stock, consisting of (i) 12,922,451 shares of Common Stock held by the selling securityholders and (ii) 147,642 shares of Common Stock issuable upon the exercise of outstanding warrants held by the selling securityholders. The selling securityholders may from time to time offer and sell any or all of the shares of Common Stock set forth below pursuant to this prospectus and any accompanying prospectus supplement. When we refer to the “selling securityholders” in this prospectus, we mean the persons listed in the table below and their permitted transferees who later come to hold any of the selling securityholders’ interest in the Common Stock in accordance with the terms of the applicable agreements governing their respective registration rights, other than through a public sale.

The following table sets forth, based on written representations from the selling securityholders as of March 28, 2025 and subsequent filings with the SEC, as applicable, the names of the selling securityholders, the aggregate number of shares of Common Stock beneficially owned by the selling securityholders, the aggregate number of shares of Common Stock that the selling securityholders may offer pursuant to this prospectus and the number of shares of Common Stock that would be beneficially owned by the selling securityholders after the sale of the shares of Common Stock offered hereby assuming that the selling securityholders sell all of the shares of Common Stock covered by this prospectus. The percentage of beneficial ownership after the offered shares of Common Stock are sold is calculated based on 27,543,120 shares of Common Stock outstanding as of March 28, 2025.

We have determined beneficial ownership in accordance with the rules of the SEC and the information is not necessarily indicative of beneficial ownership for any other purpose. Unless otherwise indicated below, to our knowledge, the persons and entities named in the tables have sole voting and sole investment power with respect to the shares of Common Stock set forth below, subject to community property laws where applicable.

We cannot advise you as to whether the selling securityholders will in fact sell any or all of such Common Stock. In addition, the selling securityholders may sell, transfer or otherwise dispose of, at any time and from time to time, the Common Stock in transactions exempt from the registration requirements of the Securities Act after the date of this prospectus. Information about the selling securityholders, including those listed below, may change over time. Since the effectiveness of the initial prospectus, certain securityholders may have sold or otherwise transferred their securities registered thereunder. For purposes of this table, we have assumed that the selling securityholders will have sold all of the shares of Common Stock covered by this prospectus upon the completion of the offering.

Selling securityholder information for each additional selling securityholder, if any, will be set forth by a prospectus supplement to the extent required prior to the time of any offer or sale of such selling securityholder’s shares pursuant to this prospectus. Any prospectus supplement may add, update, substitute, or change the information contained in this prospectus, including the identity of each selling securityholder and the number of shares registered

on its behalf. A selling securityholder may sell or otherwise transfer all, some or none of such shares in this offering. See “*Plan of Distribution.*”

Name of Selling Securityholder	Common Stock Beneficially Owned Prior to Offering	Number of Shares of Common Stock Being Offered	Common Stock Beneficially Owned After the Offering Shares of Common Stock are Sold	
			Number	Percent
Alpha Wave Ventures II, LP <sup>(1)</sup>	3,612,211	3,612,211	—	—
McCollum Living Trust <sup>(2)</sup>	636,924	595,842	41,082	*
Entities affiliated with RA Capital Management, L.P. <sup>(3)</sup>	4,259,106	4,249,356	9,750	*
Entities affiliated with Versant Management <sup>(4)</sup>	4,612,684	4,612,684	—	—
<b>Total Shares</b>	<b>13,120,925</b>	<b>13,070,093</b>	<b>50,832</b>	

\* Less than 1%.

- (1) Consists of (i) 2,714,002 shares of Common Stock received by Alpha Wave Ventures II, LP in the Merger as an equityholder of record of LENZ OpCo, and (ii) 898,209 shares of Common Stock purchased by Alpha Wave Ventures II, LP in a private placement. Alpha Wave Ventures GP, Ltd. (“Alpha Wave Ventures GP”) is the general partner of Alpha Wave Ventures II, LP. Alpha Wave Ventures GP is a joint venture between Alpha Wave Global, LP (“Alpha Wave”) and Lunate Holding RSC LTD (“Lunate”). Lunate is majority-owned by Chimera Investment LLC (“Chimera”). Richard Gerson is the Chairman and Chief Investment Officer of Alpha Wave. Chimera is controlled by its board of directors. The managing partners of Lunate Capital Limited, a wholly-owned investment manager subsidiary of Lunate, manage the investment activities of Lunate. The address of Alpha Wave Ventures II, LP is 667 Madison Avenue, 19<sup>th</sup> Floor, New York, NY 10065.
- (2) Consists of (i) 95,034 shares of Common Stock received by James McCollum in the Merger as an equityholder of LENZ OpCo, which have been transferred to the McCollum Living Trust, (ii) 477,600 shares of Common Stock received by the McCollum Living Trust in the Merger as an equityholder of LENZ OpCo, (iii) 6,575 shares of Common Stock subject to warrants to purchase shares of Common Stock held by the McCollum Living Trust that were assumed in the Merger, (iv) 16,633 shares of common stock purchased by the McCollum Living Trust in a private placement, (v) 31,332 purchased by the McCollum Living Trust in the open market, and (vi) 9,750 shares of Common Stock subject to options held by Mr. McCollum exercisable within 60 days of March 12, 2025. Mr. McCollum is a trustee of the McCollum Living Trust and as such has voting and investment control over the shares held by the McCollum Living Trust. Mr. McCollum is a member of the board of directors of the Company.
- (3) Consists of (i) 2,386,301 shares of Common Stock received by RA Capital Healthcare Fund, L.P. (“RACHF”) in the Merger as an equityholder of LENZ OpCo, (ii) 629,784 shares of Common Stock received by RA Capital Nexus Fund II, L.P. (“Nexus II”) in the Merger as an equityholder of LENZ OpCo, (iii) 164,729 shares of Common Stock received by a separately managed account (the “Account,” and together with RACHF and Nexus II, the “RA Funds”) in the Merger as an equityholder of LENZ OpCo, (iv) 54,582 shares of Common Stock subject to warrants to purchase shares of Common Stock held by RACHF that were assumed in the Merger, (v) 10,580 shares of Common Stock subject to warrants to purchase shares of Common Stock held by Nexus II that were assumed in the Merger, (vi) 5,371 shares of Common Stock subject to warrants to purchase shares of Common Stock held by the Account that were assumed in the Merger, (vii) 933,038 shares of Common Stock purchased by RACHF in a private placement, (viii) 64,971 shares of Common Stock purchased by Nexus II in a private placement, and (ix) 9,750 shares of Common Stock subject to options held by Dr. Scheiner exercisable within 60 days of March 12, 2025. RA Capital Management, L.P. is the investment manager for the RA Funds. The general partner of RA Capital Management, L.P. is RA Capital Management GP, LLC, of which Peter Kolchinsky, Ph.D. and Rajeev Shah are the managing members. Each of RA Capital Management, L.P., RA Capital Management GP, LLC, Mr. Kolchinsky and Mr. Shah may be deemed to have voting and investment power over the securities held by the RA Funds. RA Capital Management, L.P., RA Capital Management GP, LLC, Mr. Kolchinsky and Mr. Shah disclaim beneficial ownership of such securities, except to the extent of any pecuniary interest therein. Zach Scheiner, a principal at RA Capital Management, L.P., is a member of the board of directors of the Company. The principal business address of the persons and entities listed above is 200 Berkeley Street, 18th Floor, Boston, MA 02116.
- (4) Consists of (i) 598,203 shares of Common Stock received by Versant Vantage II, L.P. (“Versant Vantage II”) in the Merger as an equityholder of LENZ OpCo, (ii) 1,598,789 shares of Common Stock received by Versant Venture Capital VII, L.P. (“Versant VII”) in the Merger as an equityholder of LENZ OpCo, (iii) 70,534 shares of Common Stock subject to warrants to purchase shares of Common Stock held by Versant VII that were assumed in the Merger, (iv) 2,101,199 shares of Common Stock held by Versant Venture Capital VI, LP (“Versant Capital VI”), and (v) 243,959 shares of Common Stock held by Versant Vantage II. Versant Vantage II GP-GP, LLC is the general partner of Versant Vantage II GP, L.P., which is the general partner of Versant Vantage II. Each of Versant Vantage II GP and Versant Vantage II GP-GP share voting and dispositive power with respect to the shares held by Versant Vantage II. Versant Ventures VI GP-GP, LLC (“Versant Ventures VI GP-GP”) is the general partner of Versant Ventures VI GP, L.P. (“Versant Ventures VI GP”), which is the general partner of Versant Capital VI. Each of Versant Ventures VI GP-GP and Versant Ventures VI GP share voting and dispositive power with respect to the shares held by Versant Capital VI. Versant Ventures VII GP-GP, LLC is the general partner of Versant Ventures VII GP, L.P., which is the general partner of Versant VII. Each of Versant Ventures VII GP and Versant Ventures VII GP-GP share voting and dispositive power with respect to the securities held by Versant VII. The address for each of the entities mentioned in this footnote is One Sansome Street, Suite 1650, San Francisco, CA 94104.

## DESCRIPTION OF SECURITIES

The following description of our capital stock and provisions of our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws are summaries and are qualified by reference to our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws and applicable provisions of Delaware corporate law.

### Authorized Capital Stock

Our authorized capital stock consists of 300,000,000 shares of common stock, par value \$0.00001 per share and 10,000,000 shares of preferred stock, par value \$0.00001 per share.

### Common Stock

#### *Voting*

Holders of our common stock are entitled to one vote for each share of common stock held of record for the election of directors and on all matters submitted to a vote of stockholders. Except as described under “*Anti-Takeover Effects of Delaware Law and Provisions of our Amended and Restated Certificate of Incorporation and Bylaws*” below, a majority vote of the holders of our common stock is generally required to take action under our Certificate of Incorporation and Bylaws.

#### *Dividends*

Holders of common stock are entitled to receive dividends ratably, if any, as may be declared by our board of directors out of legally available funds, subject to any preferential dividend rights of any preferred stock then outstanding.

#### *Distributions on Liquidation*

Upon our dissolution, liquidation or winding up, holders of our common stock are entitled to share ratably in our net assets legally available after the payment of all of our debts and other liabilities, subject to the preferential rights of any preferred stock then outstanding.

#### *Other Rights*

Holders of our common stock have no preemptive, subscription, redemption or conversion rights and no sinking fund provisions are applicable to our common stock. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

### Preferred Stock

Our board of directors is authorized, without action by the stockholders, to designate and issue up to an aggregate of 10,000,000 shares of preferred stock in one or more series. Our board of directors can designate the rights, preferences and privileges of the shares of each series and any of its qualifications, limitations or restrictions. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of common stock. The issuance of preferred stock, while providing flexibility in connection with possible future financings and acquisitions and other corporate purposes could, under certain circumstances, have the effect of restricting dividends on our common stock, diluting the voting power of our common stock, impairing the liquidation rights of our common stock, or delaying, deferring or preventing a change in control of the Company, which might harm the market price of our common stock. Our board of directors will make any determination to issue such shares based on its judgment as to our best interests and the best interests of our stockholders.



## **Anti-Takeover Effects of Delaware Law and Provisions of our Amended and Restated Certificate of Incorporation and Bylaws**

Certain provisions of the DGCL and of our Certificate of Incorporation and Bylaws could have the effect of delaying, deferring or discouraging another party from acquiring control of our Company. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids and, as a consequence, they might also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions are also designed in part to encourage anyone seeking to acquire control of us to first negotiate with our board of directors. These provisions might also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders might otherwise deem to be in their best interests. However, we believe that the advantages gained by protecting our ability to negotiate with any unsolicited and potentially unfriendly acquirer outweigh the disadvantages of discouraging such proposals, including those priced above the then-current market value of our common stock, because, among other reasons, the negotiation of such proposals could improve their terms.

### ***Delaware Takeover Statute***

We are subject to the provisions of Section 203 of the DGCL. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, the Graphite board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances, but not the outstanding voting stock owned by the interested stockholder; or
- at or after the time the stockholder became interested, the business combination was approved by the Graphite board of directors and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, lease, pledge, exchange, mortgage or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- subject to exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

**Transfer Agent**

The transfer agent for our Common Stock is Equiniti Trust Company, LLC.

**Exchange Listing**

Our Common Stock is listed on Nasdaq under the symbol “LENZ.”

## PLAN OF DISTRIBUTION

The selling securityholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling securityholders as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The selling securityholders may use any one or more of the following methods when disposing of shares or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling securityholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted by applicable law.

The selling securityholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act of 1933, as amended (the “Securities Act”), amending the list of selling securityholders to include the pledgee, transferee or other successors in interest as selling securityholders under this prospectus. The selling securityholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling securityholders for purposes of this prospectus.

In connection with the sale of our common stock or interests therein, the selling securityholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling securityholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The selling securityholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The aggregate proceeds to the selling securityholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling securityholders

reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

The selling securityholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, provided that they meet the criteria and conform to the requirements of that rule, or another available exemption from the registration requirements of the Securities Act.

The selling securityholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be “underwriters” within the meaning of Section 2(a)(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling securityholders who are “underwriters” within the meaning of Section 2(a)(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act.

To the extent required, the shares of our common stock to be sold, the names of the selling securityholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, and any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling securityholders that the anti-manipulation rules of Regulation M under the Securities Exchange Act of 1934, as amended, may apply to sales of shares in the market and to the activities of the selling securityholders and their affiliates. In addition, to the extent applicable, we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling securityholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling securityholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the selling securityholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

We have agreed with the selling securityholders to use commercially reasonable efforts to cause the registration statement of which this prospectus constitutes a part to become effective and to remain continuously effective until the earlier of (1) such time as all of the shares covered by this prospectus have been disposed of pursuant to and in accordance with such registration statement or (2) (B) the date that all the shares covered by this prospectus cease to be Registrable Securities.

## LEGAL MATTERS

The validity of the Securities offered hereby has been passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation. Certain members of, and investment partnerships comprised of members of, and persons associated with, Wilson Sonsini Goodrich & Rosati, Professional Corporation, directly or indirectly own less than 0.1% of the outstanding shares of our common stock.

## EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2024, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

## WHERE YOU CAN FIND ADDITIONAL INFORMATION

We file reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is <http://www.sec.gov>.

Our website address is <https://lenz-tx.com/>. The information on our website, however, is not, and should not be deemed to be, a part of this prospectus.

This prospectus and any applicable prospectus supplement are part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. Statements in this prospectus or any prospectus supplement about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement through the SEC's website, as provided above.

## INCORPORATION BY REFERENCE

The SEC's rules allow us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in this prospectus or a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or a subsequently filed document incorporated by reference modifies or replaces that statement.

This prospectus and any accompanying prospectus supplement incorporate by reference the documents set forth below that have previously been filed with the SEC:

- our Annual Report on Form 10-K for the year ended December 31, 2024, filed with the SEC on [March 19, 2025](#) (our "Annual Report");
- the description of our Common Stock contained in the [Annual Report](#).

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, which we refer to as the "Exchange Act" in this prospectus, prior to the termination of this offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents.

You may request a free copy of any of the documents incorporated by reference in this prospectus by writing or telephoning us at the following address:

LENZ Therapeutics, Inc.  
201 Lomas Santa Fe Dr., Suite 300  
Solana Beach, California 92075  
(858) 925-7000

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in this prospectus or any accompanying prospectus supplement.

## PART II

### INFORMATION NOT REQUIRED IN PROSPECTUS

#### ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.

The following table sets forth all expenses to be paid by the Registrant, other than underwriting discounts and commissions, in connection with this offering. All amounts shown are estimates.

SEC registration fee	\$	47,765
FINRA filing fee		—
Printing and engraving		*
Legal fees and expenses	\$	50,000
Accounting fees and expenses	\$	20,000
Transfer agent and registrar fees		*
Miscellaneous		*
Total	\$	117,765

\* These fees are calculated based on the securities offered and the number of issuances and accordingly cannot be defined at this time.

#### ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 145 of the DGCL authorizes a corporation to indemnify its directors and officers against liabilities arising out of actions, suits and proceedings to which they are made or threatened to be made a party by reason of the fact that they have served or are currently serving as a director or officer to a corporation. The indemnity may cover expenses (including attorneys' fees) judgments, fines and amounts paid in settlement actually and reasonably incurred by the director or officer in connection with any such action, suit or proceeding. Section 145 permits corporations to pay expenses (including attorneys' fees) incurred by directors and officers in advance of the final disposition of such action, suit or proceeding. In addition, Section 145 provides that a corporation has the power to purchase and maintain insurance on behalf of its directors and officers against any liability asserted against them and incurred by them in their capacity as a director or officer, or arising out of their status as such, whether or not the corporation would have the power to indemnify the director or officer against such liability under Section 145.

We have adopted provisions in our charter that eliminate or limit the personal liability of our directors to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended. Consequently, a director will not be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any unlawful payments related to dividends or unlawful stock purchases, redemptions or other distributions; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not alter director liability under the federal securities laws and do not affect the availability of equitable remedies such as an injunction or rescission.

In addition, our bylaws provide that:

- we will indemnify our directors, officers and, in the discretion of our board of directors, certain employees to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended; and

- we will advance expenses, including attorneys' fees, to our directors and, in the discretion of our board of directors, to our officers and certain employees, in connection with legal proceedings relating to their service for or on behalf of us, subject to limited exceptions.

We have entered into separate indemnification agreements with our directors and officers that may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. We have entered into agreements with our officers and directors to provide contractual indemnification in addition to the indemnification provided for in our certificate of incorporation. Our bylaws also permit us to maintain insurance on behalf of any officer, director or employee for any liability arising out of his or her actions, regardless of whether Delaware law would permit such indemnification. We have obtained a policy of director's and officer's liability insurance that insures our officers and directors against the cost of defense, settlement or payment of a judgment in some circumstances and insures us against our obligations to indemnify our officers and directors. These indemnification provisions and the indemnification agreements may be sufficiently broad to permit indemnification of directors and officers for liabilities, including reimbursement of expenses incurred, arising under the Securities Act of 1933, as amended, or the Securities Act.

#### ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

- (1) **Exhibits.** We have filed the exhibits listed on the accompanying Exhibit Index of this Registration Statement.

Exhibit Number	Description
2.1†	<a href="#"><u>Agreement and Plan of Merger, dated as of November 14, 2023, by and among Graphite Bio, Inc., Generate Merger Sub, Inc. and LENZ Therapeutics, Inc. (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed with the SEC on November 15, 2023).</u></a>
3.1	<a href="#"><u>Amended and Restated Certificate of Incorporation, as amended (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the SEC on March 22, 2024).</u></a>
3.2	<a href="#"><u>Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed with the SEC on June 30, 2021).</u></a>
4.1	<a href="#"><u>Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on June 11, 2021).</u></a>
4.2	<a href="#"><u>Form of Warrant to Purchase Shares of Series A Preferred Stock (incorporated by reference to Exhibit 4.5 to the Company's Registration Statement on Form S-4 filed with the SEC on December 6, 2023).</u></a>
5.1	<a href="#"><u>Opinion of Wilson Sonsini Goodrich &amp; Rosati, P.C.</u></a>
10.1	<a href="#"><u>Registration Rights Agreement, dated March 21, 2024, by and among LENZ Therapeutics, Inc. and certain parties thereto (incorporated by reference to Exhibit 10.21 to the Company's Current Report on Form 8-K filed with the SEC on March 22, 2024).</u></a>
23.1	<a href="#"><u>Consent of Independent Registered Public Accounting Firm.</u></a>
23.2	<a href="#"><u>Consent of Wilson Sonsini Goodrich &amp; Rosati, P.C. (included in Exhibit 5.1).</u></a>
24.1	<a href="#"><u>Power of Attorney (included on the signature page hereto).</u></a>
107	<a href="#"><u>Filing Fee Table</u></a>

† Schedules and exhibits to this Exhibit omitted pursuant to Regulation S-K Item 601(b)(2). The Registrant agrees to furnish supplementally a copy of any omitted schedule or exhibit to the SEC upon request.

- (2) **Financial Statement Schedules.** All financial statement schedules are omitted because the information called for is not required or is shown either in the consolidated financial statements or in the notes thereto.



## ITEM 17. UNDERTAKINGS.

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

*provided, however*, that paragraphs (a)(1)(i), (ii) and (iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to section 13 or section 15(d) of the Exchange Act that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act to any purchaser:

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration

statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

- (5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
- i. Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
  - ii. Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
  - iii. The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
  - iv. Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Solana Beach, State of California, on April 4, 2025.

### LENZ THERAPEUTICS, INC.

By: /s/ Evert Schimmelpennink

Evert Schimmelpennink

Chief Executive Officer

## POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Evert Schimmelpennink and Daniel Chevallard, and each of them, as his or her true and lawful attorney-in-fact and agent with full power of substitution, for him or her in any and all capacities, to sign any and all amendments to this registration statement (including post-effective amendments and registration statements filed pursuant to Rule 462 under the Securities Act of 1933, as amended), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact, proxy and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact, proxy and agent, or his or her substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated:

Signature	Title	Date
<u>/s/ Evert Schimmelpennink</u> Evert Schimmelpennink	Chief Executive Officer, President and Director (Principal Executive Officer)	April 4, 2025
<u>/s/ Daniel Chevallard</u> Daniel Chevallard	Chief Financial Officer (Principal Financial and Accounting Officer)	April 4, 2025
<u>/s/ Jeff George</u> Jeff George	Director	April 4, 2025
<u>/s/ Frederic Guerard</u> Frederic Guerard	Director	April 4, 2025
<u>/s/ James McCollum</u> James McCollum	Director	April 4, 2025
<u>/s/ Zach Scheiner</u> Zach Scheiner	Director	April 4, 2025
<u>/s/ Shelley Thunen</u> Shelley Thunen	Director	April 4, 2025
<u>/s/ Kimberlee C. Drapkin</u> Kimberlee C. Drapkin	Director	April 4, 2025

**Calculation of Filing Fee Tables****Form S-3**  
(Form Type)**LENZ Therapeutics, Inc.**  
(Exact Name of Registrant as Specified in its Charter)**Table 1: Newly Registered Securities**

	Security Type	Security Class	Fee Calculation Rule	Amount Registered(1) (2)	Proposed Maximum Offering Price Per Unit(3)	Maximum Aggregate Offering Price(3)	Fee Rate	Amount of Registration Fee
Fees to be Paid	Equity	Common Stock, \$0.00001 par value per share	457(c)	13,070,093	\$23.87	\$311,983,119.91	0.00015310	\$47,764.62
		Total Offering Amounts				\$311,983,119.91		\$47,764.62
		Total Fees Previously Paid						\$0
		Net Fee Due						\$47,764.62

- (1) Pursuant to Rule 416(a) of the Securities Act of 1933, as amended, this registration statement shall also cover any additional shares of the registrant's common stock that become issuable by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without receipt of consideration that increases the number of the registrant's outstanding shares of common stock.
- (2) This registration statement registers 12,922,451 outstanding shares of common stock of the registrant and 147,642 shares of common stock of the registrant issuable upon the exercise of warrants issued by the registrant.
- (3) Estimated solely for the purpose of calculating the registration fee according to Rule 457(c) under the Securities Act of 1933, as amended, based on the average of the high (\$24.90) and low (\$22.84) prices of the registrant's common stock reported on the Nasdaq Global Select Market on April 3, 2025, which is within five business days prior to filing this registration statement.

April 4, 2025

LENZ Therapeutics, Inc.  
201 Lomas Santa Fe Dr., Suite 300  
Solana Beach, California 92075

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

This opinion is furnished to you in connection with the Registration Statement on Form S-3 (the “Registration Statement”), filed by LENZ Therapeutics, Inc. (the “Company”) with the Securities and Exchange Commission (the “Commission”) in connection with the registration under the Securities Act of 1933, as amended, of the offer and resale of an aggregate of 13,070,093 shares (the “Shares”) of the Company’s common stock, \$0.00001 par value per share (the “Common Stock”), consisting of (i) 12,922,451 shares of Common Stock (the “Outstanding Shares”) and (ii) 147,642 shares of Common Stock (the “Warrant Shares”) issuable upon the exercise of outstanding warrants (the “Warrants”), to be sold by the selling securityholders listed in the Registration Statement under “Selling Securityholders.”

We are acting as counsel for the Company in connection with the registration of the Shares. As such counsel, we have made such legal and factual examinations and inquiries as we have deemed necessary or advisable for the purpose of rendering the opinions and statements set forth below. In rendering the opinions and statements expressed below, we have examined originals or copies, certified or otherwise identified to our satisfaction, of such documents, corporate records, certificates of public officials and other instruments as we have deemed necessary for the purposes of rendering this opinion.

In addition, we have reviewed originals or copies of such corporate records of the Company, certificates of public officials, a certificate of an officer of the Company as to factual matters and such other documents which we consider necessary or advisable for the purpose of rendering the opinions set forth below. We have not independently established the facts stated therein.

In our examination, we have assumed the genuineness of all signatures, the authenticity and completeness of all documents submitted to us as originals, the conformity with the originals of all documents submitted to us as copies, the authenticity of the originals of such documents and the legal competence of all signatories to such documents. We have also assumed the authority of such persons signing on behalf of the parties thereto other than the Company and the due authorization, execution and delivery of all documents by the parties thereto other than the Company. We have also assumed the conformity of the documents filed with the Commission via the Electronic Data Gathering, Analysis and Retrieval System (“EDGAR”), except for required EDGAR formatting changes, to physical copies submitted for our examination and the absence of any evidence extrinsic to the provisions of the written agreements between the parties that the parties intended a meaning contrary to that expressed by those provisions. We express no opinion as to any matter relating to the laws of any jurisdiction other than the federal laws of the United States of America and the General Corporation Law of the State of Delaware.

Based upon and subject to the foregoing qualifications, assumptions and limitations and the further limitations set forth below, we are of the opinion that:

1. The Outstanding Shares have been duly authorized and are validly issued, fully paid and nonassessable; and
2. The Warrant Shares have been duly authorized and, when issued in accordance with the terms of the Warrants, will be validly issued, fully paid and nonassessable.

We consent to the use of this opinion as an exhibit to the Registration Statement, and we consent to the reference of our name under the caption "Legal Matters" in the prospectus forming part of the Registration Statement.

This opinion is furnished to you in connection with the filing of the Registration Statement, and is not to be used, circulated, quoted or otherwise relied upon for any other purpose.

Very truly yours,

/s/ Wilson Sonsini Goodrich & Rosati

WILSON SONSINI GOODRICH & ROSATI  
Professional Corporation

**Consent of Independent Registered Public Accounting Firm**

We consent to the reference to our firm under the caption "Experts" in the Registration Statement (Form S-3) and related Prospectus of LENZ Therapeutics, Inc. for the registration of 13,070,093 shares its common stock and to the incorporation by reference therein of our report dated March 19, 2025, with respect to the consolidated financial statements of LENZ Therapeutics, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2024, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

San Diego, California  
April 4, 2025