

## Lightwave Logic, Inc.

### Up to \$33,902,076 of Shares of Common Stock

This prospectus supplement relates to the issuance and sale of up to \$33,902,076 in shares of our common stock, to Lincoln Park Capital Fund, LLC, or Lincoln Park, from time to time, in one or more transactions in amounts, at prices, and on terms that will be determined at the time these securities are offered pursuant to the purchase agreement dated as of October 4, 2021 or the Purchase Agreement, that we have entered into with Lincoln Park, whereby Lincoln Park has committed to purchase up to \$33,000,000 of our common stock, and we have agreed to issue to Lincoln Park 90,935 shares of common stock as commitment shares.

See “Lincoln Park Transaction” for a description of the Purchase Agreement. Lincoln Park is an “underwriter” within the meaning of Section 2(a)(11) of the Securities Act of 1933, as amended, or the Securities Act.

Our common stock is currently listed on the Nasdaq Capital Market under the symbol “LWLG”. On October 1, 2021, the last reported sale price of our common stock was \$9.92 per share.

We will pay the expenses incurred in registering the shares, including legal and accounting fees. See “Plan of Distribution”.

**Investing in our securities involves a high degree of risk. See the section entitled “Risk Factors” on page S-4 of this prospectus supplement and the section entitled “Risk Factors” beginning on page 3 of the accompanying prospectus, and in the documents we filed with the Securities and Exchange Commission that are incorporated in this prospectus supplement by reference for certain risks and uncertainties you should consider.**

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. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is October 4, 2021.

---

#### TABLE OF CONTENTS

##### PROSPECTUS SUPPLEMENT

<a href="#">ABOUT THIS PROSPECTUS SUPPLEMENT</a>	S-i
<a href="#">CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</a>	S-ii
<a href="#">PROSPECTUS SUPPLEMENT SUMMARY</a>	S-1
<a href="#">RISK FACTORS</a>	S-4
<a href="#">USE OF PROCEEDS</a>	S-6
<a href="#">DILUTION</a>	S-7
<a href="#">LINCOLN PARK TRANSACTION</a>	S-9
<a href="#">PLAN OF DISTRIBUTION</a>	S-14
<a href="#">LEGAL MATTERS</a>	S-15
<a href="#">EXPERTS</a>	S-15
<a href="#">WHERE YOU CAN FIND MORE INFORMATION</a>	S-15
<a href="#">DOCUMENTS INCORPORATED BY REFERENCE</a>	S-15

##### PROSPECTUS

<a href="#">ABOUT THIS PROSPECTUS</a>	ii
<a href="#">PROSPECTUS SUMMARY</a>	1
<a href="#">RISK FACTORS</a>	3
<a href="#">CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</a>	3
<a href="#">USE OF PROCEEDS</a>	4
<a href="#">DESCRIPTION OF OUR CAPITAL STOCK</a>	5
<a href="#">PLAN OF DISTRIBUTION</a>	7
<a href="#">LEGAL MATTERS</a>	9
<a href="#">EXPERTS</a>	9
<a href="#">DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION</a>	9
<a href="#">WHERE YOU CAN FIND MORE INFORMATION</a>	9
<a href="#">DOCUMENTS INCORPORATED BY REFERENCE</a>	10

#### ABOUT THIS PROSPECTUS SUPPLEMENT

We are providing information to you about this offering of our common stock in two separate documents that are bound together: (1) this prospectus supplement, which describes the specific terms of this offering, and (2) the accompanying base prospectus, which provides general information, some of which may not apply to this offering. This prospectus supplement may also add to, update or change information contained in the accompanying base prospectus. If information in this prospectus supplement is inconsistent with the accompanying base prospectus, you should rely on this prospectus supplement. Generally, when we refer to this “prospectus,” we are referring to both documents combined.

This prospectus supplement, the accompanying base prospectus and any free-writing prospectus that we prepare or authorize contain and incorporate by reference information that you should consider when making your investment decision. We have not, and Lincoln Park has not, authorized anyone to provide you with additional or different information. If anyone provides you with different or inconsistent information, you should not rely on it. You should not assume that the information contained in this prospectus supplement or the accompanying base prospectus is accurate as of any date other than the date on the front of those documents or that any information we have incorporated by

reference is accurate as of any date other than the date of the document incorporated by reference. Our business, financial condition, results of operations and prospects may have changed since those dates.

This prospectus supplement is part of a registration statement that we filed with the Securities and Exchange Commission (the “SEC”), using a “shelf” registration process. Under the shelf registration process, we may from time to time offer and sell any combination of the securities described in the accompanying prospectus up to a total dollar amount of \$100,000,000 of which this offering is a part.

We are not, and Lincoln Park is not, making an offer or sale of our common stock in any jurisdiction where such offer or sale is not permitted.

The information in this prospectus supplement is not complete. You should carefully read this prospectus supplement and the accompanying base prospectus, including the information incorporated by reference herein and therein, before you invest, as these documents contain information you should consider when making your investment decision.

None of Lightwave Logic, Inc., Lincoln Park or any of their representatives are making any representation to you regarding the legality of an investment in our common stock by you under applicable laws. You should consult with your own advisors as to legal, tax, business, financial and related aspects of an investment in our common stock.

---

S-ii

### CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement contains forward-looking statements. Forward-looking statements involve risks and uncertainties, such as statements about our plans, objectives, expectations, assumptions or future events. In some cases, you can identify forward-looking statements by terminology such as “anticipate,” “estimate,” “plan,” “project,” “continuing,” “ongoing,” “expect,” “we believe,” “we intend,” “may,” “should,” “will,” “could” and similar expressions denoting uncertainty or an action that may, will or is expected to occur in the future. These statements involve estimates, assumptions, known and unknown risks, uncertainties and other factors that could cause actual results to differ materially from any future results, performances or achievements expressed or implied by the forward-looking statements. You should not place undue reliance on these forward-looking statements.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations, and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not rely on any of these forward-looking statements.

Factors that are known to us that could cause a different result than projected by the forward-looking statement, include, but are not limited to:

- inability to generate revenue or to manage growth;
- lack of available funding;
- lack of a market for or market acceptance of our products;
- competition from third parties;
- general economic and business conditions;
- intellectual property rights of third parties;
- changes in the price of our stock and dilution;
- regulatory constraints and potential legal liability;
- ability to maintain effective internal controls;
- security breaches, cybersecurity attacks and other significant disruptions in our information technology systems;
- changes in technology and methods of marketing;
- delays in completing various engineering and manufacturing programs;
- changes in customer order patterns and qualification of new customers;
- changes in product mix;
- success in technological advances and delivering technological innovations;
- shortages in components;
- production delays due to performance quality issues with outsourced components;
- the novel coronavirus (“COVID-19”) and its potential impact on our business;

---

S-iii

- those events and factors described by us in “Risk Factors” in “Part I, Item 1A” of our Annual Report on Form 10-K for the fiscal year ended December 31, 2020;
- other risks to which our Company is subject; and
- other factors beyond the Company’s control.

The ultimate correctness of these forward-looking statements depends upon a number of known and unknown risks and events. We discuss our known material risks under Item 1.A “Risk Factors” contained in our Company’s Annual Report on Form 10-K for the year ended December 31, 2020. Many factors could cause our actual results to differ materially from the forward-looking statements. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

Any forward-looking statement made by us in this prospectus is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether written or oral, that may be made from time to time, whether as a result of new information, future developments or otherwise.

---

S-iv

### PROSPECTUS SUPPLEMENT SUMMARY

*This summary highlights information contained elsewhere in this prospectus supplement and the accompanying base prospectus. It does not contain all of the information that you should consider before making an investment decision. You should read this entire prospectus supplement, the accompanying base prospectus and the documents incorporated herein by reference for a more complete understanding of this offering of common stock. Please read “Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2020 for information regarding risks you should consider before investing in our common stock.*

*Throughout this prospectus supplement, when we use the terms “Lightwave,” “we,” “us,” “our” or the “Company,” we are referring either to Lightwave Logic, Inc. in its individual capacity or to Lightwave Logic, Inc. and its operating subsidiaries collectively, as the context requires.*

## Overview

We are a development stage company moving toward commercialization of next generation electro-optic photonic devices made on its P<sup>2</sup>IC<sup>TM</sup> technology platform, which uses in-house proprietary high-activity and high-stability organic polymers. Electro-optical devices convert data from electric signals into optical signals for multiple applications.

Our differentiation at the device level is in higher speed, lower power consumption, simplicity of manufacturing and reliability. We have demonstrated higher speed and lower power consumption in packaged devices, and during 2019, we developed new materials that promise to further lower power consumption. We are currently focused on testing and demonstrating the simplicity of manufacturability and reliability of our devices, including in conjunction with the silicon photonics manufacturing ecosystem.

We are initially targeting applications in data communications and telecommunications markets and are exploring other applications for our polymer technology platform.

## Materials Development

Our Company designs and synthesizes organic chromophores for use in its own proprietary electro-optic *polymer systems* and photonic device designs. A polymer system is not solely a material, but also encompasses various technical enhancements necessary for its implementation. These include host polymers, poling methodologies, and molecular spacer systems that are customized to achieve specific optical properties. Our organic electro-optic polymer systems compounds are mixed into solution form that allows for thin film application. Our proprietary electro-optic polymers are designed at the molecular level for potentially superior performance, stability and cost-efficiency. We believe they have the potential to replace more expensive, higher power consuming, slower-performance materials and devices used in fiber-optic communication networks.

Our patented and patent pending molecular architectures are based on a well-understood chemical and quantum mechanical occurrence known as *aromaticity*. Aromaticity provides a high degree of molecular stability that enables our core molecular structures to maintain stability under a broad range of operating conditions.

We expect our patented and patent-pending optical materials along with trade secrets and licensed materials, to be the core of and the enabling technology for future generations of optical devices, modules, sub-systems and systems that we will develop or potentially out-license to electro-optic device manufacturers. Our Company contemplates future applications that may address the needs of semiconductor companies, optical network companies, Web 2.0 media companies, high performance computing companies, telecommunications companies, aerospace companies, and government agencies.

S-1

---

## Device Design and Development

### *Electro-optic Modulators*

Our Company designs its own proprietary electro-optical modulation devices. Electro-optical modulators convert data from electric signals into optical signals that can then be transmitted over high-speed fiber-optic cables. Our modulators are electro-optic, meaning they work because the optical properties of the polymers are affected by electric fields applied by means of electrodes. Modulators are key components that are used in fiber optic telecommunications, data communications, and data centers networks etc., to convey the high data flows that have been driven by applications such as pictures, video streaming, movies etc., that are being transmitted through the Internet. Electro-optical modulators are expected to continue to be an essential element as the appetite and hunger for data increases every year.

### *Polymer Photonic Integrated Circuits (P<sup>2</sup>IC<sup>TM</sup>)*

Our Company also designs its own proprietary polymer photonic integrated circuits (otherwise termed a polymer PIC). A polymer PIC is a photonic device that integrates several photonic functions on a single chip. We believe that our technology can enable the ultra-miniaturization needed to increase the number of photonic functions residing on a semiconductor chip to create a progression like what was seen in the computer integrated circuits, commonly referred to as Moore's Law. One type of integration is to combine several instances of the same photonic functions such as a plurality of modulators to create a 4 channel polymer PIC. In this case, the number of photonic components would increase by a factor of 4. Another type is to combine different types of devices including from different technology bases such as the combination of a semiconductor laser with a polymer modulator. Our P<sup>2</sup>IC<sup>TM</sup> platform encompasses both these types of architecture.

Current photonic technology today is struggling to reach faster device speeds. Our modulator devices, enabled by our electro-optic polymer material systems, work at extremely high frequencies (wide bandwidths) and possess inherent advantages over current crystalline electro-optic material contained in most modulator devices such as lithium niobate (LiNbO<sub>3</sub>), indium phosphide (InP), silicon (Si), and gallium arsenide (GaAs). Our advanced electro-optic polymer platform is creating a new class of modulators such as the Polymer Stack<sup>TM</sup> and associated PIC platforms that can address higher data rates in a lower cost, lower power consuming manner, with much simpler modulation techniques.

Our electro-optic polymers can be integrated with other materials platforms because they can be applied as a thin film coating in a fabrication clean room such as may be found in semiconductor foundries. This approach we call Polymer Plus<sup>TM</sup>. Our polymers are unique in that they are stable enough to seamlessly integrate into existing CMOS, Indium Phosphide (InP), Gallium Arsenide (GaAs), and other semiconductor manufacturing lines. Of particular relevance are the integrated silicon photonics platforms that combine optical and electronic functions. These include a miniaturized modulator for ultra-small footprint applications, which we term the Polymer Slot<sup>TM</sup>. This design is based on a slot modulator fabricated into semiconductor wafers that include both silicon and indium phosphide.

## Our Company

We were incorporated under the laws of the State of Nevada on June 24, 1997. In 2004, we acquired PSI-TEC Corp., and in 2006 we merged with PSI-TEC Corp. PSI-TEC Corp. was incorporated under the laws of the State of Delaware on September 12, 1995. In 2008, we changed our name to Lightwave Logic, Inc. Unless the context otherwise requires, all references to the “Company,” “we,” “our” or “us” and other similar terms means Lightwave Logic, Inc., a Nevada corporation. Our trademarks in the United States include P<sup>2</sup>IC<sup>TM</sup> and Perkinamine<sup>TM</sup>. All other trademarks, service marks and trade names included or incorporated by reference in this prospectus are the property of their respective owners.

Our principal executive office is located at 369 Inveness Parkway, Suite 350, Englewood, CO 80112, and our telephone number is (720) 340-4949. Our website address is [www.lightwavelogic.com](http://www.lightwavelogic.com). No information found on our website is part of this prospectus.

## Recent Developments

## THE OFFERING

<b>Issuer:</b>	Lightwave Logic, Inc.
<b>Common stock offered by us:</b>	<p>Up to \$33,000,000 of shares of common stock that we may sell to Lincoln Park, from time to time at our sole discretion over the next 36 months in accordance with the Purchase Agreement;</p> <p>30,312 initial commitment shares valued at \$300,695 based on \$9.92 per share, the closing price of our common stock on The Nasdaq Capital Market on October 1, 2021, which are being issued for no cash consideration as a fee for Lincoln Park’s execution of the Purchase Agreement; and up to 60,623 additional commitment shares, valued at \$601,380 (based on \$9.92, the average closing price of our common stock on The Nasdaq Capital Market on October 1, 2021) which is the amount of additional shares we may issue for no cash consideration to Lincoln Park from time to time pro-rata in connection with the purchase of \$33,000,000 of shares of our common stock under the Purchase Agreement.</p> <p>We will not receive any cash proceeds from the issuance of the Commitment Shares. On the commencement date of the Purchase Agreement, which will be as of the filing date of this prospectus supplement, we will sell Lincoln Park 327,511 shares of common stock for aggregate consideration of \$3,000,000.</p>
<b>Common stock to be outstanding following the offering</b>	Up to 111,534,145 shares, assuming (i) the sale of 3,326,613 shares (which would be the full amount offered under this prospectus supplement at a price of \$9.92 per share, which was the closing price of our common stock on Nasdaq on October 1, 2021, (ii) the issuance of 60,623 additional commitment shares to be issued pro rata to Lincoln Park in connection with the sale of shares pursuant to the Purchase Agreement, and (iii) 30,312 initial commitment shares of our common stock being issued to Lincoln Park on the date hereof for no cash consideration as a fee for Lincoln Park’s execution of the Purchase Agreement. The actual number of shares issued will vary depending on the sales prices in this offering.
<b>Use of Proceeds:</b>	We intend to use the net proceeds from this offering for general corporate purposes, which may include, among other things, working capital, capital expenditures and funding additional clinical and preclinical development of our pipeline candidates. See “Use of Proceeds” on page S-6 of this prospectus supplement.
<b>Risk Factors:</b>	Investing in our common stock involves a high degree of risk. Please read the information contained in and incorporated by reference under the heading “Risk Factors” beginning on page S-4 of this prospectus supplement and the other information included in, or incorporated by reference into, this prospectus supplement for a discussion of certain factors you should carefully consider before deciding to invest in our common stock.
<b>Nasdaq Capital Market symbol:</b>	“LWLG”.

Unless otherwise indicated, the number of shares of common stock to be outstanding after this offering is based on 108,116,597 shares of common stock outstanding as of October 1, 2021. The number of shares of common stock outstanding after this offering excludes:

- 7,574,248 shares of our common stock issuable upon the exercise of stock options outstanding as of October 1, 2021, at a weighted average exercise price of \$0.96808 per share, of which stock options to purchase 6,928,187 shares of common stock were then exercisable;
- 3,245,750 shares of our common stock reserved for future grants of stock options (or other similar equity instruments) under our equity incentive plans as of October 1, 2021; and
- 1,438,000 shares of our common stock reserved for issuance upon exercise of outstanding warrants outstanding as of October 1, 2021, at a weighted average exercise price of \$0.80 per share.

## RISK FACTORS

*An investment in our common stock involves a significant degree of risk. Before you invest in our common stock you should carefully consider those risk factors set forth under the heading “Risk Factors” in Item 1A. of our most recent Annual Report on Form 10-K for the fiscal year ended December 30, 2020, and in Part II, Item 1A. of our most recent Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2021, each of which are on file with the SEC and are incorporated by reference in this prospectus., and those risk factors that may be included in any applicable prospectus supplement, together with all of the other information included in this prospectus supplement, the accompanying base prospectus and the documents we incorporate by reference, in evaluating an investment in our common stock. If any of the risks discussed in the foregoing documents were to occur, our business, financial condition, results of operations and cash flows could be materially adversely affected. Please read “Cautionary Statement Regarding Forward-Looking Statements.”*

### Risks Relating to the Purchase Agreement

***The sale or issuance of our common stock to Lincoln Park may cause dilution and the sale of the shares of common stock acquired by Lincoln Park, or the perception that such sales may occur, could cause the price of our common stock to fall.***

On October 4, 2021, we entered into the Purchase Agreement with Lincoln Park, pursuant to which Lincoln Park has committed to purchase up to \$33,000,000 of our common stock, and we may issue up to 60,623 Additional Commitment Shares pro-rata in connection with the purchase of shares of our common stock under the Purchase Agreement. Upon the execution of the Purchase Agreement, we are issuing 30,312 shares of common stock to Lincoln Park for no cash consideration as an initial fee for its commitment to purchase shares of our common stock under the Purchase Agreement. The remaining shares of our common stock that may be issued under the Purchase Agreement may be sold by us to Lincoln Park at our discretion from time to time over a 36-month period commencing after the satisfaction of certain conditions set forth in the Purchase Agreement. The purchase price for the shares that we may sell to Lincoln Park under the Purchase Agreement will fluctuate based on the price of our common stock. Depending on market liquidity at the time, sales of such shares may cause the trading price of our common stock to fall.

We have the right to control the timing and amount of any sales of our shares to Lincoln Park in our sole discretion, subject to certain limits on the amount of shares that

can be sold on a given date. Sales of shares of our common stock, if any, to Lincoln Park will depend upon market conditions and other factors to be determined by us. Therefore, Lincoln Park may ultimately purchase all, some or none of the shares of our common stock that may be sold pursuant to the Purchase Agreement and, after it has acquired shares, Lincoln Park may sell all, some or none of those shares. Sales to Lincoln Park by us could result in substantial dilution to the interests of other holders of our common stock. Additionally, the sale of a substantial number of shares of our common stock to Lincoln Park, or the anticipation of such sales, could make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect sales, which could have a materially adverse effect on our business and operations.

***You may experience future dilution as a result of future equity offerings or the exercise of stock options.***

To raise additional capital, we may in the future offer additional shares of our common stock at prices that may not be the same as the price per share in this offering. The price per share at which we sell additional shares of our common stock in future transactions may be higher or lower than the price per share paid by investors in this offering. To the extent that outstanding stock options may be exercised, or other shares issued, you may experience further dilution.

---

S-4

***We may require additional financing to sustain our operations, without which we may not be able to continue operations, and the terms of subsequent financings may adversely impact our stockholders.***

We may direct Lincoln Park to purchase up to \$33,000,000 worth of shares of our common stock under our agreement over a 36-month period, in amounts up to 250,000 shares of our common stock, and such number of shares may be increased upon the mutual agreement of Lincoln Park and the Company and, in each case, subject to a maximum limit of \$3,000,000 per purchase, on any single business day provided that the last closing sale price per-share of our common stock is not less than \$0.10 as reported by the Nasdaq Capital Market (such share amounts being subject to adjustment for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction as provided in the Purchase Agreement).

Our ability to sell shares to Lincoln Park and obtain funds under the Purchase Agreement is limited by the terms and conditions in the Purchase Agreement, including restrictions on the amounts we may sell to Lincoln Park at any one time, and a limitation on our ability to sell shares to Lincoln Park to the extent that it would cause Lincoln Park to beneficially own more than 9.99% of our outstanding shares of common stock. Additionally, we will only be able to sell or issue to Lincoln Park 21,612,508 shares in total under the Purchase Agreement, which is equal to 19.99% of the shares of common stock outstanding on the date of the Purchase Agreement, unless we obtain shareholder approval or the average price of such sales exceeds the price of our common stock on October 4, 2021 as determined under Nasdaq rules. Therefore, we may not in the future have access to the full amount available to us under the Purchase Agreement, depending on the price of our common stock. In addition, any amounts we sell under the Purchase Agreement may not satisfy all of our funding needs, even if we are able and choose to sell and issue all of our common stock currently registered.

The extent we rely on Lincoln Park as a source of funding will depend on a number of factors including the prevailing market price of our common stock and the extent to which we are able to secure working capital from other sources. If obtaining sufficient funding from Lincoln Park were to prove unavailable or prohibitively dilutive, we will need to secure another source of funding in order to satisfy our working capital needs. Even if we sell all \$33,000,000 of common stock under the Purchase Agreement to Lincoln Park, we may still need additional capital to finance our future plans and working capital needs, and we may have to raise funds through the issuance of equity or debt securities. Depending on the type and the terms of any financing we pursue, stockholders' rights and the value of their investment in our common stock could be reduced. A financing could involve one or more types of securities including common stock, convertible debt or warrants to acquire common stock. These securities could be issued at or below the then prevailing market price for our common stock. In addition, the holders of our outstanding debt would have a claim to our assets that would be prior to the rights of stockholders until the debt is paid. Interest on our outstanding debt would increase costs and negatively impact operating results. If the issuance of new securities results in diminished rights to holders of our common stock, the market price of our common stock could be negatively impacted. Should the financing we require to sustain our working capital needs be unavailable or prohibitively expensive when we require it, the consequences could be a material adverse effect on our business, operating results, financial condition and prospects.

***Our management might apply the net proceeds from this offering in ways with which you do not agree and in ways that may impair the value of your investment.***

We currently intend to use the net proceeds from this offering primarily for working capital and general corporate purposes. Our management has broad discretion as to the use of such proceeds and you will be relying on the judgment of our management regarding the application of these proceeds. Our management might apply these proceeds in ways with which you do not agree, or in ways that ultimately do not yield a favorable return. If our management applies such proceeds in a manner that does not yield a significant return, if any, on our investment of such net proceeds, it could compromise our ability to pursue our growth strategy and adversely affect the market price of our common stock.

---

S-5

#### USE OF PROCEEDS

We may receive up to \$33,000,000 in aggregate gross proceeds under the Purchase Agreement from any sales we make to Lincoln Park pursuant to the Purchase Agreement after the date of this prospectus supplement. We may sell fewer than all of the shares offered by this prospectus supplement, in which case our offering proceeds will be less. Because we are not obligated to sell any shares of our common stock under the Purchase Agreement, the actual total offering amount and proceeds to us, if any, are not determinable at this time. See "Plan of Distribution" elsewhere in this prospectus supplement for more information.

We intend to use the net proceeds from this offering for working capital and other general corporate purposes.

---

S-6

#### DILUTION

The sale of our common stock to Lincoln Park pursuant to the Purchase Agreement will have a dilutive impact on our stockholders. In addition, the lower our stock price is at the time we exercise our right to sell shares to Lincoln Park, the more shares of our common stock we will have to issue to Lincoln Park pursuant to the Purchase Agreement and our existing stockholders would experience greater dilution. We calculate net tangible book value per share by dividing the net tangible book value, which is tangible assets less total liabilities, by the number of outstanding shares of common stock. Dilution represents the difference between the portion of the amount per share paid by purchasers of shares in this offering and the as adjusted net tangible book value per share of our common stock immediately after giving effect to this offering. Our net tangible book value as of June 30, 2021 was approximately \$16,066,539, or \$0.15 per share.

After giving effect to the sale of common stock pursuant to this prospectus supplement and accompanying prospectus in the aggregate amount of \$33,000,000 at an assumed offering price of \$9.92 per share, the last reported sale price of our common stock on the Nasdaq Capital Market on October 1, 2021, and after deducting estimated aggregate offering expenses payable by us, our net tangible book value as of June 30, 2021 would have been \$49,036,539, or \$0.44 per share of common stock. This represents an immediate increase in the net tangible book value of \$0.29 per share to our existing stockholders and an immediate dilution in net tangible book value of \$9.48 per share to new investors. The following table illustrates this per share dilution:

Assumed public offering price per share		\$	9.92
Net tangible book value per share as of June 30, 2021		\$	0.15
Increase per share attributable to new investors		\$	0.29
As adjusted net tangible book value per share as of June 30, 2021 after giving effect to this offering		\$	0.44
Dilution per share to new investors purchasing shares in this offering		\$	9.48

The table above assumes for illustrative purposes that an aggregate of 3,326,613 shares of our common stock are sold pursuant to this prospectus supplement and the accompanying prospectus at a price of \$9.92 per share, the last reported sale price of our common stock on the Nasdaq Capital Market on October 1, 2021, for aggregate gross proceeds of \$33,000,000. The shares sold in this offering, if any, will be sold from time to time at various prices. An increase of \$1.00 per share in the price at which the shares are sold from the assumed offering price of \$9.92 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$33,000,000 is sold at that price, would result in an adjusted net tangible book value per share after the offering of \$0.44 per share and would increase the dilution in net tangible book value per share to new investors in this offering to \$9.48 per share, after deducting estimated aggregate offering expenses payable by us. A decrease of \$1.00 per share in the price at which the shares are sold from the assumed offering price of \$9.92 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$33,000,000 is sold at that price, would result in an adjusted net tangible book value per share after the offering of \$0.44 per share and would decrease the dilution in net tangible book value per share to new investors in this offering to \$9.48 per share, after deducting estimated aggregate offering expenses payable by us. The as adjusted information is illustrative only, and we will adjust this information based on the actual public offering price and other terms of this offering determined at pricing.

S-7

The above table and discussion are based on 107,335,110 shares of common stock outstanding as of June 30, 2021 and exclude the following, all as of June 30, 2021:

- 8,215,623 shares of common stock issuable upon the exercise of outstanding stock options, vested and unvested, with a weighted-average exercise price of \$0.923 per share; and
- 1,615,000 shares of common stock issuable upon the exercise of outstanding warrants with a weighted-average exercise price of \$0.78 per share.

To the extent that options or warrants outstanding as of June 30, 2021 have been or are exercised, or other shares are issued, investors purchasing shares in this offering could experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity, the issuance of these securities could result in further dilution to our stockholders.

S-8

## LINCOLN PARK TRANSACTION

On October 4, 2021, we entered into the Purchase Agreement with Lincoln Park. In connection with the Purchase Agreement, on October 4, 2021, we also entered into a registration rights agreement, or the Registration Rights Agreement, with Lincoln Park, pursuant to which we agreed to take specified actions to maintain the registration of the shares of our common stock subject to the offering described in this prospectus supplement and accompanying prospectus. Pursuant to the terms of the Purchase Agreement, Lincoln Park has agreed to purchase from us up to \$33,000,000 of our common stock (subject to certain limitations) from time to time during the term of the Purchase Agreement. Pursuant to the terms of the Purchase Agreement and Registration Rights Agreement, we have filed with the SEC this prospectus supplement regarding the sale under the Securities Act of the shares issuable to Lincoln Park under the Purchase Agreement. Pursuant to the terms of the Purchase Agreement, on the date of this prospectus, we issued 30,312 shares of our common stock to Lincoln Park as Initial Commitment Shares under the Purchase Agreement. We are obligated to issue up to 60,623 shares of common stock as Additional Commitment Shares pro-rata in connection with the sale of shares to Lincoln Park under the Purchase Agreement. On the commencement date of the Purchase Agreement, which will be as of the filing date of this prospectus supplement, we sold to Lincoln Park 327,511 shares of common stock for aggregate consideration of \$3,000,000.

We may, from time to time and at our sole discretion, direct Lincoln Park to purchase shares of our common stock upon the satisfaction of certain conditions set forth in the Purchase Agreement at a purchase price per share based on the market price of our common stock at the time of sale as discussed below. Lincoln Park may not assign or transfer its rights and obligations under the Purchase Agreement.

Under applicable rules of the Nasdaq Capital Market, in no event may we issue or sell to Lincoln Park under the Purchase Agreement shares of our common stock in excess of 21,612,508 shares (including the Commitment Shares), which represents 19.99% of the shares of our common stock outstanding immediately prior to the execution of the Purchase Agreement, or the Exchange Cap, unless (i) we obtain stockholder approval to issue shares of our common stock in excess of the Exchange Cap or (ii) to the extent we desire to issue shares in excess of the Exchange Cap, the average price of all such sales of our common stock to Lincoln Park must equal or exceed \$9.92 per share (which represents the lower of (A) the official closing price of our common stock on Nasdaq on the trading day immediately preceding the date of the Purchase Agreement and (B) the average official closing price of our common stock on Nasdaq for the five consecutive trading days ending on the trading day immediately preceding the date of the Purchase Agreement) adjusted such that the transactions contemplated by the Purchase Agreement are exempt from the Exchange Cap limitation under applicable Nasdaq rules. In any event, the Purchase Agreement specifically provides that we may not issue or sell any shares of our common stock under the Purchase Agreement if such issuance or sale would breach any applicable rules or regulations of the Nasdaq Capital Market.

The Purchase Agreement also prohibits us from directing Lincoln Park to purchase any shares of our common stock if those shares, when aggregated with all other shares of our common stock then beneficially owned by Lincoln Park, would result in Lincoln Park and its affiliates exceeding a cap equal to 9.99%, or the Beneficial Ownership Cap, of our then issued and outstanding shares of common stock.

### Purchase of Shares Under the Purchase Agreement

#### *Regular Purchases*

Under the Purchase Agreement, provided that the closing sale price of our common stock is not below \$0.10 per share on any business day selected by us, we may, from time to time until October 4, 2024 direct Lincoln Park to purchase up to 250,000 shares of our common stock on such business day (or the purchase date), which we refer to as a Regular Purchase, provided, however, that Lincoln Park's committed obligations under each Regular Purchase cannot exceed \$3,000,000. In each case, upon the parties' mutual agreement, the maximum amount of any single Regular Purchase may be increased in excess of the Regular Purchase share limits discussed in the preceding sentence and in effect on any given day. We may direct Lincoln Park to purchase shares in Regular Purchases multiple times every business day, provided that we have not failed to deliver shares for the most recent prior Regular Purchase. The foregoing share amounts and per share prices will be adjusted for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction occurring after the date of the Purchase Agreement.

S-9

The purchase price per share for each such Regular Purchase will be equal to the lesser of:

- the lowest sale price for our common stock on the purchase date of such shares; or
- the arithmetic average of the three lowest closing sale prices for our common stock during the 10 consecutive business days ending on the business day immediately preceding the purchase date of such shares.

#### *Accelerated Purchases*

We also have the right to direct Lincoln Park, on any business day on which we have properly submitted a Regular Purchase notice for the maximum amount allowed for such Regular Purchase to purchase an additional amount of our common stock, which we refer to as an Accelerated Purchase, of up to the lesser of:

- 300% of the number of shares to be purchased pursuant to such Regular Purchase; and
- 30% of the aggregate shares of our common stock traded on Nasdaq during all or, if certain trading volume or market price thresholds specified in the Purchase Agreement are crossed on the applicable Accelerated Purchase date, the portion of the normal trading hours on the applicable Accelerated Purchase date prior to such time that any one of such thresholds is crossed, which period of time on the applicable Accelerated Purchase date we refer to as the “Accelerated Purchase Measurement Period”.

The purchase price per share for each such Accelerated Purchase will be equal to 96.5% of the lesser of:

- the volume-weighted average price of our common stock on Nasdaq during the applicable Accelerated Purchase Measurement Period on the applicable Accelerated Purchase date; and
- the closing sale price of our common stock on the applicable Accelerated Purchase date.

The parties may mutually agree to increase the number of shares to be purchased by Lincoln Park pursuant to any Accelerated Purchase.

#### *Additional Accelerated Purchases*

We also have the right to direct Lincoln Park on any business day on which an Accelerated Purchase has been completed and all of the shares to be purchased thereunder have been properly delivered to Lincoln Park in accordance with the Purchase Agreement to purchase an additional amount of our common stock, which we refer to as an Additional Accelerated Purchase, of up to the lesser of:

- 300% of the number of shares to be purchased pursuant to such Regular Purchase; and
- 30% of the aggregate shares of our common stock traded on Nasdaq during all or, if certain trading volume or market price thresholds specified in the Purchase Agreement are crossed on the applicable Accelerated Purchase date, the portion of the normal trading hours on the applicable Accelerated Purchase date prior to such time that any one of such thresholds is crossed, which period of time on the applicable Accelerated Purchase date we refer to as the “Accelerated Purchase Measurement Period”.

We may, in our sole discretion, submit multiple Additional Accelerated Purchase notices to Lincoln Park on a single Accelerated Purchase date, provided that all prior Accelerated Purchases and Additional Accelerated Purchases (including those that have occurred earlier on the same day) have been completed and all of the shares to be purchased thereunder have been properly delivered to Lincoln Park in accordance with the Purchase Agreement.

S-10

The purchase price per share for each such Additional Accelerated Purchase will be equal to 96.5% of the lower of:

- the volume-weighted average price of our common stock on Nasdaq during the applicable Accelerated Purchase Measurement Period on the applicable Accelerated Purchase date; and
- the closing sale price of our common stock on the applicable Accelerated Purchase date.

In the case of Regular Purchases, Accelerated Purchases and Additional Accelerated Purchases, the purchase price per share will be adjusted for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction as set forth in the Purchase Agreement. Other than as set forth above, there are no trading volume requirements or restrictions under the Purchase Agreement, and we will control the timing and amount of any sales of our common stock to Lincoln Park.

In the case of Regular Purchases, Accelerated Purchases and Additional Accelerated Purchases, the purchase price per share will be equitably adjusted for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction occurring during the business days used to compute the purchase price.

Other than as described above, there are no trading volume requirements or restrictions under the Purchase Agreement, and we will control the timing and amount of any sales of our common stock to Lincoln Park.

#### **Events of Default**

Events of default under the Purchase Agreement include the following:

- the effectiveness of the registration statement of which this prospectus supplement and accompanying prospectus form a part lapses for any reason (including, without limitation, the issuance of a stop order by the SEC), or any required prospectus supplement and accompanying prospectus are unavailable for the resale by Lincoln Park of our common stock offered hereby, and such lapse or unavailability continues for a period of 10 consecutive business days or for more than an aggregate of 60 business days in any 365-day period, but excluding a lapse or unavailability where (i) we terminate a registration statement after Lincoln Park has confirmed in writing that all of the shares of our common stock covered thereby have been resold or (ii) we supersede one registration statement with another registration statement, including (without limitation) by terminating a prior registration statement when it is effectively replaced with a new registration statement covering the shares of our common stock covered by the Purchase Agreement (provided in the case of this clause (ii) that all of the shares of our common stock covered by the superseded (or terminated) registration statement that have not theretofore been resold are included in the superseding (or new) registration statement);
- suspension by the principal market listing our common stock from trading for a period of one business day;
- the delisting of our common stock from the Nasdaq Capital Market; provided, however, that the common stock is not immediately thereafter trading on the New York Stock Exchange, the Nasdaq Global Market, the Nasdaq Global Select Market, the NYSE American, the NYSE Arca or the OTC Bulletin Board, OTCQX or OTCQB operated by the OTC Markets Group, Inc. (or nationally recognized successor to any of the foregoing);
- the failure for any reason by our transfer agent to issue shares to Lincoln Park within two business days after any purchase date, Accelerated Purchase date or Additional Accelerated Purchase date, as applicable, on which Lincoln Park is entitled to receive such shares;
- any breach of the representations, warranties, covenants or other terms or conditions contained in the Purchase Agreement or Registration Rights Agreement that has or could have a Material Adverse Effect (as defined in the Purchase Agreement) and, in the case of a breach of a covenant that is reasonably curable, that is not cured within a period of at least five business days;

- our common stock ceases to be DTC authorized and ceases to participate in the DWAC/FAST systems or if we fail to maintain the service of our transfer agent (or a successor transfer agent) with respect to the issuance of Purchase Shares under the Purchase Agreement;
- if at any time the Exchange Cap is reached and our stockholders have not approved the transactions contemplated by the Purchase Agreement in accordance with the applicable rules and regulations of the Nasdaq Global Market, to the extent applicable; or
- any voluntary or involuntary participation or threatened participation in insolvency or bankruptcy proceedings by or against us.

Lincoln Park does not have the right to terminate the Purchase Agreement upon any of the events of default set forth above, however, the Purchase Agreement will automatically terminate upon initiation of insolvency or bankruptcy proceedings by or against us. During an event of default, all of which are outside of Lincoln Park's control, we are not permitted to direct Lincoln Park to purchase any shares of our common stock under the Purchase Agreement.

#### Our Termination Rights

We have the unconditional right, at any time, for any reason and without any payment or liability to us, to give notice to Lincoln Park to terminate the Purchase Agreement.

#### No Short-Selling or Hedging by Lincoln Park

Lincoln Park has agreed that neither it nor any of its affiliates shall engage in any direct or indirect short-selling or hedging of our common stock during any time prior to the termination of the Purchase Agreement.

#### Prohibitions on Variable Rate Transactions

Subject to specified exceptions included in the Purchase Agreement, we are limited in our ability to enter into specified variable rate transactions until the thirty-six-month anniversary of the date of the Purchase Agreement. Such transactions include, among others, the issuance of convertible securities with a conversion or exercise price that is based upon or varies with the trading price of our common stock after the date of issuance, the issuance of securities with embedded anti-dilution provisions, the issuance of securities with an embedded put or call right or at a price subject to being reset after the initial issuance contingent on our business or market performance or entry into any new "equity line of credit." However, we are permitted to enter into certain "at-the-market offerings" exclusively through a registered broker-dealer acting as agent of the Company pursuant to a written agreement between the Company and such registered broker-dealer.

#### Effect of Performance of the Purchase Agreement on our Stockholders

All shares registered in this offering that have been or may be issued or sold by us to Lincoln Park under the Purchase Agreement are expected to be freely tradable. Shares registered in this offering may be sold over a period of up to approximately 36 months commencing on the date of this prospectus supplement. The sale by Lincoln Park of a significant number of shares registered in this offering at any given time could cause the market price of our common stock to decline and to be highly volatile. Sales of our common stock to Lincoln Park, if any, will depend upon market conditions and other factors to be determined by us, in our sole discretion. We may ultimately decide to sell to Lincoln Park all, some or none of the additional shares of our common stock that may be available for us to sell pursuant to the Purchase Agreement. If and when we do sell shares to Lincoln Park, after Lincoln Park has acquired the shares, Lincoln Park may resell all, some or none of those shares at any time or from time to time in its discretion. Therefore, sales to Lincoln Park by us under the Purchase Agreement may result in substantial dilution to the interests of other holders of our common stock. In addition, if we sell a substantial number of shares to Lincoln Park under the Purchase Agreement, or if investors expect that we will do so, the actual sales of shares or the mere existence of our arrangement with Lincoln Park may make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect such sales. However, we have the right to control the timing and amount of any additional sales of our shares to Lincoln Park and the Purchase Agreement may be terminated by us at any time at our discretion without any cost to us.

Pursuant to the terms of the Purchase Agreement, we have the right, but not the obligation, to direct Lincoln Park to purchase up to \$33,000,000 of our common stock, exclusive of the Commitment Shares being issued to Lincoln Park as consideration for its commitment to purchase shares of our common stock under the Purchase Agreement. The Purchase Agreement generally prohibits us from issuing or selling to Lincoln Park under the Purchase Agreement (i) shares of our common stock in excess of the Exchange Cap, unless we obtain stockholder approval to issue shares in excess of the Exchange Cap or the shares we desire to sell in excess of the Exchange Cap must be sold for an average price that equals or exceeds \$9.92 per share, such that the transactions contemplated by the Purchase Agreement are exempt from the Exchange Cap limitation under applicable Nasdaq rules and (ii) any shares of our common stock if those shares, when aggregated with all other shares of our common stock then beneficially owned by Lincoln Park, would exceed the Beneficial Ownership Cap of 9.99% of our then issued and outstanding shares of common stock.

The following table sets forth the amount of gross proceeds we would receive from Lincoln Park from our sale of shares to Lincoln Park under the Purchase Agreement at varying purchase prices:

Assumed Average Purchase Price Per Share	Number of Registered Shares to be Issued if Full Purchase <sup>(1)</sup>	Percentage of Outstanding Shares Issued After Giving Effect to the Issuance to Lincoln Park <sup>(2)</sup>	Proceeds from the Sale of Shares Under the Purchase Agreement Registered in this Offering
\$ 6.00	5,500,000	4.8%	\$33,000,000
\$ 8.00	4,125,000	3.7%	\$33,000,000
\$ 9.92 (3)	3,326,613	3.0%	\$33,000,000
\$ 12.00	2,750,000	2.5%	\$33,000,000
\$ 15.00	2,200,000	2.0%	\$33,000,000

(1) Includes the total number of Purchase Shares that we would have sold under the Purchase Agreement at the corresponding assumed average purchase price set forth in the first column, up to the aggregate purchase price of \$33,000,000, if available, while giving effect to the Exchange Cap and without regard for the Beneficial Ownership Cap, and excludes the Commitment Shares.

(2) The denominator is based on 108,116,597 shares outstanding as of October 1, 2021 adjusted to include the issuance of (i) 30,312 Initial Commitment Shares being issued to Lincoln Park as consideration for its commitment to purchase shares of our common stock under the Purchase Agreement, (ii) 60,623 additional commitment shares issuable to Lincoln Park pro rata in connection with the sale of shares to Lincoln Park under the Purchase Agreement and (iii) the number of shares set forth in the adjacent column that we would have sold to Lincoln Park, assuming the average purchase price in the first column. The numerator is based on the number of shares issuable under the Purchase

Agreement (that are the subject of this offering) at the corresponding assumed average purchase price set forth in the first column.

(3) The closing price of our common stock on October 1, 2021.

S-13

## PLAN OF DISTRIBUTION

Pursuant to this prospectus supplement and the accompanying prospectus, we are offering up to \$33,902,076 in shares of our common stock that may be issued by us directly to Lincoln Park from time to time pursuant to the Purchase Agreement. This prospectus supplement and the accompanying prospectus also cover the resale of these shares by Lincoln Park to the public.

We entered into the Purchase Agreement with Lincoln Park on October 4, 2021. The Purchase Agreement provides that, upon the terms and subject to the conditions set forth therein, Lincoln Park is committed to purchase an aggregate of up to \$33,000,000 of shares of our common stock over the 36-month term of the Purchase Agreement. In consideration for entering into the Purchase Agreement, we are issuing 30,312 shares of our common stock to Lincoln Park as initial commitment shares, and we may issue up to 60,623 shares of our common stock as additional commitment shares in connection with the purchase of our common stock by Lincoln Park. See “Lincoln Park Transaction.”

Lincoln Park is an “underwriter” within the meaning of Section 2(a)(11) of the Securities Act. Lincoln Park has informed us that it will use an unaffiliated broker-dealer to effectuate all sales, if any, of the common stock that it may purchase from us pursuant to the Purchase Agreement. Such sales will be made on the Nasdaq Capital Market at prices and at terms then prevailing or at prices related to the then current market price. Each such unaffiliated broker-dealer will be an underwriter within the meaning of Section 2(a)(11) of the Securities Act. Lincoln Park has informed us that each such broker-dealer will receive commissions from Lincoln Park that will not exceed customary brokerage commissions.

We know of no existing arrangements between Lincoln Park and any other stockholder, broker, dealer, underwriter, or agent relating to the sale or distribution of the shares offered by this Prospectus. At the time a particular offer of shares is made, a prospectus supplement, if required, will be distributed that will set forth the names of any agents, underwriters, or dealers and any compensation from the selling stockholder, and any other required information.

We will pay all of the expenses incident to the registration, offering, and sale of the shares to Lincoln Park.

We have agreed to indemnify Lincoln Park and certain other persons against certain liabilities in connection with the offering of shares of common stock offered hereby, including liabilities arising under the Securities Act or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities.

Lincoln Park represented to us that at no time prior to the date of the Purchase Agreement has Lincoln Park or its agents, representatives or affiliates engaged in or effected, in any manner whatsoever, directly or indirectly, any short sale (as such term is defined in Rule 200 of Regulation SHO of the Exchange Act) of our common stock or any hedging transaction. Lincoln Park agreed that during the term of the Purchase Agreement, it, its agents, representatives or affiliates will not enter into or effect, directly or indirectly, any of the foregoing transactions.

We have advised Lincoln Park that it is required to comply with Regulation M promulgated under the Exchange Act. With certain exceptions, Regulation M precludes Lincoln Park, any affiliated purchasers, and any broker-dealer or other person who participates in the distribution from bidding for or purchasing, or attempting to induce any person to bid for or purchase any security which is the subject of the distribution until the entire distribution is complete. Regulation M also prohibits any bids or purchases made in order to stabilize the price of a security in connection with the distribution of that security. All of the foregoing may affect the marketability of the shares offered by this prospectus supplement.

Broadridge Corporate Issuer Solutions is transfer agent and registrar for the common stock. Our common stock is listed on The Nasdaq Capital Market under the symbol “LWLG”.

S-14

## LEGAL MATTERS

The validity of the securities offered by this prospectus has been passed upon for us by Snell & Wilmer, L.L.P., Reno, Nevada.

## EXPERTS

The financial statements as of December 31, 2020 and 2019 and for each of the two years in the period ended December 31, 2020 and management’s assessment of the effectiveness of internal control over financial reporting as of December 31, 2020 incorporated by reference in this Prospectus have been so incorporated in reliance on the reports of Morison Cogen LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting. Morison Cogen LLP’s report on the effectiveness of internal controls over financial reporting expresses an adverse opinion on the effectiveness of the Company’s internal control over financial reporting as of December 31, 2020.

## WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and other reports and other information with the SEC under the Exchange Act. You may read and copy any reports, statements or other information filed by us at the SEC’s public reference room at 100 F Street, N.E., Washington, D.C. 20549. Our filings with the SEC are also available to the public from commercial document retrieval services and at the SEC’s website at [www.sec.gov](http://www.sec.gov).

We make available free of charge on our internet website at [www.lightwavelogic.com/investors/](http://www.lightwavelogic.com/investors/) our annual reports on Form 10-K, our quarterly reports on Form 10-Q, our current reports on Form 8-K and any amendments to those reports, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained on our website is not incorporated by reference into this prospectus supplement and you should not consider such information as part of this prospectus supplement.

## DOCUMENTS INCORPORATED BY REFERENCE

The SEC allows us to “incorporate by reference” into this prospectus certain information that we file with the SEC, which means that we can disclose important information to you by referring you to other documents separately filed by us with the SEC that contain such information. The information we incorporate by reference is considered to be part of this prospectus and information we later file with the SEC will automatically update and supersede the information in this prospectus. The following documents filed by us with the SEC pursuant to Section 13(a) of the Exchange Act and any of our future filings under Sections 13(a), 13(c), 14 or 15 (d) of the Exchange Act, except for information furnished under Item 2.02 or 7.01 of Current Report on Form 8-K, or exhibits related thereto, made before the termination of the offering are incorporated by reference herein:

- (1) our [Annual Report](#) on Form 10-K for the fiscal year ended December 30, 2020, filed with the SEC on March 31, 2021;
- (2) our Quarterly Reports on Form 10-Q for the period ended [March 31, 2021](#) and [June 30, 2021](#), filed on May 17, 2021 and August 16, 2021, respectively;

- (3) our Current Reports on Form 8-K filed on [April 20, 2021](#), [May 27, 2021](#) and [June 1, 2021](#);
- (4) the description of our common stock contained in the Registration Statement on [Form 8-A](#) (File No. 001-40766) filed with the SEC on August 27, 2021

S-15

Any statement contained herein or in any document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for the purposes of this prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or replaces such statement. Any such statement so modified or superseded shall not be deemed to constitute a part of this prospectus, except as so modified or superseded.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the reports or documents that have been incorporated by reference in the prospectus contained in the registration statement but not delivered with the prospectus, other than an exhibit to these filings unless we have specifically incorporated that exhibit by reference into the filing, upon written or oral request and at no cost to the requester. Requests should be made by writing or telephoning us at the following address:

Lightwave Logic, Inc.  
369 Inverness Parkway, Suite 350  
Englewood, CO 80112  
720-340-4949

S-16

## PROSPECTUS



**Lightwave Logic, Inc.**  
**\$100,000,000 of Common Stock**

Lightwave Logic, Inc., a Nevada corporation (“us”, “we”, “our”, or the “Company”) may offer and sell from time to time, in one or more series or issuances and on terms that we will determine at the time of the offering, shares of our common stock, par value \$0.001 per share (“Common Stock”) described in this prospectus, up to an aggregate amount of \$100,000,000.

This prospectus provides you with a general description of the securities offered. Each time we offer and sell securities, we will file a prospectus supplement to this prospectus that contains specific information about the offering and, if applicable, the amounts, prices and terms of the securities. Such supplements may also add, update or change information contained in this prospectus. You should carefully read this prospectus and the applicable prospectus supplement before you invest in any of our securities. This prospectus may not be used to consummate sales of securities unless accompanied by a prospectus supplement.

We may offer and sell the securities described in this prospectus and any prospectus supplement directly to our stockholders or to other purchasers or through agents on our behalf or through underwriters or dealers as designated from time to time. If any agents or underwriters are involved in the sale of any of these securities, the applicable prospectus supplement will provide the names of the agents or underwriters and any applicable fees, commission or discounts.

Our Common Stock is currently quoted on the OTCQX under the symbol “LWLG”. On July 1, 2021 the last reported sale price of our Common Stock on the OTCQX was \$10.85 per share.

**Investing in our securities involves a high degree of risk. See the section entitled “Risk Factors” on page 3 of this prospectus and in the documents we filed with the Securities and Exchange Commission that are incorporated in this prospectus by reference for certain risks and uncertainties you should consider.**

**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. Any representation to the contrary is a criminal offense.**

**This prospectus is dated July 9, 2021.**

## TABLE OF CONTENTS

<a href="#">ABOUT THIS PROSPECTUS</a>	ii
<a href="#">PROSPECTUS SUMMARY</a>	1
<a href="#">RISK FACTORS</a>	3
<a href="#">CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</a>	3
<a href="#">USE OF PROCEEDS</a>	4
<a href="#">DESCRIPTION OF OUR CAPITAL STOCK</a>	5
<a href="#">PLAN OF DISTRIBUTION</a>	7
<a href="#">LEGAL MATTERS</a>	9
<a href="#">EXPERTS</a>	9
<a href="#">DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION</a>	9
<a href="#">WHERE YOU CAN FIND MORE INFORMATION</a>	9

---

## ABOUT THIS PROSPECTUS

This prospectus of Lightwave Logic, Inc., a Nevada corporation (collectively with all of its subsidiaries, the “Company”, or “we”, “us”, or “our”) is a part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (“SEC”) utilizing a “shelf” registration process. Under this shelf registration process, we may, from time to time, sell the securities described in this prospectus in one or more offerings up to a total dollar amount of \$100,000,000 as described in this prospectus.

The registration statement of which this prospectus is a part provides additional information about us and the securities offered under this prospectus. The registration statement, including the exhibits and the documents incorporated herein by reference, can be read on the SEC website or at the SEC offices mentioned under the heading “Where You Can Find More Information.”

We will provide a prospectus supplement containing specific information about the amounts, prices and terms of the securities for a particular offering. The prospectus supplement may add, update or change information in this prospectus. If the information in the prospectus is inconsistent with a prospectus supplement, you should rely on the information in that prospectus supplement. You should read both this prospectus and, if applicable, any prospectus supplement. See “Prospectus Summary — Where You Can Find More Information” for more information.

You should rely only on the information contained or incorporated by reference in this prospectus and in any prospectus supplement. 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 offers to sell or solicitations to buy the securities in any jurisdiction in which an offer or solicitation is not authorized or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should not assume that the information in this prospectus or any prospectus supplement, as well as the information we file or previously filed with the SEC that we incorporate by reference in this prospectus or any prospectus supplement, is accurate as of any date other than the date of such document. Our business, financial condition, results of operations and prospects may have changed since those dates.

---

## PROSPECTUS SUMMARY

*The items in the following summary are described in more detail later in this prospectus. This summary does not contain all of the information you should consider. Before investing in our securities, you should read the entire prospectus carefully, including the “Risk Factors” beginning on page 3 and the financial statements incorporated by reference.*

### Overview

We are a development stage company moving toward commercialization of next generation electro-optic photonic devices made on its P<sup>2</sup>IC<sup>TM</sup> technology platform, which uses in-house proprietary high-activity and high-stability organic polymers. Electro-optical devices convert data from electric signals into optical signals for multiple applications.

Our differentiation at the device level is in higher speed, lower power consumption, simplicity of manufacturing and reliability. We have demonstrated higher speed and lower power consumption in packaged devices, and during 2019, we developed new materials that promise to further lower power consumption. We are currently focused on testing and demonstrating the simplicity of manufacturability and reliability of our devices, including in conjunction with the silicon photonics manufacturing ecosystem.

We are initially targeting applications in data communications and telecommunications markets and are exploring other applications for our polymer technology platform.

### Materials Development

Our Company designs and synthesizes organic chromophores for use in its own proprietary electro-optic *polymer systems* and photonic device designs. A polymer system is not solely a material, but also encompasses various technical enhancements necessary for its implementation. These include host polymers, poling methodologies, and molecular spacer systems that are customized to achieve specific optical properties. Our organic electro-optic polymer systems compounds are mixed into solution form that allows for thin film application. Our proprietary electro-optic polymers are designed at the molecular level for potentially superior performance, stability and cost-efficiency. We believe they have the potential to replace more expensive, higher power consuming, slower-performance materials and devices used in fiber-optic communication networks.

Our patented and patent pending molecular architectures are based on a well-understood chemical and quantum mechanical occurrence known as *aromaticity*. Aromaticity provides a high degree of molecular stability that enables our core molecular structures to maintain stability under a broad range of operating conditions.

We expect our patented and patent-pending optical materials along with trade secrets and licensed materials, to be the core of and the enabling technology for future generations of optical devices, modules, sub-systems and systems that we will develop or potentially out-license to electro-optic device manufacturers. Our Company contemplates future applications that may address the needs of semiconductor companies, optical network companies, Web 2.0 media companies, high performance computing companies, telecommunications companies, aerospace companies, and government agencies.

---

### Device Design and Development

#### *Electro-optic Modulators*

Our Company designs its own proprietary electro-optical modulation devices. Electro-optical modulators convert data from electric signals into optical signals that can then be transmitted over high-speed fiber-optic cables. Our modulators are electro-optic, meaning they work because the optical properties of the polymers are affected by electric fields applied by means of electrodes. Modulators are key components that are used in fiber optic telecommunications, data communications, and data centers networks etc., to convey the high data flows that have been driven by applications such as pictures, video streaming, movies etc., that are being transmitted through the Internet. Electro-optical modulators are expected to continue to be an essential element as the appetite and hunger for data increases every year.

#### *Polymer Photonic Integrated Circuits (P<sup>2</sup>IC<sup>TM</sup>)*

Our Company also designs its own proprietary polymer photonic integrated circuits (otherwise termed a polymer PIC). A polymer PIC is a photonic device that integrates

several photonic functions on a single chip. We believe that our technology can enable the ultra-miniaturization needed to increase the number of photonic functions residing on a semiconductor chip to create a progression like what was seen in the computer integrated circuits, commonly referred to as Moore's Law. One type of integration is to combine several instances of the same photonic functions such as a plurality of modulators to create a 4 channel polymer PIC. In this case, the number of photonic components would increase by a factor of 4. Another type is to combine different types of devices including from different technology bases such as the combination of a semiconductor laser with a polymer modulator. Our P<sup>2</sup>IC<sup>TM</sup> platform encompasses both these types of architecture.

Current photonic technology today is struggling to reach faster device speeds. Our modulator devices, enabled by our electro-optic polymer material systems, work at extremely high frequencies (wide bandwidths) and possess inherent advantages over current crystalline electro-optic material contained in most modulator devices such as lithium niobate (LiNbO<sub>3</sub>), indium phosphide (InP), silicon (Si), and gallium arsenide (GaAs). Our advanced electro-optic polymer platform is creating a new class of modulators such as the Polymer Stack<sup>TM</sup> and associated PIC platforms that can address higher data rates in a lower cost, lower power consuming manner, with much simpler modulation techniques.

Our electro-optic polymers can be integrated with other materials platforms because they can be applied as a thin film coating in a fabrication clean room such as may be found in semiconductor foundries. This approach we call Polymer Plus<sup>TM</sup>. Our polymers are unique in that they are stable enough to seamlessly integrate into existing CMOS, Indium Phosphide (InP), Gallium Arsenide (GaAs), and other semiconductor manufacturing lines. Of particular relevance are the integrated silicon photonics platforms that combine optical and electronic functions. These include a miniaturized modulator for ultra-small footprint applications, which we term the Polymer Slot<sup>TM</sup>. This design is based on a slot modulator fabricated into semiconductor wafers that include both silicon and indium phosphide.

## Our Company

We were incorporated under the laws of the State of Nevada on June 24, 1997. In 2004, we acquired PSI-TEC Corp., and in 2006 we merged with PSI-TEC Corp. PSI-TEC Corp. was incorporated under the laws of the State of Delaware on September 12, 1995. In 2008, we changed our name to Lightwave Logic, Inc. Unless the context otherwise requires, all references to the "Company," "we," "our" or "us" and other similar terms means Lightwave Logic, Inc., a Nevada corporation. Our trademarks in the United States include P<sup>2</sup>IC<sup>TM</sup> and Perkinamine<sup>TM</sup>. All other trademarks, service marks and trade names included or incorporated by reference in this prospectus are the property of their respective owners.

Our principal executive office is located at 369 Inverness Parkway, Suite 350, Englewood, CO 80112, and our telephone number is (720) 340-4949. Our website address is [www.lightwavelogic.com](http://www.lightwavelogic.com). No information found on our website is part of this prospectus.

## RISK FACTORS

*An investment in our Common Stock involves significant risks. You should carefully consider the risk factors contained in our filings with the SEC, as well as all of the information contained in any prospectus supplement, free writing prospectus and amendments thereto, before you decide to invest in our Common Stock. Our business, prospects, financial condition and results of operations may be materially and adversely affected as a result of any of such risks. The value of our Common Stock could decline as a result of any of these risks. You could lose all or part of your investment in our Common Stock. Some of our statements in sections entitled "Risk Factors" are forward-looking statements. You should also consider the risks, uncertainties and assumptions discussed under "Part I—Item 1A—Risk Factors" of our most recent Annual Report on Form 10-K and in "Part II—Item 1A—Risk Factors" in our most recent Quarterly Report on Form 10-Q filed subsequent to such Form 10-K that are incorporated herein by reference, as may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business, prospects, financial condition and results of operations.*

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by words such as: "anticipate," "intend," "plan," "goal," "seek," "believe," "project," "estimate," "expect," "continuing," "ongoing," "strategy," "future," "likely," "may," "should," "could," "will" and similar references to future periods. Examples of forward-looking statements include, among others, statements we make regarding expected operating results, such as anticipated revenue; anticipated levels of capital expenditures for our current fiscal year; our belief that we have, or will have, sufficient liquidity to fund our business operations during the next 12 months; strategy for gaining customers, growth, product development, market position, financial results and reserves.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations, and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not rely on any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the following: lack of available funding; general economic and business conditions; deterioration in global economic and financial market conditions generally including as a result of pandemic health issues caused by COVID-19 and its effects, competition from third parties; intellectual property rights of third parties; regulatory constraints; changes in technology and methods of marketing; delays in completing various engineering and manufacturing programs; changes in customer order patterns; changes in product mix; success in technological advances and delivering technological innovations; shortages in components; production delays due to performance quality issues with outsourced components; and other factors beyond the Company's control.

The ultimate correctness of these forward-looking statements depends upon a number of known and unknown risks and events. We discuss our known material risks under Item 1.A "Risk Factors" contained in our Company's Annual Report on Form 10-K for the year ended December 31, 2020. Many factors could cause our actual results to differ materially from the forward-looking statements. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

Any forward-looking statement made by us in this prospectus is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether written or oral, that may be made from time to time, whether as a result of new information, future developments or otherwise.

## USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds to us from the sale of our securities under this prospectus. Unless otherwise provided in the applicable prospectus supplement, we currently expect to use the net proceeds that we receive from this offering for working capital and other general corporate purposes. We may also use a portion of the net proceeds to acquire, license or invest in complementary technologies or businesses; however, we currently have no agreements or commitments to complete any such transaction. The expected use of net proceeds of this offering represents our current intentions based on our present plans and business conditions. We cannot specify with certainty all of the particular uses for the net proceeds to be received upon the closing of this offering.

## DESCRIPTION OF OUR COMMON STOCK

The following description of our common stock is a summary and does not purport to be complete. It is subject to and qualified in its entirety by reference to our Articles of Incorporation, as amended (the "articles of incorporation") and our Restated Bylaws (the "bylaws"), each of which are incorporated by reference to this prospectus. We encourage you to read our articles of incorporation, our bylaws and the applicable provisions of the Nevada Revised Statutes for additional information.

**Authorized Share Capital.** The Company's authorized capital stock consists of 250,000,000 shares of common stock, par value \$0.001 per share and 1,000,000 shares of preferred stock, par value \$0.001 per share.

**Voting.** Each outstanding share of common stock is entitled to one vote on all matters to be submitted to a vote of the shareholders. Holders do not have preemptive rights, so we may issue additional shares that may reduce each holder's voting and financial interest in our Company. Cumulative voting does not apply to the election of directors, so holders of more than 50% of the shares voted for the election of directors can elect all of the directors. All elections for directors shall be decided by a plurality vote; all other questions shall be decided by majority vote except as otherwise provided by Nevada Revised Statutes. Our bylaws permit the holders of the same percentage of all shareholders entitled to vote at a meeting to take action by written consent without a meeting.

**Dividend Rights.** Holders of common stock are entitled to receive dividends when, as and if declared by the board of directors out of funds legally available therefor.

**Liquidation Preferences.** In the event of liquidation, dissolution or winding up of our Company, holders of common stock are entitled to share ratably in all assets remaining available for distribution to them after payment of liabilities and after provision has been made for each class of stock, if any, having preference over the common stock.

**Other Terms.** Holders of common stock do not have any conversion, redemption provisions or other subscription rights. All of the outstanding shares of common stock are fully paid and non-assessable.

### Anti-Takeover Provisions

Certain of our charter, statutory and contractual provisions could make the removal of our management and directors more difficult and may discourage transactions that otherwise could involve payment of a premium over prevailing market prices for our common stock. Furthermore, the existence of the foregoing provisions could lower the price that investors might be willing to pay in the future for shares of our common stock. They could also deter potential acquirers of our Company, thereby reducing the likelihood that you could receive a premium for your common stock in an acquisition.

### Charter and Bylaw Provisions

Our articles of incorporation and bylaws contain the following provisions that may have the effect of discouraging unsolicited acquisition proposals:

- authorize our board of directors to create and issue, without shareholder approval, preferred stock, thereby increasing the number of outstanding shares, which can deter or prevent a takeover attempt;
- prohibit cumulative voting in the election of directors, which would otherwise allow less than a majority of shareholders to elect director candidates;
- empower our board of directors to fill any vacancy on our board of directors, whether such vacancy occurs as a result of an increase in the number of directors or otherwise;
- provide that our board of directors be divided into three classes, with approximately one-third of the directors to be elected each year;
- provide that our board of directors is expressly authorized to adopt, amend or repeal our bylaws; and
- provide that our directors will be elected by a plurality of the votes cast in the election of directors.

These provisions could lower the price that future investors might be willing to pay for shares of our common stock.

### Nevada Law

Nevada Revised Statutes sections 78.378 to 78.3793 provide state regulation over the acquisition of a controlling interest in certain Nevada corporations unless the articles of incorporation or bylaws of the corporation provide that the provisions of these sections do not apply. Our articles of incorporation and bylaws do not state that these provisions do not apply. The statute creates a number of restrictions on the ability of a person or entity to acquire control of a Nevada company by setting down certain rules of conduct and voting restrictions in any acquisition attempt, among other things. The statute contains certain limitations and it may not apply to our Company. These provisions may have the effect of deterring hostile takeovers or delaying changes in control, which could depress the market price of our common stock and deprive shareholders of opportunities to realize a premium on shares of common stock held by them.

### Contractual Provisions

Our employee stock option agreements include change-in-control provisions that allow us to grant options or stock purchase rights that may become vested immediately upon a change in control. The terms of change of control provisions contained in certain of our senior executive employee agreements may also discourage a change in control of our Company.

Our board of directors also has the power to adopt a shareholder rights plan that could delay or prevent a change in control of our Company even if the change in control is generally beneficial to our shareholders. These plans, sometimes called "poison pills," are oftentimes criticized by institutional investors or their advisors and could affect our rating by such investors or advisors. If our board of directors adopts such a plan, it might have the effect of reducing the price that new investors are willing to pay for shares of our common stock.

Together, these charter, statutory and contractual provisions could make the removal of our management and directors more difficult and may discourage transactions that otherwise could involve payment of a premium over prevailing market prices for our common stock. Furthermore, the existence of the foregoing provisions, could limit the price that investors might be willing to pay in the future for shares of our common stock. They could also deter potential acquirers of our Company, thereby reducing the likelihood that you could receive a premium for your common stock in an acquisition.

## PLAN OF DISTRIBUTION

We may sell securities:

- through underwriters;
- through dealers;
- through agents;
- directly to purchasers; or
- through a combination of any of these methods of sale.

In addition, we may issue the securities as a dividend or distribution to our existing securityholders.

We may directly solicit offers to purchase securities or agents may be designated to solicit such offers. We will, in the prospectus supplement relating to such offering, name any agent that could be viewed as an underwriter under the Securities Act and describe any commissions that we must pay. Any such agent will be acting on a best-efforts basis for the period of its appointment or, if indicated in the applicable prospectus supplement, on a firm commitment basis. This prospectus may be used in connection with any offering of our securities through any of these methods or other methods described in the applicable prospectus supplement.

The distribution of the securities may be affected from time to time in one or more transactions:

- at a fixed price or prices that may be changed from time to time;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Each prospectus supplement will describe the method of distribution of the securities and any applicable restrictions.

The prospectus supplement with respect to the securities of a particular series will describe the terms of the offering of the securities, including the following:

- the name of the agent or any underwriters;
- the public offering or purchase price;
- any discounts and commissions to be allowed or paid to the agent or underwriters;
- all other items constituting underwriting compensation;
- any discounts and commissions to be allowed or paid to dealers; and
- any exchanges on which the securities will be listed.

If any underwriters or agents are utilized in the sale of the securities in respect of which this prospectus is delivered, we will enter into an underwriting agreement or other agreement with them at the time of sale to them, and we will set forth in the prospectus supplement relating to such offering the names of the underwriters or agents and the terms of the related agreement with them.

If a dealer is utilized in the sale of the securities in respect of which the prospectus is delivered, we will sell such securities to the dealer, as principal. The dealer may then resell such securities to the public at varying prices to be determined by such dealer at the time of resale.

Agents, underwriters, dealers and other persons may be entitled under agreements that they may enter into with us to indemnification by us against certain civil liabilities, including liabilities under the Securities Act.

Certain agents, underwriters and dealers, and their associates and affiliates may be customers of, have borrowing relationships with, engage in other transactions with, and/or perform services, including investment banking services, for us or one or more of our respective affiliates in the ordinary course of business.

In order to facilitate the offering of the securities, any underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the securities or any other securities the prices of which may be used to determine payments on such securities. Specifically, any underwriters may over-allot in connection with the offering, creating a short position for their own accounts. In addition, to cover over-allotments or to stabilize the price of the securities or of any such other securities, the underwriters may bid for, and purchase, the securities or any such other securities in the open market. Finally, in any offering of the securities through a syndicate of underwriters, the underwriting syndicate may reclaim selling concessions allowed to an underwriter or a dealer for distributing the securities in the offering if the syndicate repurchases previously distributed securities in transactions to cover syndicate short positions, in stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market price of the securities above independent market levels. Any such underwriters are not required to engage in these activities and may end any of these activities at any time.

Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in two business days, unless the parties to any such trade expressly agree otherwise. The applicable prospectus supplement may provide that the original issue date for your securities may be more than two scheduled business days after the trade date for your securities. Accordingly, in such a case, if you wish to trade securities on any date prior to the third business day before the original issue date for your securities, you will be required, by virtue of the fact that your securities initially are expected to settle in more than three scheduled business days after the trade date for your securities, to make alternative settlement arrangements to prevent a failed settlement.

## LEGAL MATTERS

The validity of the securities offered by this prospectus has been passed upon for us by Snell & Wilmer LLP. If legal matters in connection with offerings made pursuant to this prospectus are passed upon by counsel for the underwriters, dealers or agents, if any, such counsel will be named in the prospectus supplement relating to such offering.

## EXPERTS

Morison Cogen LLP, our independent registered public accounting firm, has audited our balance sheets as of December 31, 2020 and 2019, and the related statements of operations, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes (herein referred to as "financial statements"), as set forth in their report, which is incorporated by reference in the prospectus and elsewhere in this registration statement. We have included our financial statements in this prospectus and elsewhere in the registration statement. Our consolidated financial statements are incorporated by reference in reliance on Morison Cogen LLP's report, given on their authority as experts in accounting and auditing.

## DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION

Insofar as indemnification for liabilities arising under the Securities Act, as amended, may be permitted to directors, officers, and controlling persons of the registrant pursuant to the Company's constituent documents, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities 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 in the successful defense of any action, suit, or proceeding) is asserted by such director, officer, or controlling person connected with the securities being registered, we will, unless in the opinion of our 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 Securities Act and will be governed by the final adjudication of such issue.

## WHERE YOU CAN FIND MORE INFORMATION

We are subject to the information requirements of the Securities Exchange Act of 1934 (the "Exchange Act"). Accordingly, we file annual, quarterly and current reports, proxy statements as may be required and other information with the SEC and filed a registration statement on Form S-3 under the Securities Act relating to the securities offered by this prospectus. This prospectus, which forms part of the registration statement, does not contain all of the information included in the registration statement. For further information, you should refer to the registration statement and its exhibits.

You can review our filings by accessing the website maintained by the SEC at <http://www.sec.gov>. The site contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. In addition to the foregoing, we maintain a website at [www.LightwaveLogic.com](http://www.LightwaveLogic.com). Our website content is made available for informational purposes only. It should neither be relied upon for investment purposes nor is it incorporated by reference into this prospectus. We make available at <https://www.lightwavelogic.com/investors/> copies of our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K and any amendments to such document as soon as practicable after we electronically file such material with or furnish such documents to the SEC.

9

## DOCUMENTS INCORPORATED BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus certain information that we file with the SEC, which means that we can disclose important information to you by referring you to other documents separately filed by us with the SEC that contain such information. The information we incorporate by reference is considered to be part of this prospectus and information we later file with the SEC will automatically update and supersede the information in this prospectus. The following documents filed by us with the SEC pursuant to Section 13(a) of the Exchange Act and any of our future filings under Sections 13(a), 13(c), 14 or 15 (d) of the Exchange Act, except for information furnished under Item 2.02 or 7.01 of Current Report on Form 8-K or other information "furnished" to the SEC, or any exhibits related thereto, made before the termination of the offering are incorporated by reference herein:

- (1) our [Annual Report on Form 10-K](#) for the fiscal year ended December 31, 2020 filed with the SEC on March 31, 2021;
- (2) our [Quarterly Report on Form 10-Q](#) for the quarterly period ended March 31, 2021 filed with the SEC on May 17, 2021; and
- (2) our Current Reports on Form 8-K filed with the SEC on [April 20, 2021](#), [May 27, 2021](#), and [June 1, 2021](#).

Any statement contained in this prospectus or in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded to the extent that a statement contained in this prospectus or any subsequently filed document that is deemed to be incorporated by reference into this prospectus modifies or supersedes the statement.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the reports or documents that have been incorporated by reference in the prospectus contained in the registration statement but not delivered with the prospectus, other than an exhibit to these filings unless we have specifically incorporated that exhibit by reference into the filing, upon written or oral request and at no cost to the requester. Requests should be made by writing or telephoning us at the following address:

Lightwave Logic, Inc.  
369 Inverness Parkway, Suite 350  
Englewood, CO 80112  
720-340-4949

10

**Up to \$33,902,076  
Common Stock**

**PROSPECTUS SUPPLEMENT**

**October 4, 2021**