

PROSPECTUS SUPPLEMENT
(To Prospectus dated March 21, 2023)**\$55,000,000****Applied Optoelectronics, Inc.**
Common Stock

We have entered into an Equity Distribution Agreement with Raymond James & Associates, Inc. (“Raymond James”), or the sales agreement, relating to shares of our common stock offered by this prospectus supplement. In accordance with the terms of the sales agreement, we may offer and sell through this prospectus supplement shares of our common stock having an aggregate offering price of up to \$55,000,000 from time to time through Raymond James, acting as agent.

Our common stock is listed on The Nasdaq Global Market under the symbol “AAOI.” On November 6, 2024, the last reported sale price of our common stock on The Nasdaq Global Market was \$16.21 per share.

Sales of our common stock, if any, under this prospectus supplement may be made in sales deemed to be “at-the-market” equity offerings as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, or the Securities Act, including sales made directly on or through The Nasdaq Global Market, the existing trading market for our common stock, sales made to or through a market maker other than on an exchange or otherwise, in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices, and any other method permitted by law, including in privately negotiated transactions. Raymond James is not required to sell any specific number or dollar amount of securities, but will act as sales agent and use commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold by us, consistent with its normal trading and sales practices, on mutually agreed terms between Raymond James and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

Except as otherwise described in the sales agreement, Raymond James will be entitled to compensation at a commission rate of up to 2.0% of the gross sales price per share sold. In connection with the sale of our common stock on our behalf, Raymond James may be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation of Raymond James may be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Raymond James with respect to certain liabilities, including liabilities under the Securities Act and the Securities Exchange Act of 1934, as amended, or Exchange Act.

INVESTING IN OUR SECURITIES INVOLVES SIGNIFICANT RISKS. YOU SHOULD REVIEW CAREFULLY THE “RISK FACTORS” BEGINNING ON PAGE S-5 OF THIS PROSPECTUS SUPPLEMENT AND UNDER SIMILAR HEADINGS IN THE OTHER DOCUMENTS THAT ARE INCORPORATED BY REFERENCE INTO THIS PROSPECTUS SUPPLEMENT BEFORE INVESTING IN OUR SECURITIES.

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.

RAYMOND JAMES

The date of this prospectus supplement is November 7, 2024.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this prospectus supplement, and the accompanying base prospectus, we may offer shares of our common stock having an aggregate offering price of up to \$55,000,000 from time to time at prices and on terms to be determined by market conditions at the time of the offering.

We provide information to you about this offering of shares of our common stock in two separate documents that are bound together: (1) this prospectus supplement, which describes the specific details regarding this offering; and (2) the accompanying base prospectus, which provides general information, some of which may not apply to this offering. Generally, when we refer to this “prospectus,” we are referring to both documents combined. If information in this prospectus supplement is inconsistent with the accompanying base prospectus, you should rely on this prospectus supplement. However, if any statement in one of these documents is inconsistent with a statement in another document having a later date, for example, a document incorporated by reference in this prospectus supplement, the statement in the document having the later date modifies or supersedes the earlier statement as our business, financial condition, results of operations and prospects may have changed since the earlier dates.

To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying base prospectus or in any document incorporated by reference in this prospectus supplement having an earlier date than the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. You should also read and consider the additional information under the captions “Information Incorporated by Reference” and “Where To Learn More About Us” in this prospectus supplement.

In making your investment decision, you should rely only on the information contained or incorporated by reference in this prospectus supplement, in the accompanying base prospectus and in any free writing prospectus with respect to this offering filed by us with the SEC. We have not, and Raymond James & Associates, Inc., or Raymond James, has 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. You should assume that the information appearing in this prospectus supplement, the accompanying base prospectus, any free writing prospectus with respect to the offering filed by us with the SEC and the documents incorporated by reference herein and therein is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed since those dates.

We are offering to sell shares of common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying base prospectus and the offering of the common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying base prospectus must inform themselves about, and observe any restrictions relating to, the offering of the common stock and the distribution of this prospectus supplement and the accompanying base prospectus outside the United States. This prospectus supplement and the accompanying base prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement and the accompanying base prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

References in this prospectus supplement to “AOI,” “we,” “us” and “our” and similar terms refer to Applied Optoelectronics, Inc.

We have filed or incorporated by reference exhibits to the registration statement of which this prospectus supplement forms a part. You should read the exhibits carefully for provisions that may be important to you.

PROSPECTUS SUPPLEMENT SUMMARY

This summary description about us, our business and this offering highlights selected information contained elsewhere in this prospectus or incorporated in this prospectus by reference. This summary does not contain all of the information you should consider before deciding to invest in our common stock. You should carefully read this entire prospectus and any free writing prospectus that we have authorized for use in connection with this offering, including each of the documents incorporated herein or therein by reference, before making an investment decision. Investors should carefully consider the information set forth under “Risk Factors” beginning on page [S-5](#) and incorporated by reference to our annual report on Form 10-K and our quarterly reports on Form 10-Q.

The Company

We are a leading, vertically integrated provider of fiber-optic networking products. We target four networking end-markets: internet data centers, cable television (“CATV”), telecommunications (“telecom”), and fiber-to-the-home (“FTTH”). We design and manufacture a range of optical communications products at varying levels of integration, from components, subassemblies and modules to complete turn-key equipment.

In designing products for our customers, we typically begin with the fundamental building blocks of lasers and laser components. From these foundational products, we design and manufacture a wide range of products to meet our customers’ needs and specifications, and such products differ from each other by their end market, intended use and level of integration. We are primarily focused on the higher-performance segments within the internet data center, CATV, telecom and FTTH markets, which increasingly demand faster connectivity and innovation.

The four end markets we target are all driven by significant bandwidth demand fueled by the growth of network-connected devices, video traffic, cloud computing and online social networking. Within the internet data center market, we benefit from the increasing use of higher-capacity optical networking technology as a replacement for older, lower-speed optical interconnects, particularly as speeds reach 800 Gbps and above, as well as the movement to open internet data center architectures and the increasing use of in-house equipment design among leading internet companies. Within the CATV market, we benefit from a number of ongoing trends including the move to higher bandwidth networks among CATV service providers, especially the desire by CATV multiple system operators (“MSOs”) to increase the return-path bandwidth available to offer to their customers. In the FTTH market, we benefit from continuing passive optical network (“PON”) deployments and system updates among telecom service providers. In the telecom market, we benefit from deployment of new high-speed fiber-optic networks by telecom network operators, including 5G networks.

The internet data center market is currently our largest and fastest-growing market. Our customers in this market are generally large internet-based (“hyperscale”) data center operators, along with equipment suppliers who supply our products along with others to our hyperscale data center operator customers. In both cases, we supply optical transceivers that plug into switches and servers within the data center and allow these network devices to send and receive data over fiber optic cables. The majority of the data center optical transceivers that we sell utilize our own lasers and subassemblies (we refer to the transceivers subassemblies as “light engines”), and we believe that our in-house technology and manufacturing capability for these lasers and subassemblies gives us an advantage over many of our competitors who often lack either development or manufacturing capabilities for these advanced optical modules. The rapid adoption of AI is fueling a new wave of investment by hyperscale data center operators, as AI computing is very compute and bandwidth intensive.

The CATV market is our second largest and the most established market, for which we supply a broad array of products, including lasers, transmitters and transceivers, and turn-key equipment. Sales of headend, node and distribution equipment, including amplifiers, have contributed significantly to our revenue in recent years as a result of our ability to meet the needs of CATV equipment vendors who have continued to outsource both the design and manufacturing of this equipment. In 2023, we began offering many of our CATV products directly to MSO customers,

under the newly-created Quantum Bandwidth™ brand name. We made this strategic decision in order to better address the needs of our MSO customers as we believe they are embarking on a complex and lengthy series of network upgrades that will likely require significant innovation from their equipment suppliers. By selling products directly to these customers, we believe that we will be able to address these needs more efficiently and will improve our time to market for these new innovations, which MSOs have indicated will be critical to timely rollout of their planned network upgrades.

As the complexity of CATV networks has increased over the years, equipment vendors, many of whom are our customers, have been under pressure to supply a wider variety of increasingly complex equipment to MSOs. In order to meet these demands, many equipment vendors have looked to engage with suppliers like us who have the capability to design and manufacture various network equipment or subassemblies, rather than always developing these devices themselves. This outsourcing trend has been a significant contributor to the revenue we derive from the CATV market. We believe that our extensive high-speed optical, mixed-signal semiconductor and mechanical engineering capabilities position us well to continue to benefit from these industry dynamics. Our recent launch of our own branded line of equipment offers an additional growth opportunity for us, enabling us to sell directly to MSOs in certain cases rather than to CATV equipment vendors.

In the telecom market we supply lasers and laser subassemblies as well as transceivers. Our customers in this segment consist mostly of network equipment manufacturers (“NEMs”) and other manufacturers of optical transceivers. Our NEM customers manufacture equipment used in telecommunications networks and our transceiver manufacturer customers use our lasers and subassemblies in the manufacture of their optical transceivers. Most of our products in this segment are purchased for use in advanced 5G mobile network deployments.

Our vertically integrated manufacturing model provides us several advantages, including rapid product development, fast response times to customer requests and greater control over product quality and manufacturing costs. We design, manufacture and integrate our own analog and digital lasers using proprietary Molecular Beam Epitaxy (“MBE”) and Metal Organic Chemical Vapor Deposition (“MOCVD”), alternative processes for the fabrication of lasers. We believe the use of both processes, and our knowledge of how to combine these processes with others to fabricate lasers is unique in our industry. We manufacture the majority of the laser chips and optical components that are used in our products. The lasers we manufacture are tested extensively to enable reliable operation over time and our devices are often highly tolerant of changes in temperature and humidity, making them well-suited to the CATV, FTTH and 5G telecom markets where networking equipment is often installed outdoors. All of our laser chips are manufactured in our facility in Sugar Land, Texas. We believe that our domestic production capacity for these devices gives us a competitive advantage over many of our competitors, as we believe that many of our customers prefer to source key components from suppliers who have domestic manufacturing capacity.

Corporate Information

We were incorporated in the State of Texas in 1997. In March 2013, we converted from a Texas corporation into a Delaware corporation. Prime World International Holdings, Ltd. (“Prime World”) is our wholly-owned subsidiary incorporated in the British Virgin Islands on January 13, 2006. Prime World is the parent company of Global Technology, Inc. (“Global”). Global was established in June 2002 in the People’s Republic of China (“PRC”) and was acquired by Prime World on March 30, 2006. Prime World also operates a division in Taiwan, which is qualified to do business in Taiwan and primarily manufactures transceivers and performs research and development activities.

Our principal executive offices are located at 13139 Jess Pirtle Blvd., Sugar Land, TX 77478, and our telephone number is (281) 295-1800. Our website address is www.ao-inc.com. The information on our website is not incorporated by reference into this prospectus and does not constitute a part of this prospectus.

THE OFFERING

Common stock offered by us	Shares of our common stock having an aggregate offering price of up to \$55,000,000.
Common stock outstanding before this offering	45,078,203 shares ⁽¹⁾
Manner of offering	“At-the-market” offering that may be made from time to time through our sales agent, Raymond James. See “Plan of Distribution” on page S-11 of this prospectus supplement.
Use of proceeds	We currently intend to use the net proceeds from this offering, if any, for general corporate purposes, which may include among other things, debt repayment, working capital, capital expenditures and acquisitions. See “Use of Proceeds” on page S-9 of this prospectus supplement.
Nasdaq Global Market symbol	AAOI
Risk factors	Investing in our common stock involves significant risks. Please see “Risk Factors” beginning on page S-5 of this prospectus supplement, page 5 of the accompanying base prospectus and in the documents incorporated by reference herein, to read about factors you should consider before deciding to purchase shares of our common stock.

(1) Based on shares outstanding as of November 4, 2024, excluding the following shares of common stock reserved for issuance as of that date:

- restricted stock units representing a total of 2,319,059 shares of common stock issuable upon vesting;
- performance stock units representing a total of 1,447,284 shares of common stock issuable upon the satisfaction of performance-based vesting conditions that were outstanding as of November 4, 2024, for which the performance-based vesting conditions were not yet satisfied as of November 4, 2024; and
- any shares issuable upon conversion of our 5.25% Convertible Senior Notes due 2026.

RISK FACTORS

An investment in our common stock involves a high degree of risk. You should consider carefully the risks described below and discussed under the section captioned “Risk Factors” contained in our most recent Annual Report on Form 10-K, as revised or supplemented by our Quarterly Reports on Form 10-Q since the filing of our most recent Annual Report on Form 10-K, each of which is incorporated by reference in this prospectus supplement in their entirety, together with other information in this prospectus supplement, and the information and documents incorporated by reference in this prospectus supplement and any free writing prospectus with respect to this offering filed by us with the SEC, before you make a decision to invest in our common stock. The risks and uncertainties described below are not the only ones we face. Other risks and uncertainties, including those that we do not currently consider material, may impair our business. If any of these risks actually occur, our business, financial condition, operating results or cash flows could be materially adversely affected. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment.

The common stock offered under this prospectus supplement and the accompanying base prospectus may be sold in “at-the-market” offerings, and investors who buy shares at different times will likely pay different prices.

Investors who purchase shares under this prospectus supplement and the accompanying base prospectus at different times will likely pay different prices, and so may experience different outcomes. We will have discretion, subject to market demand, to vary the timing and numbers of shares sold, and there is no minimum or maximum sales price. Investors may experience declines in the value of their shares as a result of share sales made at prices lower than the prices they paid.

The actual number of shares we will issue under the sales agreement, at any one time or in total, is uncertain.

Subject to certain limitations in the sales agreement and compliance with applicable law, we have the discretion to deliver a sales notice to Raymond James at any time throughout the term of the sales agreement. The number of shares that are sold by Raymond James after delivering a sales notice will fluctuate based on the market price of the common shares during the sales period and limits we set with Raymond James. Because the price per share of each share sold will fluctuate based on the market price of our common stock during the sales period, it is not possible at this stage to predict the number of shares that will ultimately be issued.

You may experience immediate and substantial dilution in the net tangible book value per share of the common stock you purchase in the offering.

The offering price per share in this offering may exceed the pro forma net tangible book value per share of our common stock outstanding as of September 30, 2024. Assuming that we sell an aggregate of 3,353,659 shares of our common stock at a price of \$16.40 per share, the last reported sale price of our common stock on The Nasdaq Global Market on November 4, 2024, for aggregate gross proceeds of approximately \$55,000,000, and after deducting commissions and estimated aggregate offering expenses payable by us, you will experience immediate dilution of \$10.98 per share, representing the difference between our pro forma as adjusted net tangible book value per share as of September 30, 2024 after giving effect to this offering and the assumed offering price. See the section titled “Dilution” below for a more detailed illustration of the dilution you would incur if you participate in this offering. See “— You may experience significant dilution as a result of future financings and the exercise of outstanding options or warrants” below for a more detailed discussion of the dilution you will incur if you purchase common stock in this offering.

You may experience significant dilution as a result of future financings and the exercise of outstanding options or warrants.

In order to raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock, including offerings

pursuant to the accompanying base prospectus. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock or other securities convertible into or exchangeable for our common stock in future transactions may be higher or lower than the price per share in this offering.

We will have broad discretion in the use of the net proceeds from this offering and may allocate the net proceeds from this offering in ways that you and other stockholders may not approve.

Our management will have broad discretion in the use of the net proceeds, including for any of the purposes described in the section entitled “Use of Proceeds,” and you will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. The failure of our management to use these funds effectively could have a material adverse effect on our business and cause the market price of our common stock to decline. Pending their ultimate use, we intend to invest the net proceeds in short-term, investment-grade, interest-bearing instruments. These investments may not yield a favorable return to our stockholders.

We may be subject to restrictions on our business if we sell additional equity or debt securities to fund our operations.

In order to raise additional funds to support our operations, we may sell additional equity or debt securities, which may impose restrictive covenants that adversely impact our business. The incurrence of indebtedness would result in increased fixed payment obligations and could also result in restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. If we are unable to expand our operations or otherwise capitalize on our business opportunities due to such restrictions, our business, financial condition and results of operations could be materially adversely affected.

Future sales of our common stock in the public market or other financings could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market, and the perception that such sales might occur in the future or the occurrence of other financings, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. A substantial majority of the outstanding shares of our common stock are, and all of the shares sold in this offering upon issuance will be, freely tradable without restriction or further registration under the Securities Act unless these shares are owned or purchased by “affiliates” as that term is defined in Rule 144 under the Securities Act. In addition, shares of common stock issuable upon exercise of outstanding options, restricted stock units and shares reserved for future issuance under our incentive stock plan will be eligible for sale in the public market to the extent permitted by applicable vesting requirements and, in some cases, subject to compliance with the requirements of Rule 144. As a result, these shares can be freely sold in the public market upon issuance, subject to restrictions under the securities laws.

Because we do not intend to declare cash dividends on our shares of common stock in the foreseeable future, stockholders must rely on appreciation of the value of our common stock for any return on their investment.

We have never declared or paid cash dividends on our common stock and do not anticipate declaring or paying any cash dividends in the foreseeable future. In addition, the terms of our existing debt agreements preclude us from paying dividends. As a result, we expect that only

appreciation of the price of our common stock, if any, will provide a return to investors in this offering for the foreseeable future.

Our Amended and Restated Certificate of Incorporation includes a forum selection clause, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us.

Our Amended and Restated Certificate of Incorporation provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of us, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees of us to us or our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law or our Amended and Restated Certificate of Incorporation or By-laws, or (iv) any action asserting a claim against us governed by the internal affairs doctrine.

This exclusive forum provision will not apply to claims under the Securities Exchange Act of 1934 but will apply to other state and federal law claims including actions arising under the Securities Act of 1933 (although our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder). Section 22 of the Securities Act of 1933, however, creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act of 1933 or the rules and regulations thereunder. Accordingly, there is uncertainty as to whether a court would enforce such a forum selection provision as written in connection with claims arising under the Securities Act of 1933. This forum selection provision in our Amended and Restated Certificate of Incorporation may limit our stockholders' ability to obtain a favorable judicial forum for disputes with us. It is also possible that a court could rule that such a provision is inapplicable or unenforceable.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompanying base prospectus contain, and the documents incorporated by reference herein include, “forward-looking statements” within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements.

Forward-looking statements include, but are not limited to, statements about reduction in the size or quantity of customer orders; change in demand for our products due to industry conditions; our ability to maintain sufficient liquidity; changes in manufacturing operations; volatility in manufacturing costs; delays in shipments of products; disruptions in the supply chain; change in the rate of design wins or the rate of customer acceptance of new products; our reliance on a small number of customers for a substantial portion of our revenues; pricing pressure; a decline in demand for our customers’ products or their rate of deployment of their products; general conditions in the internet data center, CATV, telecom and FTTH; changes in the world economy (particularly in the United States and China); the negative effects of seasonality; expectations regarding the acquisition or divestiture of assets and business; and realization of deferred tax assets.

In some cases, you can identify forward-looking statement by terms such as “believe,” “may,” “estimate,” “continue,” “anticipate,” “intend,” “should,” “could,” “would,” “target,” “seek,” “aim,” “believe,” “predicts,” “think,” “objectives,” “optimistic,” “new,” “goal,” “strategy,” “potential,” “is likely,” “will,” “expect,” “plan” “project,” “permit” and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events, are based on assumptions and are subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in greater detail under the heading “Risk Factors” in our SEC filings, and under the caption “Risk Factors” in this prospectus supplement. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement. You should read this prospectus supplement, the registration statement of which the base prospectus is a part, and the exhibits and documents incorporated by reference herein and therein completely and with the understanding that our actual future results may be materially different from those described in forward-looking statements. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

You should assume that information contained in or incorporated by reference into this prospectus supplement is accurate only as of the date on the front cover of this prospectus supplement or the date of the document incorporated by reference, as applicable. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments.

USE OF PROCEEDS

The amount of proceeds from this offering will depend upon the number of shares of our common stock sold and the market price at which they are sold. There can be no assurance that we will be able to sell any shares under or fully utilize the sales agreement with Raymond James as a source of financing.

We intend to use the net proceeds from this offering for general corporate purposes, which may include, among other things, debt repayment, working capital, and capital expenditures. We may also use such proceeds to fund acquisitions of businesses, technologies or product lines that complement our current business; however, we have no present plans, agreements or commitments with respect to any potential acquisition.

Investors are cautioned, however, that expenditures may vary substantially from these uses. Investors will be relying on the judgment of our management, who will have broad discretion regarding the application of the proceeds of this offering. The amounts and timing of our actual expenditures will depend upon numerous factors, including the amount of cash generated by our operations, competition and other operational factors. We may find it necessary or advisable to use portions of the proceeds from this offering for other purposes.

Pending other uses, we intend to invest the proceeds in investment-grade, interest-bearing securities such as money market funds, certificates of deposit, or direct or guaranteed obligations of the U.S. government, or hold as cash. We cannot predict whether the proceeds invested will yield a favorable, or any, return.

DILUTION

If you purchase shares of our common stock in this offering, your interest will be diluted to the extent of the difference between the public offering price per share and the net tangible book value per share of our common stock after this offering. We calculate net tangible book value per share by dividing our net tangible assets (tangible assets less total liabilities) by the number of shares of our common stock issued and outstanding as of September 30, 2024.

Our historical net tangible book value at September 30, 2024 was \$208,423,411 or approximately \$4.65 per share of our common stock. After giving effect to the sale of our common stock in the aggregate amount of approximately \$55,000,000 in this offering, at an assumed offering price of \$16.40 per share, the last reported sale price of our common stock on The Nasdaq Global Market on November 4, 2024, and after deducting estimated offering expenses and commissions payable by us, our adjusted net tangible book value as of September 30, 2024 would have been approximately \$262,323,411, or approximately \$5.42 per share of our common stock. This represents an immediate increase in the net tangible book value of \$.77 per share of our common stock to our existing stockholders and an immediate dilution in net tangible book value of approximately \$10.98 per share of our common stock to new investors. The following table illustrates per share dilution:

Assumed public offering price per share	\$ 16.40
Net tangible book value per share as of September 30, 2024	\$ 4.65
Increase in net tangible book value per share attributable to this offering	\$.77
Adjusted net tangible book value per share as of September 30, 2024, after giving effect to this offering	\$ 5.42
Dilution per share to new investors purchasing shares in this offering	\$ 10.98

The table above assumes for illustrative purposes that an aggregate of 3,353,659 shares of our common stock are sold at a price of \$16.40 per share, the last reported sale price of our common stock on The Nasdaq Global Market on November 4, 2024, for aggregate gross proceeds of approximately \$55,000,000. The shares sold in this offering, if any, will be sold from time to time at various prices.

The foregoing discussion and table do not take into account further dilution to new investors that could occur upon the exercise of outstanding stock options or warrants having a per share exercise price less than the per share offering price to the public in this offering. 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 or equity-linked securities, the issuance of these securities could result in further dilution to our stockholders.

The table and discussion above are based on 45,078,203 shares outstanding as of November 4, 2024 and excludes, as of that date, the following:

- restricted stock units representing a total of 2,319,059 shares of common stock issuable upon vesting;
- performance stock units representing a total of 1,447,284 shares of common stock issuable upon the satisfaction of performance-based vesting conditions that were outstanding as of November 4, 2024, for which the performance-based vesting conditions were not yet satisfied as of November 4, 2024; and
- any shares issuable upon conversion of our 5.25% Convertible Senior Notes due 2026.

PLAN OF DISTRIBUTION

We have entered into a sales agreement with Raymond James under which we may issue and sell shares of our common stock from time to time through Raymond James acting as agent. We may issue and sell shares through this prospectus supplement having an aggregate gross sales price of up to \$55,000,000. The following summary of the material provisions of the sales agreement does not purport to be a complete statement of its terms and conditions. The sales agreement has been filed as an exhibit to our Current Report on Form 8-K dated as of the date hereof.

Upon delivery of a placement notice and subject to the terms and conditions of the sales agreement, Raymond James may sell our common stock by any method permitted by law deemed to be an “at-the-market” offering as defined in Rule 415 promulgated under the Securities Act, including sales made directly on The Nasdaq Global Market, on any other existing trading market for our common stock or through a market maker. Raymond James, with the agreement of the Company may also sell certain of our common stock by any other method permitted by law, including in privately negotiated transactions. We may instruct Raymond James not to sell common stock if the sales cannot be effected at or above the price designated by us from time to time. We or Raymond James may suspend the offering of common stock upon notice and subject to other conditions.

Except as otherwise described in the sales agreement, we will pay Raymond James commissions, in cash, for its services in acting as agent in the sale of our common stock. Raymond James will be entitled to compensation at a commission rate of up to 2.0% of the gross sales price per share sold. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. We have also agreed to reimburse Raymond James for certain specified expenses in connection with the registration of shares of our common stock under state blue sky laws and any filing with, and clearance of this offering by, the Financial Industry Regulatory Authority Inc., or FINRA, not to exceed \$10,000 in the aggregate, and any associated application fees incurred. Additionally, if the sales agreement is terminated under certain circumstances and we fail to sell a minimum amount of common stock as set forth in the sales agreement, then we have agreed to reimburse Raymond James for reasonable out-of-pocket expenses, including the reasonable fees and disbursements of counsel incurred by Raymond James, up to a maximum of \$30,000 in the aggregate. We estimate that the total expenses for the offering, excluding compensation and reimbursements payable to Raymond James under the terms of the sales agreement, will be approximately \$150,000.

Settlement for sales of common stock will occur on the first business day following the date on which any sales are made, or on some other date that is agreed upon by us and Raymond James in connection with a particular transaction, in return for payment of the net proceeds to us. Sales of our common stock as contemplated in this prospectus supplement will be settled through the facilities of The Depository Trust Company or by such other means as we and Raymond James may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

Raymond James will use its commercially reasonable efforts, consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of The Nasdaq Global Market, to sell the shares of common stock under the terms and subject to the conditions set forth in the sales agreement. In connection with the sale of the common stock on our behalf, Raymond James may be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation of Raymond James may be deemed to be underwriting commissions or discounts. We have agreed to provide indemnification and contribution to Raymond James against certain civil liabilities, including liabilities under the Securities Act.

The offering of our common stock pursuant to the sales agreement will terminate upon the earlier of (i) the sale of all shares of our common stock subject to the sales agreement or (ii) termination of the sales agreement as permitted therein. We and Raymond James may each terminate the sales agreement at any time.

Any portion of the \$55,000,000 included in this prospectus supplement that is not previously sold or included in an active placement notice pursuant to the sales agreement is available for sale in other offerings pursuant to the base prospectus.

Raymond James and its affiliates may in the future provide various investment banking, commercial banking and other financial services for us and our affiliates, for which services they may in the future receive customary fees. To the extent required by Regulation M, Raymond James will not engage in any market making activities involving our common stock while the offering is ongoing under this prospectus supplement.

This prospectus supplement and the base prospectus in electronic format may be made available on a website maintained by Raymond James, and Raymond James may distribute this prospectus supplement and the accompanying base prospectus electronically.

LEGAL MATTERS

The validity of the common stock offered by this prospectus supplement will be passed upon by Haynes and Boone, LLP, Houston, Texas. Raymond James is being represented in connection with this offering by Mayer Brown LLP, New York, New York.

EXPERTS

The audited financial statements and management's assessment of the effectiveness of internal control over financial reporting incorporated by reference in this prospectus and elsewhere in the registration statement have been so incorporated by reference in reliance upon the reports of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing.

WHERE TO LEARN MORE ABOUT US

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the securities being offered under this prospectus. This prospectus supplement and the base prospectus, which forms part of the registration statement, do not contain all of the information in the registration statement. We have omitted certain parts of the registration statement, as permitted by the rules and regulations of the SEC. For further information regarding us and our securities, please see the registration statement and our other filings with the SEC, including our annual, quarterly, and current reports and any proxy statements. Our public filings with the SEC are available to the public on the SEC's Internet website at <http://www.sec.gov>.

We furnish holders of our common stock with annual reports containing audited financial statements prepared in accordance with accounting principles generally accepted in the United States following the end of each fiscal year. We file reports and other information with the SEC pursuant to the reporting requirements of the Exchange Act. In addition, the reports, proxy statements and other information that we file with the SEC are available to you free of charge through the Investor Relations page of our website, <http://ao-inc.com/>, as soon as reasonably practicable after they have been electronically filed with, or furnished to, the SEC. We have included our website address as a textual reference and do not intend it as an active link to our website. The contents of our website are not part of this prospectus, and you should not consider the contents of our website in making an investment decision with respect to our securities.

Descriptions in this prospectus of documents are intended to be summaries of the material, relevant portions of those documents, but may not be complete descriptions of those documents. For complete copies of those documents, please refer to the exhibits to the registration statement and other documents filed by us with the SEC.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” into this prospectus supplement the documents we file with them, which means that we can disclose important information to you by referring you to those documents. The information that we incorporate by reference into this prospectus supplement is considered to be part of this prospectus supplement, and information that we file later with the SEC automatically updates and supersedes any information in this prospectus supplement. We have filed the following documents with the SEC. These documents are incorporated by reference as of their respective dates of filing, as well as any future documents (excluding information furnished pursuant to Items 2.02 and 7.01 of Form 8-K) we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, subsequent to the date of this prospectus supplement and prior to the termination of the offering:

1. Our [Annual Report on Form 10-K for the fiscal year ended December 31, 2023, as filed with the SEC on February 23, 2024](#);
2. Our Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2024, June 30, 2024, and September 30, 2024, as filed with the SEC on [May 9, 2024](#), [August 6, 2024](#) and [November 7, 2024](#), respectively;
3. Our Current Reports on Form 8-K as filed with the SEC on [March 13, 2024](#), [May 30, 2024](#), [August 6, 2024](#), and [October 10, 2024](#); and
4. The description of our common stock contained in the “Description of Company’s Common Stock” filed as [Exhibit 4.7](#) to our Annual Report on Form 10-K for the fiscal year ended December 31, 2023, filed with the SEC on February 23, 2024, including any amendment or reports filed for the purpose of updating such description.

In addition, all documents subsequently filed by us pursuant to Section 13(a), 13(c), 14 and 15(d) of the Exchange Act after the date of this registration statement and prior to the filing of a post-effective amendment that indicates that all securities offered have been sold or that deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference into this registration statement and to be a part hereof from the date of filing of such documents. Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this registration statement to the extent that a statement contained herein or in any other subsequently filed document that is incorporated by reference herein modifies or supersedes such earlier statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

Nothing in this registration statement shall be deemed to incorporate information furnished but not filed with the SEC pursuant to Item 2.02 or Item 7.01 of Form 8-K.

We will provide, without charge, upon written or oral request of any person to whom a copy of this prospectus is delivered, a copy of any or all of the foregoing documents and information that has been or may be incorporated in this prospectus by reference, other than exhibits to such documents. Requests for such documents and information should be directed to:

Applied Optoelectronics, Inc.
Attn: Dr. Stefan Murry, Chief Financial Officer
13139 Jess Pirtle Blvd.
Sugar Land, TX 77478
(281) 295-1800

You may also access the documents incorporated by reference in this prospectus supplement through our website at <http://ao-inc.com/>. Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus or the registration statement of which it forms a part.

Prospectus

**APPLIED OPTOELECTRONICS, INC.****\$185,000,000****Common Stock
Preferred Stock
Warrants
Units**

We may offer and sell any combination of the securities listed above from time to time, in one or more classes or series and in amounts, at prices and on terms that we will determine at the time of the offering. The aggregate initial offering price of the securities that we will offer will not exceed \$185,000,000.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a supplement to this prospectus that contains specific information about the offering including the price at which we are offering securities to the public. The prospectus supplement may also add, update or change information contained in this prospectus. You should carefully read this prospectus, all prospectus supplements and all other documents incorporated by reference in this prospectus before you invest in our securities.

We may offer and sell these securities in the same offering or in separate offerings through underwriters, dealers or agents or directly to purchasers, on a continuous or delayed basis. The prospectus supplement for each offering will describe in detail the plan of distribution for that offering and will set forth the names of any underwriters, dealers or agents involved in the offering and any applicable fees, commissions or discount arrangements. See “Plan of Distribution.”

We encourage you to carefully review and consider this prospectus and any prospectus supplement before investing in our securities. We also encourage you to read the documents to which we have referred you in the “Where To Learn More About Us” section of this prospectus for information on us and for our financial statements.

Our common stock is quoted on NASDAQ Global Market under the symbol “AAOI.” On March 9, 2023, the closing price for our common stock, as reported on the NASDAQ Global Market, was \$2.81 per share.

THIS PROSPECTUS MAY NOT BE USED TO SELL SECURITIES UNLESS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT DESCRIBING THE METHOD AND TERMS OF THE OFFERING OF SUCH SECURITIES.

INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. RISKS ASSOCIATED WITH AN INVESTMENT IN OUR SECURITIES WILL BE DESCRIBED IN THE APPLICABLE PROSPECTUS SUPPLEMENT AND OUR PERIODIC AND OTHER REPORTS WE FILE WITH THE SECURITIES AND EXCHANGE COMMISSION, AS DESCRIBED IN “RISK FACTORS” ON PAGE 5. YOU SHOULD CAREFULLY CONSIDER THOSE RISK FACTORS BEFORE INVESTING.

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

The date of this prospectus is March 21, 2023.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the “SEC”) utilizing a “shelf” registration process. Under the shelf registration process, we may offer and sell either individually or in combination with other securities any of the securities described in this prospectus, from time to time, in one or more offerings, at prices and on terms to be determined at or prior to the applicable offering. The aggregate initial offering price of all securities sold under this prospectus will not exceed \$185,000,000.

This prospectus only provides you with a general description of the securities we may offer. Each time we sell securities described in the prospectus, we will provide a supplement to this prospectus that will contain specific information about the terms of that offering.

THIS PROSPECTUS MAY NOT BE USED TO OFFER AND SELL SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

The prospectus supplement may also add, update or change information contained in this prospectus and, accordingly to the extent inconsistent, information in this prospectus is superseded by the information in the prospectus supplement. You should read carefully both this prospectus and any accompanying prospectus supplement or other offering materials, together with the additional information described under “Where To Learn More About Us” beginning on page [18](#) of this prospectus and “Incorporation of Certain Documents By Reference,” beginning on page [19](#) of this prospectus.

You should rely only on the information contained in or incorporated by reference into this prospectus and any prospectus supplement or issuer free writing prospectus relating to a particular offering. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you must not rely on it as having been authorized by us. Neither this prospectus nor any prospectus supplement nor any related issuer free writing prospectus shall constitute an offer to sell or a solicitation of an offer to buy offered securities in any jurisdiction in which it is unlawful for such person to make such an offering or solicitation.

We may sell the securities directly to or through underwriters, dealers or agents. We, and our underwriters or agents, reserve the right to accept or reject all or part of any proposed purchase of securities. If we do offer securities through underwriters, dealers or agents, we will include in any applicable prospectus supplement:

- the names of those underwriters, dealers or agents;
- applicable fees, discounts, and commissions to be paid to them;
- details regarding over-allotment options, if any; and
- the net proceeds to us.

This prospectus and any accompanying prospectus supplement or other offering materials do not contain all of the information included in the registration statement as permitted by the rules and regulations of the SEC. For further information, we refer you to the registration statement on Form S-3, including its exhibits. We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and, therefore, file reports and other information with the SEC. Statements contained in this prospectus and any accompanying prospectus supplement or other offering materials about the provisions or contents of any agreement or other document are only summaries. If the SEC rules require that any agreement or document be filed as an exhibit to the registration statement, then you should refer to that agreement or document for its complete contents.

You should not assume that the information in this prospectus, any accompanying prospectus supplement or any other offering materials is accurate as of any date other than the date on the front of each document, regardless of the time of delivery of this prospectus, any accompanying prospectus supplement or any sale of securities. Our business, financial condition, results of operations and prospects may have changed since that date.

PROSPECTUS SUMMARY

The following summary highlights selected information contained elsewhere in this prospectus or incorporated by reference into this prospectus. It does not contain all the information you should consider before investing in our securities. You should read carefully this prospectus, any accompanying prospectus supplement and any other offering materials, together with the additional information described under "Where To Learn More About Us" beginning on page 18 of this prospectus and "Incorporation of Certain Documents By Reference," beginning on page 19 of this prospectus.

As used in this prospectus, the terms "we," "us," "our," and "Company" refer to Applied Optoelectronics, Inc.

The Company

We are a leading, vertically integrated provider of fiber-optic networking products. We target four networking end-markets: CATV, internet data centers, telecom and FTTH. We design and manufacture a range of optical communications products at varying levels of integration, from components, subassemblies and modules to complete turn-key equipment.

In designing products for our customers, we typically begin with the fundamental building blocks of lasers and laser components. From these foundational products, we design and manufacture a wide range of products to meet our customers' needs and specifications, and such products differ from each other by their end market, intended use and level of integration. We are primarily focused on the higher-performance segments within the CATV, internet data center, telecom and FTTH markets which increasingly demand faster connectivity and innovation. Our vertically integrated manufacturing model provides us several advantages, including rapid product development, fast response times to customer requests and control over product quality and manufacturing costs.

The four end markets we target are all driven by significant bandwidth demand fueled by the growth of network-connected devices, video traffic, cloud computing and online social networking. Within the internet data center market, we benefit from the increasing use of higher-capacity optical networking technology as a replacement for copper cables, particularly as speeds reach 100 Gbps and above, as well as the movement to open internet data center architectures and the increasing use of in-house equipment design among leading internet companies. Within the CATV market, we benefit from a number of ongoing trends including the build-out of CATV infrastructure in the US and other countries, the move to higher bandwidth networks among CATV service providers and the outsourcing of system design among CATV networking equipment companies. In the FTTH market, we benefit from continuing PON deployments and system upgrades among telecom service providers. In the telecom market, we benefit from deployment of new high-speed fiber-optic networks by telecom network operators, including 5G networks.

Our vertically integrated manufacturing model provides us several advantages, including rapid product development, fast response times to customer requests and greater control over product quality and manufacturing costs. We design, manufacture and integrate our own analog and digital lasers using a proprietary Molecular Beam Epitaxy, or MBE, and Metal Organic Chemical Vapor Deposition (MOCVD) fabrication process, which we believe is unique in our industry. We manufacture the majority of the laser chips and optical components that are used in our products. The lasers we manufacture are tested extensively to enable reliable operation over time and our devices are often highly tolerant of changes in temperature and humidity, making them well-suited to the CATV, FTTH and 5G telecom markets where networking equipment is often installed outdoors.

We have three manufacturing sites: Sugar Land, Texas, Ningbo, China and Taipei, Taiwan. Our research and development functions are generally partnered with our manufacturing locations, and we have an additional research and development facility in Duluth, Georgia. In our Sugar Land facility, we manufacture laser chips (utilizing our MBE and MOCVD processes), subassemblies and components. The subassemblies are used in the manufacture of components by our other manufacturing facilities or sold to third parties as modules. We manufacture our laser chips only within our Sugar Land facility, where our laser design team is located. In our Taiwan location, we manufacture optical components, such as our butterfly lasers, which incorporate laser chips, subassemblies and components manufactured within our Sugar Land facility.

Additionally, in our Taiwan location, we manufacture transceivers for the internet data center, telecom, FTTH and other markets. In our China facility, we take advantage of lower labor costs and manufacture certain more labor intensive components and optical equipment systems, such as optical subassemblies and transceivers for the CATV transmitters (at the headend), CATV outdoor equipment (at the node) and internet data center market. Each manufacturing facility conducts testing on the components, modules or subsystems it manufactures and each facility is certified to ISO 9001:2015. Our facilities in Ningbo, China, Taipei, Taiwan, and Sugar Land, Texas are all certified to ISO 14001:2015.

Our business depends on winning competitive bid selection processes to develop components, systems and equipment for use in our customers' products. These selection processes are typically lengthy, and as a result our sales cycles will vary based on the level of customization required, market served, whether the design win is with an existing or new customer and whether our solution being designed in our customers' product is our first generation or subsequent generation product. We do not have any long-term purchase commitments (in excess of one year) with any of our customers, most of whom purchase our products on a purchase order basis. However, once one of our solutions is incorporated into a customer's design, we believe that our solution is likely to continue to be purchased for that design throughout that product's life cycle because of the time and expense associated with redesigning the product or substituting an alternative solution.

Corporate Information

We were incorporated in the State of Texas in 1997. In March 2013, we converted into a Delaware corporation. Prime World International Holdings, Ltd. ("Prime World") is a wholly-owned subsidiary of the Company incorporated in the British Virgin Islands on January 13, 2006. Prime World is the parent company of Global Technology, Inc. ("Global"). Global was established in June 2002 in the People's Republic of China ("PRC") and was acquired by Prime World on March 30, 2006. Prime World also operates a division in Taiwan, which is qualified to do business in Taiwan and primarily manufactures transceivers and performs research and development activities.

Our principal executive offices are located at 13139 Jess Pirtle Blvd., Sugar Land, TX 77478, and our telephone number is (281) 295-1800. Our website address is www.ao-inc.com. The information on our website is not incorporated by reference into this prospectus and does not constitute a part of this prospectus.

The Securities We May Offer

We may offer up to \$185,000,000 of common stock, preferred stock, warrants and units in one or more offerings and in any combination. This prospectus provides you with a general description of the securities we may offer. This prospectus may not be used to offer or sell securities unless accompanied by a prospectus supplement, which will describe the specific amounts, prices and terms of the securities.

Common Stock

We may issue shares of our common stock from time to time. Holders of our common stock are entitled to one vote for each share of common stock held of record for the election of directors and on all matters submitted to a vote of stockholders. Holders of our common stock are also entitled to receive dividends ratably, if any, as may be declared by our board of directors out of legally available funds, subject to any preferential dividend rights of any preferred stock then outstanding. Upon our dissolution, liquidation or winding up, holders of our common stock are entitled to share ratably in our net assets legally available after the payment of all our debts and other liabilities, subject to the preferential rights of any preferred stock then outstanding. Holders of our common stock have no subscription, preemptive, redemption or conversion rights. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future. Except with respect to the election of directors (which is determined by our stockholders by a plurality of the votes cast by the stockholders entitled to vote on the election) and as described below in "Provisions of our Certificate of Incorporation and Bylaws and Delaware Anti Takeover Law," a majority vote of common stockholders is generally required to take action under our amended and restated certificate of incorporation and amended and restated bylaws.

Preferred Stock

We may issue shares of our preferred stock from time to time, in one or more series. Our board of directors is authorized, without action by the stockholders, to designate and issue up to an aggregate of 5,000,000 shares of preferred stock in one or more series. The board of directors can fix the rights, preferences and privileges of the shares of each series and any of its qualifications, limitations or restrictions. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of common stock. The issuance of preferred stock, while providing flexibility in connection with possible future financings and acquisitions and other corporate purposes could, under certain circumstances, have the effect of delaying, deferring or preventing a change in control of our company and might harm the market price of our common stock.

If we sell any series of preferred stock under this prospectus and applicable prospectus supplements, we will fix the rights, preferences, privileges, and restrictions of the preferred stock of such series in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of the related series of preferred stock. We urge you to read the applicable prospectus supplement related to the series of preferred stock being offered, as well as the complete certificate of designation that contains the terms of the applicable series of preferred stock.

Warrants

We may issue warrants for the purchase of common stock or preferred stock in one or more series. We may issue warrants independently or together with common stock or preferred stock, and the warrants may be attached to or separate from these securities. We will evidence each series of warrants by warrant certificates that we will issue under a separate agreement. We may enter into warrant agreements with a bank or trust company that we select to be our warrant agent. We will indicate the name and address of the warrant agent in the applicable prospectus supplement relating to a particular series of warrants.

In this prospectus, we have summarized certain general features of the warrants. We urge you, however, to read the applicable prospectus supplement related to the particular series of warrants being offered, as well as the warrant agreements and warrant certificates that contain the terms of the warrants. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant agreement or warrant certificate containing the terms of the warrants we are offering before the issuance of the warrants.

In this prospectus, we have summarized certain general features of the warrants. We urge you, however, to read the applicable prospectus supplement related to the particular series of warrants being offered, as well as the warrant agreements and warrant certificates that contain the terms of the warrants. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant agreement or warrant certificate containing the terms of the warrants we are offering before the issuance of the warrants.

Units

We may issue units consisting of common stock, preferred stock and/or warrants for the purchase of common stock or preferred stock in one or more series. In this prospectus, we have summarized certain general features of the units. We urge you, however, to read the applicable prospectus supplement related to the series of units being offered, as well as the unit agreements that contain the terms of the units. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference reports that we file with the SEC, the form of unit agreement and any supplemental agreements that describe the terms of the series of units we are offering before the issuance of the related series of units.

RISK FACTORS

An investment in our securities involves a high degree of risk. The prospectus supplement applicable to each offering of our securities will contain a discussion of the risks applicable to an investment in our securities. Before deciding whether to invest in our securities, you should carefully consider the specific factors discussed under the heading “Risk Factors” in the applicable prospectus supplement, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under Item 1A, “Risk Factors,” in [our Annual Report on Form 10-K, for the fiscal year ended December 31, 2022, filed with the SEC on February 27, 2023](#), and our Form 10-Qs, as amended, for the fiscal periods ended March 31, 2022, June 30, 2022, and September 30, 2022, filed with the SEC on [May 5, 2022](#), [August 4, 2022](#), and [November 3, 2022](#), respectively, all of which are incorporated herein by reference, as updated or superseded by the risks and uncertainties described under similar headings in the other documents that are filed after the date hereof and incorporated by reference into this prospectus and any prospectus supplement related to a particular offering. 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 operations. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks actually occurs, our business, business prospects, financial condition or results of operations could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. Please also read carefully the section below entitled “Cautionary Note Regarding Forward-Looking Statements.”

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and each prospectus supplement contains, and the documents incorporated by reference herein include “forward-looking statements” within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to, statements about reduction in the size or quantity of customer orders; change in demand for the Company’s products due to industry conditions; our ability to maintain sufficient liquidity; changes in manufacturing operations; volatility in manufacturing costs; delays in shipments of products; disruptions in the supply chain; change in the rate of design wins or the rate of customer acceptance of new products; the Company’s reliance on a small number of customers for a substantial portion of its revenues; pricing pressure; a decline in demand for our customers’ products or their rate of deployment of their products; general conditions in the internet data center, cable television or CATV, telecommunications or telecom and fiber-to-the-home or FTTH; changes in the world economy (particularly in the United States and China); the negative effects of seasonality; the anticipated impact to our business operations, customer demand and supply chain due to the recent global pandemic of a novel strain of the coronavirus (COVID-19); the outcome of our divestiture activities; realization of deferred tax assets.

In some cases, you can identify forward-looking statement by terms such as “believe,” “may,” “estimate,” “continue,” “anticipate,” “intend,” “should,” “could,” “would,” “target,” “seek,” “aim,” “believe,” “predicts,” “think,” “objectives,” “optimistic,” “new,” “goal,” “strategy,” “potential,” “is likely,” “will,” “expect,” “plan,” “project,” “permit” and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events, are based on assumptions and are subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in greater detail under the heading “Risk Factors” in our SEC filings, and under the caption “Risk Factors” in this prospectus or any prospectus supplement. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement. You should read this prospectus, the registration statement of which this prospectus is a part, any prospectus supplement and the exhibits and documents incorporated by reference herein and therein completely and with the understanding that our actual future results may be materially different from those described in forward-looking statements. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

You should assume that information contained in or incorporated by reference into this prospectus is accurate only as of the date on the front cover of this prospectus or the date of the document incorporated by reference, as applicable. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments.

USE OF PROCEEDS

We cannot guarantee that we will receive any proceeds in connection with this offering because we may be unable or choose not to issue and sell any securities covered by this prospectus.

Unless otherwise set forth in the applicable prospectus supplement or free writing prospectus, we intend to use the net proceeds from any sales of securities by us under this prospectus and any accompanying prospectus supplement for general corporate purposes, which may include, among other things, debt repayment, working capital, and capital expenditures.

We may also use such proceeds to fund acquisitions of businesses, technologies or product lines that complement our current business. We may set forth additional information on the use of net proceeds from the sale of the securities we offer under this prospectus in a prospectus supplement related to a specific offering.

Investors are cautioned, however, that expenditures may vary substantially from these uses. Investors will be relying on the judgment of our management, who will have broad discretion regarding the application of the proceeds of this offering. The amounts and timing of our actual expenditures will depend upon numerous factors, including the amount of cash generated by our operations, competition and other operational factors. We may find it necessary or advisable to use portions of the proceeds from this offering for other purposes.

From time to time, we evaluate these and other factors and we anticipate continuing to make such evaluations to determine if the existing allocation of resources, including the proceeds of sale of securities offered by us, is being optimized. Circumstances that may give rise to a change in the use of proceeds include:

- the need or desire on our part to accelerate, increase or eliminate existing initiatives due to, among other things, changing market;
- conditions and competitive developments;
- the availability of other sources of cash including cash flow from operations and alternative financing arrangements, if any;
- our ability to negotiate definitive agreements with acquisition candidates; and
- the availability and terms of debt financing to fund a portion of the purchase price(s) for potential acquisitions.

Pending other uses, we intend to invest the proceeds to us in investment-grade, interest-bearing securities such as money market funds, certificates of deposit, or direct or guaranteed obligations of the U.S. government, or hold as cash. We cannot predict whether the proceeds invested will yield a favorable, or any, return.

DESCRIPTION OF SECURITIES TO BE OFFERED

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplements, summarize the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. If we so indicate in the applicable prospectus supplement, the terms of the securities may differ from the terms we have summarized below. We will also include information in the prospectus supplement, where applicable, about material U.S. federal income tax considerations relating to the securities, and the securities exchange, if any, on which the securities will be listed.

We may sell from time to time, in one or more primary offerings, our common stock, preferred stock, warrants and units, or any combination of the foregoing.

In this prospectus, we refer to the common stock, preferred stock, warrants, units or any combination of the foregoing securities to be sold by us in a primary offering collectively as “securities.” The total dollar amount of all securities that we may issue under this prospectus will not exceed \$185,000,000.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

The following is a summary of the material provisions of the securities as set forth in our certificate of incorporation, as amended to date, and bylaws, as amended to date. For additional detail about our capital stock, please refer to our amended and restated certificate of incorporation and amended and restated bylaws, as well as applicable Delaware law.

Description of Capital Stock

The following description of our capital stock summarizes the material terms and provisions of the capital stock that we may offer under this prospectus, is not complete and is qualified in its entirety by reference to our certificate of incorporation and bylaws, as may be amended from time to time, which have been filed with the SEC as exhibits to the registration statement and each of which is incorporated by reference in this prospectus. In addition, you should be aware that the summary below does not give full effect to the terms of the provisions of statutory or common law.

General

While the terms we have summarized below will apply generally to any future common stock or preferred stock that we may offer, we will describe the specific terms of any series of preferred stock in more detail in the applicable prospectus supplement. If we so indicate in a prospectus supplement, the terms of any preferred stock we offer under that prospectus supplement may differ from the terms we describe below.

Our authorized capital stock consists of 45,000,000 shares of common stock, par value \$0.001 per share, and 5,000,000 shares of undesignated preferred stock, par value \$0.001 per share. As of March 7, 2023, there were 29,052,817 shares of common stock outstanding and no shares of preferred stock outstanding.

Common Stock

Holders of our common stock are entitled to one vote for each share of common stock held of record for the election of directors and on all matters submitted to a vote of stockholders. Holders of our common stock are also entitled to receive dividends ratably, if any, as may be declared by our board of directors out of legally available funds, subject to any preferential dividend rights of any preferred stock then outstanding. Upon our dissolution, liquidation or winding up, holders of our common stock are entitled to share ratably in our net assets legally available after the payment of all our debts and other liabilities, subject to the preferential rights of any preferred stock then outstanding. Holders of our common stock have no subscription, preemptive, redemption or conversion rights. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future. Except with respect to the election of directors (which is determined by our stockholders by a plurality of the votes cast by the stockholders entitled to vote on the election) and as described below in “Provisions of our Certificate of Incorporation and Bylaws and Delaware Anti-Takeover Law,” a majority vote of common stockholders is generally required to take action under our amended and restated certificate of incorporation and amended and restated bylaws.

Listing

Our common stock is listed on the NASDAQ Global Market under the symbol “AAOI.” On March 9, 2023 the closing price of our common stock, as reported on the NASDAQ Global Market, was \$2.81 per share. As of the close of business on March 7, 2023, there were approximately 36 stockholders of record of our common stock.

Transfer Agent and Registrar

Continental Stock Transfer & Trust Company acts as the transfer agent and registrar for our common stock. The transfer agent and registrar's address is 1 State Street, 30th Floor, New York, New York 10004.

Preferred Stock

Our board of directors is authorized, without action by the stockholders, to designate and issue up to an aggregate of 5,000,000 shares of preferred stock in one or more series. The board of directors can fix the rights, preferences and privileges of the shares of each series and any of its qualifications, limitations or restrictions. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of common stock. The issuance of preferred stock, while providing flexibility in connection with possible future financings and acquisitions and other corporate purposes could, under certain circumstances, have the effect of delaying, deferring or preventing a change in control of our company and might harm the market price of our common stock.

Our board of directors will make any determination to issue such shares based on its judgment as to our company's best interests and the best interests of our stockholders.

We will incorporate by reference as an exhibit to the registration statement, which includes this prospectus, the form of any certificate of designations that describes the terms of the series of preferred stock we are offering. This description and the applicable prospectus supplement will include:

- the title and stated value;
- the number of shares authorized;
- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date, and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price, or how it will be calculated, and the conversion period;
- voting rights, if any, of the preferred stock;
- preemptive rights, if any;
- restrictions on transfer, sale or other assignment, if any;
- whether interests in the preferred stock will be represented by depositary shares;
- a discussion of any material United States federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and

- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

When we issue shares of preferred stock under this prospectus, the shares will fully be paid and nonassessable and will not have, or be subject to, any preemptive or similar rights.

Registration Rights

As of the date hereof, no holder of our common stock is eligible to exercise any contractual rights to require us to register any shares of such holder under the Securities Act.

Provisions of Our Certificate of Incorporation and Bylaws and Delaware Anti-Takeover Law

Our amended and restated certificate of incorporation and amended and restated bylaws include a number of provisions that may have the effect of encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

Board composition and filling vacancies

In accordance with our amended and restated certificate of incorporation, our board of directors is divided into three classes serving staggered three year terms, with one class being elected each year. Our amended and restated certificate of incorporation also provides that directors may be removed only for cause and then only by the affirmative vote of the holders of 66 $\frac{2}{3}$ % or more of the shares then entitled to vote at an election of directors. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board of directors, may only be filled by the affirmative vote of a majority of our directors then in office even if less than a quorum.

No written consent of stockholders

Our amended and restated certificate of incorporation provides that all stockholder actions are required to be taken by a vote of the stockholders at an annual or special meeting, and that stockholders may not take any action by written consent in lieu of a meeting.

Meetings of stockholders

Our amended and restated bylaws provide that only a majority of the members of our board of directors then in office, the Chairman of the board of directors or the Chief Executive Officer may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our amended and restated bylaws limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

Advance notice requirements

Our amended and restated bylaws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary before the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days or more than 120 days before the first anniversary date of the annual meeting for the preceding year. The notice must contain certain information specified in our amended and restated bylaws.

Amendment to bylaws and certificate of incorporation

As required by the Delaware General Corporation Law (the “DGCL”), any amendment of our amended and restated certificate of incorporation must first be approved by a majority of our board of directors and, if required by law or our amended and restated certificate of incorporation, thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment, and a majority of the

outstanding shares of each class entitled to vote thereon as a class, except that the amendment of the provisions relating to stockholder action, directors, limitation of liability and the amendment of our amended and restated bylaws and amended and restated certificate of incorporation must be approved by not less than 66 $\frac{2}{3}$ % of the outstanding shares entitled to vote on the amendment, and not less than 66 $\frac{2}{3}$ % of the outstanding shares of each class entitled to vote thereon as a class. Our bylaws may be amended by the affirmative vote of a majority vote of the directors then in office, subject to any limitations set forth in the bylaws; and may also be amended by the affirmative vote of at least 66 $\frac{2}{3}$ % of the outstanding shares entitled to vote on the amendment, or, if the board of directors recommends that the stockholders approve the amendment, by the affirmative vote of the majority of the outstanding shares entitled to vote on the amendment, in each case voting together as a single class.

Blank check preferred stock

Our amended and restated certificate of incorporation authorizes 5,000,000 shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of us or our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our amended and restated certificate of incorporation grants our board of directors' broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

Choice of Forum

Our amended and restated certificate of incorporation provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the Company, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the Company to the Company or the Company's stockholders, (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law or our amended and restated certificate of incorporation or by-laws, or (iv) any action asserting a claim against the Company governed by the internal affairs doctrine. This exclusive forum provision will not apply to claims under the Securities Exchange Act of 1934 but will apply to other state and federal law claims including actions arising under the Securities Act of 1933 (although our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder). Section 22 of the Securities Act of 1933, however, creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act of 1933 or the rules and regulations thereunder. Accordingly, there is uncertainty as to whether a court would enforce such a forum selection provision as written in connection with claims arising under the Securities Act of 1933. This forum selection provision in our amended and restated certificate of incorporation may limit our stockholders' ability to obtain a favorable judicial forum for disputes with us. It is also possible that a court could rule that such a provision is inapplicable or unenforceable.

Anti-takeover effects of the Delaware General Corporation Law

We are subject to the provisions of Section 203 of the DGCL, or Section 203. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a 3-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. A "business combination" includes, among other things, a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder. An "interested stockholder" is a person who, together with affiliates and associates, owns, or did own within the three years before the determination of interested stockholder status, 15% or

more of the corporation's voting stock. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

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

The restrictions in Section 203 do not apply to corporations that have elected, in the manner provided in Section 203, not to be subject to Section 203 of the DGCL or, with certain exceptions, which do not have a class of voting stock that is listed on a national securities exchange or authorized for quotation on the NASDAQ Global Market or held of record by more than 2,000 stockholders. Our certificate of incorporation and bylaws do not opt out of Section 203.

Section 203 could delay or prohibit mergers or other takeover or change in control attempts with respect to us and, accordingly, may discourage attempts to acquire us even though such a transaction may offer our stockholders the opportunity to sell their stock at a price above the prevailing market price.

Description of Warrants

The following description, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. If we indicate in the prospectus supplement, the terms of any warrants offered under that prospectus supplement may differ from the terms described below. Specific warrant agreements will contain additional important terms and provisions and will be incorporated by reference as an exhibit to the registration statement, which includes this prospectus.

We do not have any warrants outstanding as of the date hereof.

General

We may issue warrants for the purchase of common stock and/or preferred stock in one or more series. We may issue warrants independently or together with common stock and/or preferred stock, and the warrants may be attached to or separate from these securities.

We will evidence each series of warrants by warrant certificates that we will issue under a separate warrant agreement. We may enter into the warrant agreement with a warrant agent. We may also choose to act as our own warrant agent. We will indicate the name and address of the warrant agent in the applicable prospectus supplement relating to a particular series of warrants.

We will describe in the applicable prospectus supplement the terms of the series of warrants, including:

- the offering price and aggregate number of warrants offered;
- the currency for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- in the case of warrants to purchase common stock or preferred stock, the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreement and the warrants;
- the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- anti-dilution provisions of the warrants, if any;
- the periods during which, and places at which, the warrants are exercisable;
- the manner of exercise of the warrants, including any cashless exercise rights;
- the dates on which the right to exercise the warrants will commence and expire;
- the manner in which the warrant agreement and warrants may be modified;
- federal income tax consequences of holding or exercising the warrants;
- any securities exchange or quotation system on which the warrants or any securities deliverable upon exercise of the warrants may be listed or quoted;
- the terms of the securities issuable upon exercise of the warrants; and
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including, in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to 5:00 P.M. eastern time, the close of business, on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required exercise price by the methods provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate, and in the applicable prospectus supplement, the information that the holder of the warrant will be required to deliver to the warrant agent.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants.

Enforceability of Rights By Holders of Warrants

Any warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action the holder's right to exercise, and receive the securities purchasable upon exercise of, its warrants in accordance with their terms.

Warrant Agreement Will Not Be Qualified Under Trust Indenture Act of 1939, as amended (the "TIA")

No warrant agreement will be qualified as an indenture, and no warrant agent will be required to qualify as a trustee, under the TIA. Therefore, holders of warrants issued under a warrant agreement will not have the protection of the Trust Indenture Act with respect to their warrants.

Description of Units

We may issue units comprised of shares of common stock, shares of preferred stock, and warrants in any combination. We may issue units in such amounts and in as many distinct series as we wish. This section outlines certain provisions of the units that we may issue. If we issue units, they will be issued under one or more unit agreements to be entered into between us and a bank or other financial institution, as unit agent. The information described in this section may not be complete in all respects and is qualified entirely by reference to the unit agreement with respect to the units of any particular series. The specific terms of any series of units offered will be described in the applicable prospectus supplement. If so described in a particular supplement, the specific terms of any series of units may differ from the general description of terms presented below. We urge you to read any prospectus supplement related to any series of units we may offer, as well as the complete unit agreement and unit certificate that contain the terms of the units. If we issue units, forms of unit agreements and unit certificates relating to such units will be incorporated by reference as exhibits to the registration statement, which includes this prospectus.

Each unit that we may issue will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date. The applicable prospectus supplement may describe:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions of the governing unit agreement;
- the price or prices at which such units will be issued;
- the applicable United States federal income tax considerations relating to the units;
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units; and
- any other terms of the units and of the securities comprising the units.

The provisions described in this section, as well as those described under “Description of Capital Stock” and “Description of Warrants” will apply to the securities included in each unit to the extent relevant and as may be updated in any prospectus supplements.

Issuance in Series

We may issue units in such amounts and in as many distinct series as we wish. This section summarizes terms of the units that apply generally to all series. Most of the financial and other specific terms of your series will be described in the applicable prospectus supplement.

Unit Agreements

We will issue the units under one or more unit agreements to be entered into between us and a bank or other financial institution, as unit agent. We may add, replace or terminate unit agents from time to time. We will identify the unit agreement under which each series of units will be issued and the unit agent under that agreement in the applicable prospectus supplement.

PLAN OF DISTRIBUTION

We may sell the securities offered by this prospectus from time to time in one or more transactions, including, without limitation:

- to or through underwriters, brokers or dealers (acting as agent or principal);
- directly to one or more other purchasers;
- upon the exercise of rights distributed or issued to our security holders;
- through a block trade in which the broker or dealer engaged to handle the block trade will attempt to sell the securities as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- in “at the market” offerings within the meanings of Rule 415(a)(4) under the Securities Act of 1933 or through a market maker or into an existing market, on an exchange, or otherwise;
- directly to purchasers, through a specific bidding or auction process, on a negotiated basis or otherwise;
- through agents on a best-efforts basis;
- through any other method permitted pursuant to applicable law; or
- otherwise through a combination of any of the above methods of sale.

In addition, we may enter into option, share lending or other types of transactions that require us to deliver shares of common stock to an underwriter, broker or dealer, who will then resell or transfer the

shares of common stock under this prospectus. We may also enter into hedging transactions with respect to our securities. For example, we may:

- enter into transactions involving short sales of the shares of common stock by underwriters, brokers or dealers;
- sell shares of common stock short and deliver the shares to close out short positions;
- enter into option or other types of transactions that require us to deliver shares of common stock to an underwriter, broker or dealer, who will then resell or transfer the shares of common stock under this prospectus; or
- loan or pledge the shares of common stock to an underwriter, broker or dealer, who may sell the loaned shares or, in the event of default, sell the pledged shares.

We may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be identified in the applicable prospectus supplement (or a post-effective amendment). In addition, we may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus. Such financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

If we use any underwriter, we will provide a prospectus supplement that will name any underwriter involved in the offer and sale of the securities. The prospectus supplement will also set forth the terms of the offering, including:

- the purchase price of the securities and the proceeds we will receive from the sale of the securities;
- any underwriting discounts and other items constituting underwriters' compensation;
- any public offering or purchase price and any discounts or commissions allowed or re-allowed or paid to dealers;
- any commissions allowed or paid to agents;
- any securities exchanges on which the securities may be listed;
- the method of distribution of the securities;
- the terms of any agreement, arrangement or understanding entered into with the underwriters, brokers or dealers; and
- any other information we think is important.

If underwriters or dealers are used in the sale, the securities will be acquired by the underwriters or dealers for their own account. The securities may be sold from time to time by us in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices;
- at varying prices determined at the time of sale; or
- at negotiated prices.

Such sales may be effected:

- in transactions on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;

- in transactions in the over-the-counter market;
- in block transactions in which the broker or dealer so engaged will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction, or in crosses, in which the same broker acts as an agent on both sides of the trade;
- through the writing of options; or
- through other types of transactions.

General

Any public offering price and any discounts, commissions, concessions or other items constituting compensation allowed or reallocated or paid to underwriters, dealers, agents or remarketing firms may be changed from time to time. Underwriters, dealers, agents and remarketing firms that participate in the distribution of the offered securities may be “underwriters” as defined in the Securities Act. Any discounts or commissions they receive from us and any profits they receive on the resale of the offered securities may be treated as underwriting discounts and commissions under the Securities Act. We will identify any underwriters, agents or dealers and describe their commissions, fees or discounts in the applicable prospectus supplement or pricing supplement, as the case may be. In compliance with the guidelines of the Financial Industry Regulatory Authority (“FINRA”), the maximum discount or commission to be received by a FINRA member or independent broker-dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

At-the-Market Offerings

If we reach an agreement with an underwriter or agent on a placement, including the number and types of securities to be offered in the placement and any minimum price below which sales may not be made, such underwriter or agent would agree to use its commercially reasonable efforts, consistent with its normal trading and sales practices, to try to sell such securities on such terms. An underwriter or agent could make sales in privately negotiated transactions and/or any other method permitted by law, including sales deemed to be an “at-the-market” offering as defined in Rule 415 promulgated under the Securities Act, sales made directly on the NASDAQ Global Market, the existing trading market for our common stock, or sales made to or through a market maker other than on an exchange. The name of any such underwriter or agent involved in the offer and sale of the securities, the amounts underwritten, and the nature of its obligations to take the securities will be described in the applicable prospectus supplement.

Underwriters and Agents

If underwriters are used in a sale, they will acquire the offered securities for their own account. The underwriters may resell the offered securities in one or more transactions, including negotiated transactions. These sales may be made at a fixed public offering price or prices, which may be changed, at market prices prevailing at the time of the sale, at prices related to such prevailing market price or at negotiated prices. We may offer the securities to the public through an underwriting syndicate or through a single underwriter. The underwriters in any particular offering will be mentioned in the applicable prospectus supplement or pricing supplement, as the case may be.

Unless otherwise specified in connection with any particular offering of securities, the obligations of the underwriters to purchase the offered securities will be subject to certain conditions contained in an underwriting agreement that we will enter into with the underwriters at the time of the sale to them. The underwriters will be obligated to purchase all of the securities of the series offered if any of the securities are purchased, unless otherwise specified in connection with any particular offering of securities. Any initial offering price and any discounts or concessions allowed, reallocated or paid to dealers may be changed from time to time.

We may designate agents to sell the offered securities. Unless otherwise specified in connection with any particular offering of securities, the agents will agree to use their best efforts to solicit purchases for the period of their appointment. We may also sell the offered securities to one or more remarketing firms, acting as principals for their own accounts or as agents for us. These firms will remarket the offered securities

upon purchasing them in accordance with a redemption or repayment pursuant to the terms of the offered securities. A prospectus supplement or pricing supplement, as the case may be, will identify any remarketing firm and will describe the terms of its agreement, if any, with us and its compensation.

In connection with offerings made through underwriters or agents, we may enter into agreements with such underwriters or agents pursuant to which we receive our outstanding securities in consideration for the securities being offered to the public for cash. In connection with these arrangements, the underwriters or agents may also sell securities covered by this prospectus to hedge their positions in these outstanding securities, including in short sale transactions. If so, the underwriters or agents may use the securities received from us under these arrangements to close out any related open borrowings of securities.

Dealers

We may sell the offered securities to dealers as principals. We may negotiate and pay dealers' commissions, discounts or concessions for their services. The dealer may then resell such securities to the public either at varying prices to be determined by the dealer or at a fixed offering price agreed to with us at the time of resale. Dealers engaged by us may allow other dealers to participate in resales.

Direct Sales

We may choose to sell the offered securities directly. In this case, no underwriters or agents would be involved.

Institutional Purchasers

We may authorize agents, dealers or underwriters to solicit certain institutional investors to purchase offered securities on a delayed delivery basis pursuant to delayed delivery contracts providing for payment and delivery on a specified future date. The applicable prospectus supplement or pricing supplement, as the case may be, will provide the details of any such arrangement, including the offering price and commissions payable on the solicitations.

We will enter into such delayed contracts only with institutional purchasers that we approve. These institutions may include commercial and savings banks, insurance companies, pension funds, investment companies and educational and charitable institutions.

Indemnification; Other Relationships

We may have agreements with agents, underwriters, dealers and remarketing firms to indemnify them against certain civil liabilities, including liabilities under the Securities Act. Agents, underwriters, dealers and remarketing firms, and their affiliates, may engage in transactions with, or perform services for, us in the ordinary course of business. This includes commercial banking and investment banking transactions.

Market-Making, Stabilization and Other Transactions

There is currently no market for any particular preferred stock that may be offered. If the preferred stock which may be offered is traded after its initial issuance, it may trade at a discount from its initial offering price, depending upon prevailing interest rates, the market for similar securities and other factors. While it is possible that an underwriter could inform us that it intends to make a market in any particular preferred stock that may be offered, such underwriter would not be obligated to do so, and any such market-making could be discontinued at any time without notice. Therefore, no assurance is given as to whether an active trading market will develop for any particular preferred stock that may be offered. If we seek to list the preferred stock that may be offered on any exchange or quotation system, any such listing with respect to any particular preferred stock will be described in the applicable prospectus supplement or pricing supplement, as the case may be.

In connection with any offering, the underwriters may also engage in penalty bids. Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a syndicate covering transaction to cover syndicate short positions. Stabilizing transactions, syndicate covering transactions and penalty bids may cause the price of

the securities to be higher than it would be in the absence of the transactions. The underwriters may, if they commence these transactions, discontinue them at any time.

Some of the underwriters, dealers or agents used by us in any offering of securities under this prospectus may be customers of, engage in transactions with, and perform services for us or affiliates of ours in the ordinary course of business. Any underwriters to which offered securities are sold by us for public offering and sale may make a market in such securities, but those underwriters will not be obligated to do so and may discontinue any market making at any time.

The anticipated date of delivery of the securities offered by this prospectus will be described in the applicable prospectus supplement relating to the offering.

No FINRA member may participate in any offering of securities made under this prospectus if such member has a conflict of interest under FINRA Rule 5121, including if 5% or more of the net proceeds, not including underwriting compensation, of any offering of securities made under this prospectus will be received by a FINRA member participating in the offering or affiliates or associated persons of such FINRA members, unless a qualified independent underwriter has participated in the offering or the offering otherwise complies with FINRA Rule 5121.

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

LEGAL MATTERS

The validity of the securities offered by this prospectus has been passed upon for us by Haynes and Boone, LLP, Houston, Texas, counsel to Applied Optoelectronics, Inc. Certain legal matters will be passed upon for any agents or underwriters by counsel for such agents or underwriters identified in the applicable prospectus supplement.

EXPERTS

The audited financial statements incorporated by reference in this prospectus and elsewhere in the registration statement have been so incorporated by reference in reliance upon the reports of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing.

WHERE TO LEARN MORE ABOUT US

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the securities being offered under this prospectus. This prospectus, which forms part of the registration statement, does not contain all of the information in the registration statement. We have omitted certain parts of the registration statement, as permitted by the rules and regulations of the SEC. For further information regarding us and our securities, please see the registration statement and our other filings with the SEC, including our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K and any proxy statements, which you may read and copy at the Public Reference Room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information about the Public Reference Room by calling the SEC at 1-800-SEC-0330. Our public filings with the SEC are also available to the public on the SEC's Internet website at <http://www.sec.gov>.

We furnish holders of our common stock with annual reports containing audited financial statements prepared in accordance with accounting principles generally accepted in the United States following the end of each fiscal year. We file reports and other information with the SEC pursuant to the reporting requirements of the Exchange Act. In addition, the reports, proxy statements and other information that we file with the SEC are available to you free of charge through the Investor Relations page of our website, <http://ao-inc.com/>, as soon as reasonably practicable after they have been electronically filed with, or furnished to, the SEC. We have included our website address as a textual reference and do not intend it as an active link to our website. The contents of our website are not part of this prospectus, and you should not consider

the contents of our website in making an investment decision with respect to our securities. We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.

Descriptions in this prospectus of documents are intended to be summaries of the material, relevant portions of those documents, but may not be complete descriptions of those documents. For complete copies of those documents, please refer to the exhibits to the registration statement and other documents filed by us with the SEC.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” into this prospectus the information we file with them, which means that we can disclose important information to you by referring you to those documents. The information that we incorporate by reference into this prospectus is considered to be part of this prospectus, and information that we file later with the SEC automatically updates and supersedes any information in this prospectus. We have filed the following documents with the SEC. These documents are incorporated by reference as of their respective dates of filing, as well as any future documents (excluding information furnished pursuant to Items 2.02 and 7.01 of Form 8-K) we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, subsequent to the date of this prospectus and prior to the termination of the offering:

1. [our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, as filed with the SEC on February 27, 2023](#);
2. [Amendment No. 1 to our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, as filed with the SEC on March 10, 2023](#);
3. our Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2022, June 30, 2022, and September 30, 2022, as filed with the SEC on [May 5, 2022](#) and [August 4, 2022](#) and [November 3, 2022](#);
4. our Current Reports on Form 8-K as filed with the SEC on [June 3, 2022](#), [June 10, 2022](#), [September 15, 2022](#) and [November 21, 2022](#); and
5. the description of our common stock contained in the “Description of Company’s Common Stock” filed as [Exhibit 4.4 to our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed with the SEC on February 28, 2020](#), including any amendment or reports filed for the purpose of updating such description.

In addition, all documents subsequently filed by us pursuant to Section 13(a), 13(c), 14 and 15(d) of the Exchange Act after the date of this registration statement and prior to the filing of a post-effective amendment that indicates that all securities offered have been sold or that deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference into this registration statement and to be a part hereof from the date of filing of such documents. Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this registration statement to the extent that a statement contained herein or in any other subsequently filed document that is incorporated by reference herein modifies or supersedes such earlier statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

Nothing in this registration statement shall be deemed to incorporate information furnished but not filed with the SEC pursuant to Item 2.02 or Item 7.01 of Form 8-K.

We will provide, without charge, upon written or oral request of any person to whom a copy of this prospectus is delivered, a copy of any or all of the foregoing documents and information that has been or

may be incorporated in this prospectus by reference, other than exhibits to such documents. Requests for such documents and information should be directed to:

Applied Optoelectronics, Inc.
Attn: Dr. Stefan Murry, Chief Financial Officer
13139 Jess Pirtle Blvd.
Sugar Land, TX 77478
(281) 295-1800

You may also access the documents incorporated by reference in this prospectus through our website at <http://ao-inc.com/>. Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus or the registration statement of which it forms a part.

See also “Where to Learn More About Us.”

\$55,000,000



Common Stock

PROSPECTUS SUPPLEMENT

RAYMOND JAMES

November 7, 2024
