

Copies to:

David C. Kuo
 General Counsel and Secretary Anthony J. Eppert
 Applied Optoelectronics, Inc. Winstead PC
 13115 Jess Pirtle Blvd. 1100 JPMorgan Chase Tower
 Sugar Land, Texas 77478 Suite 1100
 Houston, Texas 77002
 (281) 295-1800 (713) 650-8400

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

(Check one):

Large accelerated filer Accelerated filer
 Non-accelerated filer Smaller reporting company
 (Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

| Title of Securities to be Registered | Amount to be Registered(1) | Proposed Maximum Offering Price Per Share(3) | Proposed Maximum Aggregate Offering Price(3) | Amount of Registration Fee |
|---|----------------------------|--|--|----------------------------|
| Common stock, \$0.001 par value per share | 2,600,000 shares(2) | \$12.47 | \$32,422,000 | \$4,175.96 |

(1) Pursuant to Rule 416, this Registration Statement is deemed to include additional shares of common stock issuable under the terms of the Applied Optoelectronics, Inc. 1998 Incentive Share Plan, 2000 Incentive Share Plan, 2004 Incentive Share Plan, 2006 Incentive Share Plan and 2013 Equity Incentive Plan by reason of any stock dividend, stock split, recapitalization or other similar transaction.

(2) Consists of shares of common stock issuable in respect of awards to be granted under the Applied Optoelectronics, Inc. 1998 Incentive Share Plan, 2000 Incentive Share Plan, 2004 Incentive Share Plan, 2006 Incentive Share Plan and 2013 Equity Incentive Plan, as adjusted for the 30-to-one reverse stock split effected on August 20, 2013.

(3) Estimated solely for the purpose of calculating the registration fee in accordance with Rules 457(c) and (h) promulgated under the Securities Act of 1933 (the "Securities Act"), based upon the average of the high and low prices of Applied Optoelectronic's common stock as reported on the NASDAQ Global Select Market on November 15, 2013.

EXPLANATORY NOTE

Applied Optoelectronics, Inc. (the "Registrant") has prepared this Registration Statement in accordance with the requirements of Form S-8 under the Securities Act of 1933, as amended, (the "Securities Act"), to register 2,600,000 shares of its common stock, par value \$.001 per share, which is referred to as common stock, that are reserved for issuance upon issuance of awards to be granted, under the Applied Optoelectronics, Inc. 1998 Incentive Share Plan, 2000 Incentive Share Plan, 2004 Incentive Share Plan, 2006 Incentive Share Plan and 2013 Equity Incentive Plan (collectively, the "Plans"), as adjusted for the 30-to-one reverse stock split effected on August 20, 2013.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

Item 1. Plan Information.

The document(s) containing the information required by Part I of Form S-8 will be sent or given to employees as specified by Rule 428(b)(1) under the Securities Act. Such documents need not be filed with the Securities and Exchange Commission (the "Commission"), either as part of the Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424 under the Securities Act. These documents and the documents incorporated by reference in this Registration Statement pursuant to Item 3 of Part II of Form S-8, taken together, constitute a prospectus that meets the requirement of Section 10(a) of the Securities Act.

Item 2. Registrant Information and Employee Plan Annual Information.

The Registrant will furnish without charge to each person to whom the prospectus is delivered, upon the written or oral request of such person, a copy of any and all of the documents incorporated by reference in Item 3 of Part II of this Registration Statement, other than exhibits to such documents (unless such exhibits are specifically incorporated by reference to the information that is incorporated). Those documents are incorporated by reference in the Section 10(a) prospectus. Requests should be directed to Applied Optoelectronics, Inc., 13115 Jess Pirtle Blvd., Sugar Land, Texas 77478, Attention: David Kuo, telephone number (281) 295-1800.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The Company incorporates by reference in this Registration Statement:

1. The Company's prospectus filed pursuant to Rule 424(b) under the Securities Act relating to the Company's Registration Statement on Form S-1 (File No. 333-190591), initially filed with the Commission on August 13, 2013, as amended; and
2. The description of the Company's common stock set forth in the Registrant's Registration Statement on Form 8-A filed pursuant to Section 12 of the Securities Exchange Act of 1934 (the "1934 Act") on September 23, 2013, and any amendment or report filed for the purpose of updating any such description.

All documents filed by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the 1934 Act, subsequent to the date of this Registration Statement shall be deemed to be incorporated herein by reference and to be a part hereof from the date of filing of such documents until such time as there shall have been filed a post-effective amendment that indicates that all securities offered hereby have been sold or which deregisters all securities remaining unsold at the time of such amendment.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law provides that a corporation may indemnify directors and officers as well as other employees and individuals against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any threatened, pending or completed actions, suits or proceedings in which such person is made a party by reason of such person being or having been a director, officer, employee or agent to the Registrant. The Delaware General Corporation Law provides that Section 145 is not exclusive of other rights to which those seeking indemnification may be entitled under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise. The Registrant's bylaws provide for indemnification by the Registrant of its directors, officers and employees to the fullest extent permitted by the Delaware General Corporation Law.

Section 102(b)(7) of the Delaware General Corporation Law permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) for unlawful payments of dividends or unlawful stock repurchases, redemptions or other distributions, or (iv) for any transaction from which the director derived an improper personal benefit. The Registrant's certificate of incorporation provides for such limitation of liability.

The Registrant maintains standard policies of insurance under which coverage is provided (a) to its directors and officers against loss rising from claims made by reason of breach of duty or other wrongful act, and (b) to the Registrant with respect to payments which may be made by the Registrant to such officers and directors pursuant to the above indemnification provision or otherwise as a matter of law.

The Registrant has entered into customary indemnification agreements with our executive officers and directors that provide them, in general, with customary indemnification in connection with their service to us or on our behalf.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

See Index to Exhibits

Item 9. Undertakings.

(a) The undersigned registrant hereby undertakes:

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

(i) to include any prospectus required by Section 10(a)(3) of the 1933 Act;

(ii) to reflect in the prospectus any facts or events arising after the effective date of this Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this Registration Statement;

(iii) to include any material information with respect to the plan of distribution not previously disclosed in this Registration Statement or any material change to such information in this Registration Statement;

provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Company pursuant to Section 13 or Section 15(d) of the 1934 Act that are incorporated by reference in the Registration Statement.

(2) That, for the purpose of determining any liability under the 1933 Act, each such post-effective amendment shall be deemed to be a new Registration Statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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

(4) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this Registration Statement, regardless of the underwriting method used to sell the securities to the purchase, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) any preliminary prospectus or prospectus of the Registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) any free writing prospectus relating to the offering prepared by or on behalf of the Registrant or used or referred to by the Registrant;

(iii) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the Registrant; and

(iv) any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining liability under the Securities Act, each filing of the Company's annual report pursuant to Section 13(a) or Section 15(d) of the 1934 Act that is incorporated by reference in this Registration Statement shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers, and controlling persons of the Company pursuant to the foregoing provisions, or otherwise, the Company has been advised that, in the opinion of the Commission, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Company of expenses incurred or paid by a director, officer, or controlling person of the Company in the successful defense of any action, suit or proceeding) is asserted by such director, officer, or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act, the Company has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Sugar Land, Texas, on the 19 day of November, 2013.

APPLIED OPTOELECTRONICS, INC.

By: /s/ Chih-Hsiang (Thompson) Lin
Chih-Hsiang (Thompson) Lin
President and Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Chih-Hsiang (Thompson) Lin and James L. Dunn, Jr., and each of them, his or her true and lawful attorneys-in-fact and agents, with full power to act separately and full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement and all additional Registration Statements pursuant to Rule 462(b) of the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or either of them or his or her or their substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities, in the locations and on the dates indicated.

| <u>Signature</u> | <u>Title</u> | <u>Date</u> |
|---|----------------------------|-------------------|
| <u>/s/ Chih-Hsiang (Thompson) Lin</u> Chih-Hsiang (Thompson) Lin | President, Chief Executive | November 19, 2013 |

Officer and Director
(principal executive officer)

/s/ James L. Dunn Jr.
James L. Dunn Jr. Chief Financial Officer,
(principal financial and
accounting officer) November 19, 2013

/s/ Juen-Sheng (Andrew) Kang
Juen-Sheng (Andrew) Kang Chairman of the Board
of Directors November 19, 2013

/s/ William H. Yeh
William H. Yeh Director November 19, 2013

/s/ Richard B. Black
Richard B. Black Director November 19, 2013

/s/ Alex Ignatiev
Alex Ignatiev Director November 19, 2013

/s/ Alan Moore
Alan Moore Director November 19, 2013

/s/ Min-Chu (Mike) Chen
Min-Chu (Mike) Chen Director November 19, 2013

index to exhibits

- 4.1 Amended and Restated Certificate of Incorporation (incorporated by reference from Exhibit 3.1 to the Registrant's Form 10-Q filed on November 14, 2013)
- 4.2 Amended and Restated Bylaws (incorporated by reference from Exhibit 3.2 to the Registrant's Registration Statement on Form 10-Q filed on November 14, 2013)
- *5.1 Opinion of Winstead PC
- *23.1 Consent of Grant Thornton LLP
- *23.2 Consent of Ovum Limited
- *23.3 Consent of Adams Capital, Inc.
- *24.1 Power of Attorney (included on signature page of this Registration Statement)
- 99.1 Applied Optoelectronics, Inc. 1998 Incentive Share Plan (incorporated by reference from Exhibit 10.2 to the Registrant's Registration Statement on Form S-1 filed on August 13, 2013)
- 99.2 Applied Optoelectronics, Inc. 2000 Incentive Share Plan (incorporated by reference from Exhibit 10.3 to the Registrant's Registration Statement on Form S-1 filed on August 13, 2013)
- 99.3 Applied Optoelectronics, Inc. 2004 Incentive Share Plan (incorporated by reference from Exhibit 10.4 to the Registrant's Registration Statement on Form S-1 filed on August 13, 2013)
- 99.4 Applied Optoelectronics, Inc. 2006 Incentive Share Plan (incorporated by reference from Exhibit 10.5 to the Registrant's Registration Statement on Form S-1 filed on August 13, 2013)
- 99.5 Applied Optoelectronics, Inc. 2013 Equity Incentive Plan (incorporated by reference from Exhibit 10.6 to the Registrant's Registration Statement on Form S-1 filed on August 13, 2013)

* Filed herewith.