As filed with the Securities and Exchange Commission on September 11, 2026

Registration No. 333-296038

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

Amendment No. 1
to
FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

AEYE, INC.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	3714 (Primary Standard Industrial Classification Code Number)	37-1827430 (I.R.S. Employer Identification No.)

4670 Willow Road, Suite 125
Pleasanton, CA 94588
(925) 400-4366

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Matthew Fisch
Chief Executive Officer
4670 Willow Road, Suite 125
Pleasanton, CA 94588
(925) 400-4366
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:
Taylor E. Landry
Allen Overy Shearman Sterling US LLP
800 Capitol Street, Suite 2200
Houston, Texas 77002
Telephone: (713) 354-4900

Approximate date of commencement of proposed sale to the public:
From time to time after this Registration Statement becomes effective.

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

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

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

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

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

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

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☐

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

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

EXPLANATORY NOTE

AEye, Inc. is filing this Amendment No. 1 (this "Amendment") to the Registration Statement on Form S-3 (File No. 333-296038) as an exhibits-only filing to file an updated auditor consent as Exhibit 23.1. Accordingly, this Amendment consists only of the facing page, this explanatory note, Item 16 of Part II of the Registration Statement, including the signature page and the exhibit index, and the filed Exhibit 23.1. The remainder of the Registration Statement is unchanged and has been omitted.

Part II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 16. Exhibits and Financial Statement Schedules.

(a)**Exhibits.**

		Incorporated by Reference		
Exhibit	**Description**	**Form**	**Exhibit**	**Filing Date**
1.1*	Form of Underwriting Agreement			
2.1†	Merger Agreement, dated as of February 17, 2021, by and among the Company, Merger Sub and AEye Technologies	S-4	2.1	5/13/2021
2.2†	Amendment to the Merger Agreement, dated as of April 30, 2021, by and among the Company, Merger Sub and AEye Technologies	S-4	2.2	5/13/2021
3.1	Second Amended and Restated Certificate of Incorporation of AEye, Inc.	8-K	3.1	8/23/2021
3.2	Certificate of Amendment of the Second Amended and Restated Certificate of Incorporation of AEye, Inc.	10-Q	3.2	5/11/2023
3.3	Certificate of Amendment of the Second Amended and Restated Certificate of Incorporation of AEye, Inc., as amended, filed on December 26, 2023.	8-K	3.1	12/29/2023
3.4	Amended and Restated Bylaws of AEye, Inc.	8-K	3.1	03/07/2025
4.1	Registration Rights Agreement by and between AEye, Inc. and Tumim Stone Capital LLC, dated December 8, 2021	8-K/A	4.1	12/15/2021
4.2	Registration Rights Agreement, by and between AEye, Inc. and New Circle Principal Investment LLC, dated July 25, 2024	8-K	4.1	07/29/2024
4.3	Registration Rights Agreement by and between AEye, Inc. and the purchaser named in the signature pages thereto, dated January 2, 2025	8-K	10.2	01/03/2025
4.4	Form of Senior Unsecured Convertible Promissory Note to be issued by the Company pursuant to and in accordance with the Securities Purchase Agreement, dated January 2, 2025	8-K	4.1	01/03/2025
4.5	Form of Common Stock Purchase Warrant to be issued by the Company pursuant to and in accordance with the Securities Purchase Agreement, dated January 2, 2025	8-K	4.2	01/03/2025
4.6	Description of Securities Registered under Section 12 of the Securities Exchange Act of 1934.	10-K	4.5	03/28/2022
4.7	Warrants Agreement between AEye, Inc. and IGEP Park Place, LLC, dated May 23, 2025	S-3	4.4	08/11/2025
4.8	Warrant to Purchase Common Stock, dated August 8, 2025	S-3	4.5	08/11/2025
4.9*	Form of Certificate of Designation of Preferred Stock			
4.10*	Form of Warrant Agreement and Warrant Certificate			
4.11*	Form of Rights Agreement			
4.12*	Form of Unit Agreement and Unit Certificate			
4.13+	Form of Indenture for Senior Debt Securities			
4.14+	Form of Indenture for Subordinated Debt Securities			
5.1+	Opinion of Allen Overy Shearman Sterling US LLP			
23.1#	Consent of KPMG LLP (with respect to AEye, Inc. financial statements)			
23.2+	Consent of Allen Overy Shearman Sterling US LLP (included in Exhibit 5.1)			
24.1+	Power of Attorney (included on the signature page of the Registrant's Registration Statement on Form S-3 filed on May 19, 2026)			
25.1^	Statement of Eligibility on Form T-1 under the Trust Indenture Act of 1939 of Debt Trustee			
107+	Filing Fee Table (Incorporated by reference to Exhibit 107 to the Registrant's Registration Statement on Form S-3 filed on May 19, 2026)			

† Certain exhibits and schedules to this Exhibit have been omitted in accordance with Regulation S-K Item 601(a)(5), which the Registrant agrees to furnish supplementally to the SEC upon its request.
# Filed herewith.
* To be filed as an amendment or as an exhibit to a document filed under the Exchange Act and incorporated by reference into this registration statement.
^ To be filed, if necessary, separately under the electronic form type 305B2 pursuant to Section 305(B)(2) of the Trust Indenture Act of 1939, as amended.
+ Filed previously.

(b)**Financial Statement Schedules.**

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, hereunto duly authorized, in Pleasanton, California, on this 11th day of September, 2026.

AEYE, INC.

By:	/s/ Matthew Fisch
Name:	Matthew Fisch
Title:	Chief Executive Officer

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

Signature	Title	Date
/s/ Matthew Fisch Matthew Fisch	Chief Executive Officer, Board Chair and Director (Principal Executive Officer)	September 11, 2026
* Conor B. Tierney	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	September 11, 2026
* Timothy J. Dunn	Director	September 11, 2026
* Prof. Dr. Bernd Gottschalk	Director	September 11, 2026
* Jonathon B. Husby	Director	September 11, 2026
* Doron Simon	Director	September 11, 2026
* Sue E. Zeifman	Director	September 11, 2026

*By: /s/Matthew Fisch
Matthew Fisch
Attorney-in-fact

KPMG LLP
2755 Augustine Drive
Suite 701
Santa Clara, CA 95054

Consent Of Independent Registered Public Accounting Firm

We consent to the use of our report dated March 18, 2026, with respect to the consolidated financial statements of AEye, Inc., incorporated herein by reference, and to the reference to our firm under the heading "Experts" in the prospectus.

/s/ KPMG LLP

Santa Clara, California
September 11, 2026