As filed with the Securities and Exchange Commission on September 2, 2026

Registration No. 333-

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

FORM S–8
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Lantheus Holdings, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**35-2318913**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
201 Burlington Road, South Building Bedford, Massachusetts 01730	**01862**
(Address of Principal Executive Offices)	(Zip Code)

Lantheus Holdings, Inc. Amended and Restated 2026 Equity Incentive Plan
(f/k/a the Lantheus Holdings, Inc. 2015 Equity Incentive Plan)
(Full Title of Plan)

Daniel Niedzwiecki
Chief Administrative Officer and
General Counsel
201 Burlington Road, South Building
Bedford, Massachusetts 01730
(Name and address of agent for service)

(978) 671-8648
(Telephone number, including area code, of agent for service)

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. ☐

EXPLANATORY NOTE

Lantheus Holdings, Inc. (the "Registrant") is filing this Registration Statement on Form S-8 (this "Registration Statement") to register an additional 2,000,000 shares of its common stock, par value $0.01 per share, that may be issued and sold under the Lantheus Holdings, Inc. Amended and Restated 2026 Equity Incentive Plan (f/k/a the Lantheus Holdings, Inc. 2015 Equity Incentive Plan) (the "Plan"), following the amendment and restatement of the Plan that was approved by the Registrant's stockholders at its annual meeting on April 30, 2026. This Registration Statement is submitted in accordance with General Instruction E to the Registration Statement on Form S-8 regarding registration of additional securities, and pursuant to that instruction, the contents of the Registration Statements on Form S-8 (File No. 333-205211, File No. 333-214343, File No. 333-220049, File No. 333-232919, File No. 333-258454, File No. 333-264890 and File No. 333-281686) filed with the Securities and Exchange Commission on June 25, 2015, October 31, 2016, August 18, 2017, July 31, 2019, August 4, 2021, May 12, 2022 and August 21, 2024, respectively, are incorporated herein by reference.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 8. Exhibits.

See Exhibit Index below.

EXHIBIT INDEX

		INCORPORATED BY REFERENCE			
EXHIBIT NUMBER	DESCRIPTION OF EXHIBITS	FORM	FILE NUMBER	EXHIBIT	FILING DATE
4.1	Amended and Restated Certificate of Incorporation of Lantheus Holdings, Inc.	8-K	001-36569	3.1	April 27, 2018
4.2	Certificate of Amendment of Amended and Restated Certificate of Incorporation of Lantheus Holdings, Inc.	8-K	001-36569	3.1	May 1, 2026
4.3	Amended and Restated Bylaws of Lantheus Holdings, Inc.	8-K	001-36569	3.2	May 5, 2025
4.4	Common Stock Certificate.	8-K	001-36569	4.1	June 30, 2015
4.5	Lantheus Holdings, Inc. Amended and Restated 2026 Equity Incentive Plan.	8-K	001-36569	10.1	May 1, 2026
5.1*	Legal Opinion of Foley Hoag LLP.				
23.1*	Consent of Independent Registered Public Accounting Firm, Deloitte & Touche LLP.				
23.2*	Consent of Foley Hoag LLP (included as part of Exhibit 5.1).				
24.1*	Power of Attorney (included as part of the signature page hereto).				
107*	Filing Fee Table				

* Filed herewith

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, thereunto duly authorized, in the City of Bedford, Commonwealth of Massachusetts, on September 2, 2026.

Lantheus Holdings, Inc.

By: /s/ Mary Anne Heino
Name: Mary Anne Heino
Title: Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each of the undersigned constitutes and appoints each of Mary Anne Heino, Robert J. Marshall, Jr. and Daniel Niedzwiecki, each acting alone, her or his true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for such person and in her or his name, place and stead, in any and all capacities, to sign this Registration Statement on Form S-8 (including all pre-effective and post-effective amendments and registration statements filed pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, each acting alone, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming that any such attorney-in-fact and agent, or her or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

Signature	Title	Date
/s/ Mary Anne Heino Mary Anne Heino	Chief Executive Officer and Chairperson of the Board (Principal Executive Officer)	September 2, 2026
/s/ Robert J. Marshall, Jr. Robert J. Marshall, Jr.	Chief Financial Officer (Principal Financial Officer)	September 2, 2026
/s/ Kimberly Brown Kimberly Brown	Chief Accounting Officer (Principal Accounting Officer)	September 2, 2026
/s/ Minnie Baylor-Henry Minnie Baylor-Henry	Director	September 2, 2026
/s/ Dr. Gérard Ber Dr. Gérard Ber	Director	September 2, 2026
/s/ Julie Eastland Julie Eastland	Director	September 2, 2026
/s/ Samuel R. Leno Samuel R. Leno	Director	September 2, 2026

/s/ Heinz Mäusli Heinz Mäusli	Director	September 2, 2026
/s/ Julie H. McHugh Julie H. McHugh	Director	September 2, 2026
/s/ Dr. Phuong Khanh Morrow Dr. Phuong Khanh Morrow	Director	September 2, 2026
/s/ Gary J. Pruden Gary J. Pruden	Director	September 2, 2026
/s/ Dr. James H. Thrall Dr. James H. Thrall	Director	September 2, 2026

Exhibit 5.1

FOLEY HOAG LLP

Seaport West
155 Seaport Boulevard
Boston, MA 02210-2600

617 832 1000 *main*
617 832 7000 *fax*

September 2, 2026

Lantheus Holdings, Inc.
201 Burlington Road, South Building
Bedford, Massachusetts 01730

Re: Registration Statement on Form S-8

Ladies and Gentlemen:

We are familiar with the Registration Statement on Form S-8 (the “**Registration Statement**”) being filed by Lantheus Holdings, Inc., a Delaware corporation (the “**Company**”), with the Securities and Exchange Commission (the “**Commission**”) under the Securities Act of 1933, as amended (the “**Securities Act**”), on the date hereof. The Registration Statement relates to the offer and sale by the Company of up to 2,000,000 shares (the “**Shares**”) of its common stock, par value $0.01 per share (“**Common Stock**”), issuable under the Lantheus Holdings, Inc. Amended and Restated 2026 Equity Incentive Plan (f/k/a the Lantheus Holdings, Inc. 2015 Equity Incentive Plan) (the “**Plan**”).

In arriving at the opinion expressed below, we have examined the Certificate of Incorporation and Bylaws of the Company, each as amended and restated to date, the records of meetings and consents of the Company’s Board of Directors, or committees thereof, records of the proceedings of its stockholders deemed to be relevant to this opinion letter, and the Plan, each as provided to us by the Company, and the Registration Statement.

In addition, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. In our examination, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to authentic original documents of all documents submitted to us as copies and the due authorization, execution and delivery of all documents by all persons other than the Company, where authorization, execution and delivery are prerequisites to the effectiveness of such documents. We have also made such investigations of law as we have deemed appropriate as a basis for the opinion expressed below.

We have assumed that the purchase price or other consideration to be received by the Company for the Shares will be valid consideration equal to or in excess of the par value thereof.

In rendering the opinion expressed below, we express no opinion other than as to the Delaware General Corporation Law.

On the basis of the foregoing, it is our opinion that the Shares, when issued and delivered in accordance with the terms of the Plan and the awards thereunder against the Company’s receipt of the purchase price or other consideration therefor, will be validly issued, fully paid and non-assessable.

This opinion is to be used only in connection with the offer and sale of the Shares while the Registration Statement is in effect.

This opinion is being delivered solely for the benefit of the Company and such other persons as are entitled to rely upon it pursuant to the applicable provisions of the Securities Act. This opinion may not be used, quoted, relied upon or referred to for any other purpose, nor may it be used, quoted, relied upon or referred to by any other person, for any purpose, without our prior written consent.

This opinion is based upon currently existing statutes, rules and regulations and judicial decisions and is rendered as of the date hereof, and we disclaim any obligation to advise you of any change in any of the foregoing sources of law or subsequent developments in law or changes in facts or circumstances which might affect any matters or opinions set forth herein.

We consent to the filing of this opinion as an exhibit to the Registration Statement. In giving such consent, we do not admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated thereunder.

This opinion letter shall be interpreted in accordance with the Core Opinion Principles jointly issued by the Committee on Legal Opinions of the American Bar Association's Business Law Section and the Working Group on Legal Opinions Foundation as published in 74 Business Lawyer 815 (2019).

Very truly yours,

FOLEY HOAG LLP

By: /s/ Stacie S. Aarestad
a Partner

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-8 of our reports dated February 26, 2026, relating to the financial statements of Lantheus Holdings, Inc. and the effectiveness of Lantheus Holdings, Inc.'s internal control over financial reporting, appearing in the Annual Report on Form 10-K of Lantheus Holdings, Inc. for the year ended December 31, 2025.

/s/ Deloitte & Touche LLP

Boston, Massachusetts

September 2, 2026

Calculation of Filing Fee Tables

S-8

Lantheus Holdings, Inc.

Table 1: Newly Registered Securities

	Security Type	Security Class Title	Fee Calculation Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
1	Equity	Common stock, $0.01 par value per share	Other	2,000,000		$ 201,800,000.00	0.0001381	$ 27,868.58
			Total Offering Amounts:			$ 201,800,000.00		$ 27,868.58
			Total Fee Offsets:					$ 0.00
			Net Fee Due:					$ 27,868.58

Offering Note

1 Note 1a: Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement on Form S-8 (the "Registration Statement") shall also cover any additional shares of the Registrant's common stock, $0.01 par value per share (the "Common Stock") that becomes issuable under the Lantheus Holdings, Inc. Amended and Restated 2026 Equity Incentive Plan (f/k/a the Lantheus Holdings, Inc. 2015 Equity Incentive Plan) (the "Plan") by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without the receipt of consideration that increases the number of the Registrant's outstanding shares of Common Stock. Pursuant to Rule 416, this registration statement also covers an indeterminate number of shares which may be subject to grant or otherwise issuable after the operation of any such anti-dilution and other provisions. Note 1b: This Registration Statement covers 2,000,000 shares of the Registrant's Common Stock, which are issuable pursuant to the Plan Note 1c: The Proposed Maximum Offering Price per Share for the shares reserved for issuance under the Plan is estimated in accordance with Rule 457(c) and (h) under the Securities Act solely for the purpose of calculating the registration fee on the basis of $100.90, the average of the high and low prices of the Registrant's common stock as reported on The Nasdaq Global Market on August 26, 2026, which date is within five business days prior to the filing of this registration statement.

Table 2: Fee Offset Claims and Sources ☑**Not Applicable**

	Registrant or Filer Name	Form or Filing Type	File Number	Initial Filing Date	Filing Date	Fee Offset Claimed	Security Type Associated with Fee Offset Claimed	Security Title Associated with Fee Offset Claimed	Unsold Securities Associated with Fee Offset Claimed	Unsold Aggregate Offering Amount Associated with Fee Offset Claimed	Fee Paid with Fee Offset Source
					Rule 457(p)						
Fee Offset Claims											
Fee Offset Sources											