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 (State or other jurisdiction of incorporation or organization)

331 Treble Cove Road North Billerica, Massachusetts 01862 (Address of Principal Executive Offices) 35-2318913 (I.R.S. Employer Identification No.) 01862

(Zip Code)

2015 Equity Incentive Plan (Full Title of Plan)

Daniel Niedzwiecki Senior Vice President and General Counsel 331 Treble Cove Road, Building 600-2 North Billerica, Massachusetts 01862 (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	\Box
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. \Box

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Amount to be Registered (1)	Proposed Maximum Offering Price Per Share (2)	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, \$0.01 par value per share, reserved for issuance				
pursuant to the Lantheus Holdings, Inc. 2015 Equity Incentive				
Plan, as amended	2,600,000	\$26.02	\$67,652,000.00	\$7,380.83

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement also covers an indeterminate number of securities that may become issuable under the 2015 Equity Incentive Plan, as amended, as a result of any stock splits, stock dividends, recapitalizations or similar transactions.
- (2) Estimated solely for purposes of calculating the registration fee pursuant to Rule 457(c) and Rule 457(h) under the Securities Act, based on the average of the high and low sales prices of the Registrant's common stock on The NASDAQ Global Market on July 28, 2021.

EXPLANATORY NOTE

Lantheus Holdings, Inc. (the "Registrant") is filing this Registration Statement on Form S-8 (this "Registration Statement") to register an additional 2,600,000 shares of its common stock, par value \$0.01 per share, that may be issued and sold under the Lantheus Holdings, Inc. 2015 Equity Incentive Plan, as amended (the "Plan"), following the amendment to the Plan that was approved by the Registrant's stockholders at its annual meeting on April 28, 2021. This Registration Statement is submitted in accordance with General Instruction E to 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 and File No. 333-232919) filed with the Securities and Exchange Commission on June 25, 2015, October 31, 2016, August 18, 2017 and July 31, 2019, 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	Amended and Restated Bylaws of Lantheus Holdings, Inc.	8-K	001-36569	3.2	April 27, 2018
4.3	Common Stock Certificate.	8-K	001-36569	4.1	June 30, 2015
4.4	Lantheus Holdings, Inc. 2015 Equity Incentive Plan.	S-1	333-196998	10.37	June 24, 2015
4.5	Form of 2015 Restricted Stock Agreement.	S-1	333-196998	10.38	June 24, 2015
4.6	Form of 2015 Option Award Agreement.	S-1	333-196998	10.39	June 24, 2015
4.7	Amendment to Lantheus Holdings, Inc. 2015 Equity Incentive Plan.	8-K	001-36569	10.1	April 28, 2016
4.8	Second Amendment to Lantheus Holdings, Inc. 2015 Equity Incentive Plan.	8-K	001-36569	10.1	April 28, 2017
4.9	Third Amendment to Lantheus Holdings, Inc. 2015 Equity Incentive Plan.	10-Q	001-36569	10.1	April 30, 2019
4.10	Fourth Amendment to Lantheus Holdings, Inc. 2015 Equity Incentive Plan.	8-K	001-36569	10.1	April 26, 2019
4.11	Fifth Amendment to Lantheus Holdings, Inc. 2015 Equity Incentive Plan.	8-K	001-36569	10.1	April 29, 2021
5.1*	<u>Legal Opinion of Foley Hoag LLP.</u>				
23.1*	<u>Consent of Independent Registered Public Accounting Firm, Deloitte & Touche LLP.</u>				
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).				

^{*} 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 North Billerica, Commonwealth of Massachusetts, on August 4, 2021.

Lantheus Holdings, Inc.

By: /s/ Mary Anne Heino

Name: Mary Anne Heino

Title: President and 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	President, Chief Executive Officer and Director	
Mary Anne Heino	(Principal Executive Officer)	August 4, 2021
/s/ Robert J. Marshall, Jr.	Chief Financial Officer	
Robert J. Marshall, Jr.	(Principal Financial Officer)	August 4, 2021
/s/ Andrea Sabens	Chief Accounting Officer	
Andrea Sabens	(Principal Accounting Officer)	August 4, 2021
/s/ Brian Markison		
Brian Markison	Chairman of the Board of Directors	August 4, 2021
/s/ Dr. Gerard Ber		
Dr. Gerard Ber	Director	August 4, 2021
/s/ Samuel Leno		
Samuel Leno	Director	August 4, 2021
/s/ Heinz Mäusli		
Heinz Mäusli	Director	August 4, 2021
/s/ Julie McHugh		
Julie McHugh	Director	August 4, 2021
/s/ Gary Pruden		
Gary Pruden	Director	August 4, 2021
/s/ Dr. James Thrall		
Dr. James Thrall	Director	August 4, 2021



Seaport West 155 Seaport Boulevard Boston, MA 02210-2600

617 832 1000 main 617 832 7000 fax

August 4, 2021

Lantheus Holdings, Inc. 331 Treble Cove Road North Billerica, Massachusetts 01862

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 2,600,000 shares (the "Shares") of its common stock, par value \$0.01 per share ("Common Stock"), issuable under the Company's 2015 Equity Incentive Plan (the "2015 Plan").

In arriving at the opinions expressed below, we have examined and relied upon the Certificate of Incorporation and Bylaws of the Company, the records of meetings and consents of the Company's Board of Directors and of its stockholders, and the 2015 Plan, as amended, each as provided to us by the Company. In addition, we have examined and relied on the originals or copies certified or otherwise identified to our satisfaction of all such corporate records of the Company and such other documents and certificates of public officials, officers and representatives of the Company and such other persons, and we have made such investigations of law, as we have deemed appropriate as a basis for the opinions 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 opinions 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 2015 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.

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

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 25, 2021, 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, 2020.

/s/ Deloitte & Touche LLP

Boston, Massachusetts August 4, 2021