



DIVISION OF
CORPORATION FINANCE

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

June 11, 2015

Via E-mail

Michael P. Duffy
Vice President, General Counsel and Secretary
331 Treble Cove Road, Building 600-2
North Billerica, Massachusetts 01862

**Re: Lantheus Holdings, Inc.
Registration Statement on Form S-1
Filed June 8, 2015
File No. 333-196998**

Dear Mr. Duffy:

We have reviewed your registration statement and have the following comment.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comment applies to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to this comment, we may have additional comments.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Results of Operations
Gross Profit, page 68

1. We note your gross profit for the quarterly period ended March 31, 2015 was approximately 48% compared to approximately 41% for the quarterly period ended March 31, 2014. Please address the following:
 - You state that TechneLite revenues decreased \$1.9 million during the period primarily related as a result of lower volumes, while TechneLite cost of goods sold decreased \$3.2 million due to lower sales unit volumes. Please revise your disclosure to explain the reason for the disproportionate decrease in TechneLite revenues and cost of goods sold. If there are other significant contributing factors, please disclose those as well.

- Please disclose the nature of the technology transfer costs, and why these costs decreased and contributed to the \$2.1 million decrease in costs of goods sold attributed to Neurolite.
- You disclose on page 64 regarding Cardinal Supply Agreements that you currently anticipate that overall quarterly levels for the remainder of 2015 will be lower than those experienced during the first quarter of 2015 and during the respective year-ago periods. Please disclose the effect of this and any other known events, uncertainties, trends or commitments on your gross profit percentage in future quarters.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement, please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Tabatha McCullom at (202) 551-3658 or James Rosenberg at (202) 551-3679 if you have questions regarding comments on the financial statements and related

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matters. Please contact Christina De Rosa at (202) 551-3577, John Krug at (202) 551-3862 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Daniel Greenspan for

Jeffrey P. Riedler
Assistant Director

cc: Via E-mail
Heather Emmel, Esq.
Weil, Gotshal & Manges LLP
767 Fifth Avenue
New York, NY 10153