



DIVISION OF
CORPORATION FINANCE

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

November 27, 2012

Via E-mail

Frederick D. Furry
Chief Financial Officer
Biolase, Inc.
4 Cromwell
Irvine, California 92618

**Re: Biolase, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2011
Filed March 13, 2012
File No. 000-19627**

Dear Mr. Furry:

We have reviewed your filings and have the following comments. We have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your documents. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by providing the requested information or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances please tell us why in your response.

After reviewing the information you provide in response to these comments, we may have additional comments.

Form 10-K for the Fiscal Year Ended December 31, 2011

Item 8. Financial Statements and Supplementary Data

Note 2. Summary of Significant Accounting Policies

Revenue Recognition, page F-11

1. Please tell us about the nature of your sales of used laser trade-ins and quantify these sales for the periods presented. Discuss whether these sales are pursuant to trade-in rights granted to your customers. Please cite the accounting literature upon which you relied and how you applied that literature to your transactions. Please also discuss your accounting for transactions in which cash consideration is less than 25% of the total

transaction and quantify these sales for the periods presented. In addition, please explain how you determine the estimated fair value of used lasers on the date of receipt.

Provision for Warranty Expense, page F-12

2. Please tell us in more detail how you determine the amount of your warranty accrual. As part of your response, please explain why the provision for estimated warranty costs as a percentage of product sales has fluctuated significantly between each period presented. Please address for the periods presented and for the nine months ended September 30, 2012.

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 Exchange Act of 1934 and all applicable Exchange 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.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

You may contact Kristin Lochhead, Staff Accountant, at (202) 551-3664 or Kate Tillan, Assistant Chief Accountant, at (202) 551-3604 if you have any questions regarding the comments on the financial statements and related matters. Please contact me at (202) 551-3671 with any other questions.

Sincerely,

/s/ Kate Tillan for

Martin James
Senior Assistant Chief Accountant

cc: Mike Carroll, Esq.