



DIVISION OF
CORPORATION FINANCE

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

January 31, 2013

Via E-mail

Helene Simonet
Principal Financial and
Accounting Officer
Coherent, Inc.
5100 Patrick Henry Drive
Santa Clara, California 95054

**Re: Coherent, Inc.
Form 10-K for the Fiscal Year Ended September 29, 2012
Filed November 28, 2012
File No. 001-33962**

Dear Ms. Simonet:

We have reviewed your filing and have the following comments. 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 amending your filing, 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 or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Form 10-K for the Fiscal Year Ended September 29, 2012

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operation

Key Performance Indicators, page 36

1. We see that you disclose Adjusted EBITDA as a percentage of Net Sales in the table on page 36 and include a definition of this non-GAAP measure on page 39. Please revise future filings to provide all the disclosures required by Item 10(e) of Regulation S-K, including a reconciliation of the non-GAAP measure to the most directly comparable GAAP measure, the reasons why management believes the measure provides useful

information to investors and the additional purposes for which your management uses the non-GAAP measure.

2. Please tell us where you include in the Management's Discussion and Analysis of Financial Condition and Results of Operations of your public filings a discussion of the effect of excimer laser systems becoming a larger portion of your revenue. We note your CFO's statement in your October 31, 2012 conference call regarding you being more susceptible to wider revenue swings and the related effect of a supply issue. In this regard, please also tell us when and how the supply issue was resolved, and quantify the impact of the issue on your results for the first quarter of this fiscal year, including the amount of revenue delayed from the prior fiscal year's fourth quarter into the current fiscal year's first quarter.

Results of Operations – Net Sales, page 41

3. We note your discussion of the significant decrease in net sales in fiscal 2012 related to lower shipments or lower demand for certain products. Please revise future filings to clarify the underlying reason for lower shipments or demand and disclose, if possible, whether this is expected to have a significant impact on future operations.

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.

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You may contact Andri Boerman at 202-551-3645 or me at 202-551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Brian Soares at 202-551-3580 or Russell Mancuso at 202-551-3617 with any other questions.

Sincerely,

/s/ Brian Cascio

Brian Cascio
Accounting Branch Chief