



DIVISION OF
CORPORATION FINANCE

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

September 7, 2012

Via E-mail

Mr. Louis Scafuri
Chief Executive Officer
Syneron Medical Ltd.
Industrial Zone, Tavor Building P.O. Box 550
Yokneam Illit 20692 ISRAEL

**Re: Syneron Medical Ltd.
Form 20-F for the Fiscal Year Ended December 31, 2011
Filed March 29, 2012
Response Letter Dated August 28, 2012
File No. 0-50867**

Dear Mr. Scafuri:

We have reviewed your response letter 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 20-F for the Fiscal Year Ended December 31, 2011

Supplemental Non-GAAP Income Data, page 60

1. We noted your response to our prior comments 3 through 6. Please amend this filing to remove the non-GAAP disclosures referenced in our prior comments and tell us when you expect to file such amendment.

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Form 6-K dated May 9, 2012

2. We noted from your response to our prior comment 9 that you intend to amend this Form 6-K to only incorporate the financial statement tables included in the press release in the Form 6-K dated May 9, 2012 (pages 6-8 of the press release) by reference into your Registration Statements on Form S-8 filed with the Securities and Exchange Commission on November 16, 2004 (Registration No. 333-120559), on January 8, 2010 (Registration No. 333-164250) and on January 15, 2010 (Registration No. 333-164351). Please tell us your basis under the securities laws for only incorporating certain pages of your Form 6-K by reference into your Registration Statements on Form S-8.

You may contact Gary Newberry, Staff Accountant, at (202) 551-3761 or Jay Webb, Reviewing Accountant, at (202) 551-3603 if you have questions regarding comments on the financial statements and related matters. In this regard, do not hesitate to contact me at (202) 551-3643.

Sincerely,

/s/ Kevin L. Vaughn

Kevin L. Vaughn
Accounting Branch Chief