

Mail Stop 6010

July 27, 2005

Joseph V. Gulfo, M.D.
President and Chief Financial Officer
Electro-Optical Sciences, Inc.
3 West Main Street, Suite 201
Irvington, NY 10533

Re: Electro-Optical Sciences, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed July 15, 2005
File No. 333-125517

Dear Dr. Gulfo:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form S-1

Financial Statements

Statements of Operations, page F-4

1. Please tell us why your pro forma losses per share are not calculated using the loss from continuing operations. Refer to SAB Topic 1B2 and Article 11 of Regulation S-X. Revise the filing as necessary based on our comment.

Statements of Cash Flows, page F-6

2. We see this Statement indicates you "redeemed" marketable securities during the June 30, 2005 interim period. Please tell us why classification of marketable securities as held-to-maturity under FAS 115 is appropriate if you are redeeming securities. Tell us, in detail, how your accounting for marketable securities complies with FAS 115. Revise the filing as necessary based on our comment or tell us why no revisions are considered necessary.

Note 8. Stockholders` (Deficiency) Equity and Redeemable Preferred Stock, page F-14

3. Please refer to prior comment 32 from our letter dated June 30, 2005. We note your previous response to our comment which detailed the allocation of the net proceeds based on the relative fair values of the warrants and the Series C preferred stock. However, you have not addressed how you determined the total amount of the

beneficial conversion feature and its recognition in your statements of operations during the periods presented nor have you discussed how you calculated the effective conversion price of the Series C preferred stock. Please provide us with this information. Additionally, please tell us the specific issues and guidance included in EITF 98-5 and EITF 00-27 upon which you relied to support your accounting and disclosures for this transaction, rather than simply citing the entire EITF.

Redemption Provisions, page F-16

4. We note that you present and refer to your Series B and Series C preferred stock as "temporary equity". Tell us why this presentation is appropriate as opposed to classifying the securities as liabilities in accordance with SFAS 150. Please revise your financial statements and the notes thereto to properly present and disclose these items or tell us why your current designation as "temporary equity", rather than liabilities, is proper. Please cite the appropriate authoritative literature that supports your conclusions.

Exhibit 23.1

5. Please refer to prior comment 37 from our letter dated June 30, 2005. Please include a currently dated and signed consent from your independent auditors with any amendment filed.

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As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

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 all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment decision. 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.

You may contact Kevin Kuhar at (202) 551-3662 or Jay Webb at (202) 551-3603 if you have questions regarding comments on the financial statements and related matters. Please contact Adelaja Heyliger at (202) 551-3636 or me at (202) 551-3800 with any other questions.

Sincerely,

Peggy A. Fisher
Assistant Director

cc (via fax): Valerie A. Price, Esq., Dreir LLP 212.652.3789
David C. Peck, Esq., Greenberg Traurig, LLP 212.801.6400

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