

Mail Stop 6010

August 2, 2006

By U.S. Mail and Facsimile to (858) 202-4545

Mr. Christian O. Henry
Vice President and Chief Financial Officer
Illumina, Inc.
9885 Towne Centre Drive
San Diego, CA 92121

**RE: Illumina, Inc.
Form 8-K filed July 18, 2006
File No. 0-30361**

Dear Mr. Henry:

We have reviewed your letter dated on July 6, 2006 and have the following comments. Where indicated, we think you should revise your future documents 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 8-K filed July 18, 2006

1. Please refer to prior comment 4. Your revised disclosures related to the non-GAAP measures included in Form 8-K filed on July 18, 2006 do not include all of the disclosures required by paragraph (e)(1)(i) of Item 10 of Regulation S-K and Question 8 of the FAQ Regarding the Use of Non-GAAP Financial Measures dated June 13, 2003. Please revise future filings to specifically include a discussion, in sufficient detail, of the following for each non-GAAP measure:

- The substantive reasons why management believes each non-GAAP measure provides useful information to investors;
- The specific manner in which management uses each non-GAAP measure to conduct or evaluate its business;
- The economic substance behind management's decision to use each measure; and
- The material limitations associated with the use of each non-GAAP measure as compared to the use of the most directly comparable GAAP measure and the manner in which management compensates for these limitations when using the non-GAAP measure.

Your current disclosures are generic and vague and do not provide the reader sufficient information to understand each non-GAAP measure.

2. We note your disclosure that management uses these measures "when evaluating its financial results." We also note the disclosures that these non-GAAP measures are the primary indicators management uses for planning and forecasting in future periods. Please revise to address the following:

- Please confirm that the adjustments reflected in your non-GAAP measures are also reflected in, and are consistent with, the measurement principles you use to assess segment performance pursuant to SFAS 131
- Otherwise, discuss the reasons for any differences in the two approaches. We may have further comment.

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As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter 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 responses to our comments.

You may contact Eric Atallah, Staff Accountant at (202) 551-3663 or me at (202) 551-3554 regarding comments on the financial statements and related matters. In this regard, do not hesitate to contact Martin James, Senior Assistant Chief Accountant, at (202) 551-3671 with any other questions.

Sincerely,

Angela Crane
Branch Chief