



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 6010

February 12, 2008

Mr. Gary C. Schaefer
Chief Financial Officer
Nanometrics Incorporated
1550 Buckeye Drive
Milpitas, California 95035

**RE: Nanometrics Incorporated
Form 10-K for the fiscal year ended December 30, 2006
Filed March 15, 2007
File No. 0-13470**

Dear Mr. Schaefer:

We have reviewed your response dated January 25, 2008 and have the following comments. We have limited our review to matters related to the issues raised in our comments and we will make no further review of your documents. 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.

Form 10-Q for the period ended September 29, 2007

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 14

Critical Accounting Policies – Revenue Recognition, page 16

1. We note that revenue recognition “generally” occurs at the time of shipment when you have met defined customer acceptance experience levels with both the customer and the specific type of equipment.
 - Describe the contractual acceptance provisions you have with the customer. Tell us whether the customer has the right to terminate the contract or to demand a refund if the customer-specified conditions are not met. We assume that these clauses are legally enforceable. Please advise.
 - Tell us to what extent you are able to duplicate a customer’s specific environment if products are tested prior to shipment. Tell us your consideration of the guidance in Question 1 of SAB Topic 13.A.3b which states, “the delivery criterion would generally be satisfied...unless product performance may reasonably be different under the customer’s testing conditions specified by the acceptance provisions.”
 - Also, tell us your consideration of the guidance in Question 2 of SAB Topic 13.A.3b which states, “if an arrangement includes customer acceptance criteria or specifications that cannot be effectively tested before delivery or installation at the customer’s site, the staff believes that revenue recognition should be deferred until it can be demonstrated that the criteria are met.”
 - Describe all remaining installation obligations and explain your reasons for concluding that they are not essential to the functionality of the equipment.
 - Document how you have met the criteria outlined in SAB 104 to recognize revenue.

2. For all other products, we note that you recognize revenue upon “customer acceptance including deemed acceptance”. We also note that in Japan revenue is recognized upon “customer technical acceptance.”
 - Tell us what is meant by “deemed” acceptance and “customer technical” acceptance.
 - Explain your client acceptance process and the documents that record the acceptance by the customer. Explain what portion of the contract fee is contingent upon a successful installation.
 - Describe the contractual terms entered into with the customer and provide a sample contract for our review.

3. We note that you have multiple deliverables in some customer arrangements, whereby you sell both repair services and parts together and defer revenue until both repair services and parts are delivered. Please tell us more about these arrangements, specifically if there are any return rights or customer acceptance of the items shipped.
4. Please refer to your response letter dated January 25, 2008. The two deferred transactions the company intends to “net settle”, as you indicate, represent deferred revenue and deferred product cost. These do not appear to represent determinable amounts each of two parties owes the other (paragraph 5.a. FIN 39). Please address your response to the specific conditions for right of offset as defined in FIN 39 explaining why you believe you meet the criteria.

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 with your response that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please file your cover letter on EDGAR. Please understand that we may have additional comments after reviewing your responses to our comments.

You may contact Dennis Hult, Staff Accountant, at (202) 551-3618 or me at (202) 551-3554 if you have questions regarding these comments. In this regard, do not hesitate to contact Martin F. James, Senior Assistant Chief Accountant, at (202) 551-3671.

Sincerely,

Angela J. Crane
Accounting Branch Chief