



DIVISION OF  
CORPORATION FINANCE

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

Mail Stop 3030

August 4, 2009

Mr. James P. Moniz  
Chief Financial Officer  
Nanometrics Incorporated  
1550 Buckeye Drive  
Milpitas, California 95035

RE: **Nanometrics Incorporated**  
**Form 10-K for the fiscal year ended December 27, 2008**  
**Filed March 27, 2009**  
**Form 8-K/A filed August 4, 2008**  
**File No. 0-13470**

Dear Mr. Moniz:

We have completed our review of your Form 10-K and related filings and do not, at this time, have any further comments.

Sincerely,

James Martin  
Senior Assistant Chief Accountant