SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K/A

Amendment No. 1 to

CURRENT REPORT

Pursuant to Section 13 or 15(d) of

the Securities Exchange Act of 1934

January 25, 2006

Date of Report (date of earliest event reported)

NANOMETRICS INCORPORATED

(Exact name of Registrant as specified in its charter)

California (State or other jurisdiction of incorporation or organization) 000-13470 (Commission File Number) 92-2276314 (I.R.S. Employer Identification Number)

1550 Buckeye Drive

Milpitas, California 95035

(Address of principal executive offices)

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(408) 435-9600

(Registrant s telephone number, including area code)

N/A

(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- " Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- " Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- " Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c)

EXPLANATORY NOTE

This Amendment No. 1 to Current Report on Form 8-K/A is filed for the purpose of amending the Current Report on Form 8-K of Nanometrics Incorporated (the Company) dated January 25, 2006, filed with the Securities and Exchange Commission on January 26, 2006, to file as Exhibit 2.1 the Agreement and Plan of Merger and Reorganization dated January 25, 2006 by and among the Company, Alloy Merger Corporation, Accent Optical Technologies, Inc., and, solely with respect to Article IX, Sanford S. Wadler, to file as Exhibit 2.2 the Form of Voting Agreement by and among the Company, Accent Optical Technologies, Inc., and to file as Exhibit 2.3 the Form of Shareholder Agreement by and between the Company and certain shareholders of Accent Optical Technologies, Inc. Technologies, Inc.

Item 9.01.	Financial Statements and Exhibits

(d) Exhibits.

The following exhibits are filed herewith:

Exhibit No.	Description
2.1	Agreement and Plan of Merger and Reorganization dated January 25, 2006 by and among Nanometrics Incorporated, Alloy Merger Corporation, Accent Optical Technologies, Inc., and, solely with respect to Article IX, Sanford S. Wadler.
2.2	Form of Voting Agreement by and among Nanometrics Incorporated, Accent Optical Technologies, Inc. and certain shareholders of Accent Optical Technologies, Inc.
2.3	Form of Shareholder Agreement by and between Nanometrics Incorporated and certain shareholders of Accent Optical Technologies, Inc.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

NANOMETRICS INCORPORATED

Date: February 21, 2006 By: /s/ Douglas J. McCutcheon

Douglas J. McCutcheon Chief Financial Officer

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EXHIBIT INDEX

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