

Crawford Bruce A
 Form 5
 February 12, 2010

FORM 5

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

OMB APPROVAL

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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).
 Form 3 Holdings Reported Form 4 Transactions Reported

ANNUAL STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person *
 Crawford Bruce A

(Last) (First) (Middle)

C/O NANOMETRICS, INC., 1550
 BUCKEYE DRIVE

(Street)

MILPITAS, CA 95035

(City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol
 NANOMETRICS INC [NANO]

3. Statement for Issuer's Fiscal Year Ended (Month/Day/Year)
 12/31/2009

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

Director 10% Owner
 Officer (give title below) Other (specify below)
 Chief Operating Officer

6. Individual or Joint/Group Reporting

(check applicable line)

Form Filed by One Reporting Person
 Form Filed by More than One Reporting Person

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | 4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | 5. Amount of Securities Beneficially Owned at end of Issuer's Fiscal Year (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|--|--|-----------------------------------|
| | | | | (A) or (D) | Amount or Price | | |
| Common Stock | 04/30/2009 | ^ | J | (A) | 5,000 <u>(1)</u> \$ 1.06 | 0 | ^ |
| Common Stock | 12/31/2009 | ^ | J | (A) | 2,527 <u>(1)</u> \$ 2.29 | 67,131 | ^ |

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned
(e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5) | 6. Date Exercisable and Expiration Date (Month/Day/Year) | 7. Title and Amount of Underlying Securities (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Price of Underlying Security (Instr. 5) |
|--|--|--------------------------------------|--|--------------------------------|---|--|---|--|--|
| | | | | | (A) (D) | Date Exercisable Expiration Date | Title | Amount or Number of Shares | |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|---|---------------|-----------|---------------------------|-------|
| | Director | 10% Owner | Officer | Other |
| Crawford Bruce A C/O NANOMETRICS, INC. 1550 BUCKEYE DRIVE MILPITAS, CA 95035 | Â | Â | Â Chief Operating Officer | Â |

Signatures

/s/ James P. Moniz,
Attorney-In-Fact

02/11/2010

__Signature of Reporting Person

Date

Explanation of Responses:

* If the form is filed by more than one reporting person, see Instruction 4(b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

(1) Shares were purchased under an employee stock purchase plan pursuant to Rule 16b-3(c).

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