

Crawford Bruce A
 Form 4
 December 29, 2010

FORM 4

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

OMB APPROVAL

OMB Number: 3235-0287
 Expires: January 31, 2015
 Estimated average burden hours per response... 0.5

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

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

(Print or Type Responses)

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. Date of Earliest Transaction
 (Month/Day/Year)
 09/03/2009

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 Filing(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 Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|-----------------------------------|
| | | | | (A) or (D) | Price | | |
| Common Stock | 12/27/2010 | | M | 1,389 | A \$ 0.98 | 65,388 | D |
| Common Stock | 12/27/2010 | | M | 229 | A \$ 7.5 | 65,617 | D |
| Common Stock | 12/27/2010 | | S | 1,618 <u>(1)</u> | D \$ 13.23 | 63,999 | D |

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

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number.

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 Underlying Security (Instr. 3 and 4) |
|--|--|--------------------------------------|--|--------------------------------|---|--------|--|-----------------|---|
| | | | | | (A) | (D) | Date Exercisable | Expiration Date | |
| Non-Qualified Stock Option (right to buy) | \$ 7.5 | 09/03/2009 | | A | 8,262 | | (2) | 09/03/2016 | Common Stock |
| Non-Qualified Stock Option (right to buy) | \$ 15.98 | 09/03/2009 | | D | | 16,525 | (4) | 01/25/2016 | Common Stock |
| Non-Qualified Stock Option (right to buy) | \$ 0.98 | 12/27/2010 | | M | | 1,389 | (5) | 11/19/2015 | Common Stock |
| Non-Qualified Stock Option (right to buy) | \$ 7.5 | 12/27/2010 | | M | | 229 | (2) | 09/03/2016 | Common Stock |

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 | | | Chief Operating Officer | |

Signatures

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

12/28/2010

**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) The sales reported in this Form 4 were effected pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on August 30, 2010.

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- (2) One third (1/3rd) of the shares are fully vested on the date of grant, with the remaining shares vesting (starting on the one year anniversary of the date of grant) at a rate of one twenty-fourth (1/24th) per month until fully vested on September 3, 2012.
- (3) The reporting person agreed to cancellation of an option granted to him on July 21, 2006, in exchange for a new option having a lower exercise price.
- (4) The shares vest in three equal annual installments beginning on January 25, 2007.
- (5) One thirty-sixth (1/36th) of the shares shall vest and become exercisable in equal monthly installments starting on the monthly anniversary of the date of grant (November 19, 2008).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.