

Crawford Bruce A
 Form 4
 December 23, 2010

FORM 4 UNITED STATES SECURITIES AND EXCHANGE COMMISSION
 Washington, D.C. 20549

OMB APPROVAL
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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)
 12/20/2010

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)
			Code	V	Amount or Price (A) or (D)		
Common Stock	12/20/2010		M		18,072 A \$ 8.89		D
Common Stock	12/20/2010		M		4,167 A \$ 0.98		D
Common Stock	12/20/2010		M		2,222 A \$ 1.17		D
Common Stock	12/20/2010		M		459 A \$ 7.5		D
Common Stock	12/20/2010		S		24,920 (1) D \$ 13		D

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Common Stock	12/21/2010		M	3,722	A	\$ 8.89	67,721	D
Common Stock	12/21/2010		M	4,864	A	\$ 8.55	72,585	D
Common Stock	12/21/2010		M	12,500	A	\$ 6.25	85,085	D
Common Stock	12/21/2010		M	2,754	A	\$ 7.5	87,839	D
Common Stock	12/21/2010		S	<u>23,840</u> (1)	D	\$ 13	63,999	D

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

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(9-02)

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 Security (Instr. 3 and 4)	8. Amount or Number of Shares
Non-Qualified Stock Option (right to buy)	\$ 8.89	12/20/2010		M	10,329	(2) 07/24/2013	Common Stock	10,329
Non-Qualified Stock Option (right to buy)	\$ 8.89	12/20/2010		M	4,648	(3) 07/24/2013	Common Stock	4,648
Non-Qualified Stock Option (right to buy)	\$ 8.89	12/20/2010		M	3,095	(4) 07/24/2013	Common Stock	3,095
Non-Qualified Stock Option (right to buy)	\$ 0.98	12/20/2010		M	4,167	(5) 11/19/2015	Common Stock	4,167
Non-Qualified Stock Option (right to buy)	\$ 1.17	12/20/2010		M	2,222	(6) 02/25/2016	Common Stock	2,222

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Non-Qualified Stock Option (right to buy)	\$ 7.5	12/20/2010	M	459	(7)	09/03/2016	Common Stock	45
Non-Qualified Stock Option (right to buy)	\$ 8.89	12/21/2010	M	2,066	(8)	07/24/2013	Common Stock	2,0
Non-Qualified Stock Option (right to buy)	\$ 8.89	12/21/2010	M	1,656	(4)	07/24/2013	Common Stock	1,6
Non-Qualified Stock Option (right to buy)	\$ 8.55	12/21/2010	M	4,864	(9)	11/30/2013	Common Stock	4,8
Non-Qualified Stock Option (right to buy)	\$ 6.25	12/21/2010	M	6,250	(10)	06/08/2014	Common Stock	6,2
Non-Qualified Stock Option (right to buy)	\$ 6.25	12/21/2010	M	6,250	(10)	02/25/2016	Common Stock	6,2
Non-Qualified Stock Option (right to buy)	\$ 7.5	12/21/2010	M	2,754	(7)	09/03/2016	Common Stock	2,7

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

12/23/2010

__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.
 - (2) On the date of grant, 3,012 shares were fully vested with the remaining shares vesting at a rate of one forty-eighth per month until fully vested on April 28, 2009.
 - (3) On the date of grant, 1,649 shares were fully vested with the remaining shares vesting at a rate of one forty-eighth per month until fully vested on February 18, 2009.

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- (4) On the date of grant, 2,970 shares were fully vested with the remaining shares vesting at a rate of one forty-eighth per month until fully vested on January 22, 2008.
- (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).
- (6) 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 (February 25, 2009).
- (7) 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.
- (8) The option is fully vested on the date of grant.
- (9) Shares vest and become exercisable in three equal annual installments beginning on November 30, 2007.

- On June 8, 2007, the reporting person was granted an option to purchase 25,000 shares of common stock. Twenty-five percent of the shares subject to the option shall begin vesting ratably monthly over a two-year period based on Nanometric's satisfaction of certain performance criteria for each of the second, third and fourth fiscal quarters of 2007 and the second, third and fourth fiscal quarters combined. The performance criteria for the second fiscal quarter were satisfied on August 1, 2007, resulting in the vesting commencement of 6,250 shares on that date.
- (10)

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