

Martin Brian
Form 4
August 11, 2009

FORM 4

**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).

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 *
Martin Brian

2. Issuer Name and Ticker or Trading Symbol
KLA TENCOR CORP [KLAC]

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

(Last) (First) (Middle)

3. Date of Earliest Transaction (Month/Day/Year)
08/07/2009

____ Director _____ 10% Owner
 Officer (give title below) _____ Other (specify below)
Senior VP & General Counsel

C/O KLA-TENCOR CORPORATION, ONE TECHNOLOGY DRIVE

(Street)

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

6. Individual or Joint/Group Filing(Check Applicable Line)
 Form filed by One Reporting Person
 Form filed by More than One Reporting Person

MILPITAS, CA 95035

(City) (State) (Zip)

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 Indirect Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|---|
| Common Stock | 08/07/2009 | | S | 3,350 | D | \$ 31,1405 (1) | 6,624 D |
| Common Stock | 08/08/2009 | | A | 1,961 | A | (2) | 8,585 D |
| Common Stock | 08/08/2009 | | F | 702 | (3) D | \$ 31.21 | 7,883 D |
| Common Stock - Restricted | | | | | | | 61,411 (5) D |

Stock Units

(4)

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

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SEC 1474
(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 Securities (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Number of Derivative Securities Beneficially Owned Following Transaction (Instr. 6) |
|--|--|--------------------------------------|--|--------------------------------|---|--|---|--|--|
| | | | | Code | V (A) (D) | Date Exercisable | Expiration Date | Title | Amount or Number of Shares |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|--|---------------|-----------|-----------------------------------|-------|
| | Director | 10% Owner | Officer | Other |
| Martin Brian C/O KLA-TENCOR CORPORATION ONE TECHNOLOGY DRIVE MILPITAS, CA 95035 | | | Senior VP & General Counsel | |

Signatures

Brian M. Martin 08/11/2009

__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) This transaction was executed in multiple trades at prices ranging from \$31.14 to \$31.141. The price reported above reflects the weighted average purchase price. The Reporting Person hereby undertakes to provide upon request to the SEC staff, the issuer or a security holder of the issuer full information regarding the number of shares and prices at which the transaction was effected.

(2)

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On August 8, 2007, Mr. Martin received a grant of performance-based restricted stock units ("RSUs") that, following completion of fiscal year 2008, were determined by the Compensation Committee of KLA-Tencor's Board of Directors (in August 2008) to cover, based on KLA-Tencor's financial performance during fiscal year 2008, 3,922 shares of KLA-Tencor common stock. On August 8, 2009, Mr. Martin vested in fifty percent (50%) of such RSUs.

- Pursuant to the terms of the August 8, 2007 RSU grant, 702 shares of KLA-Tencor common stock were automatically withheld at vesting to cover required tax withholding. Because the vesting date of such RSUs occurred on a day on which the NASDAQ Stock Market was closed for trading, the fair market value of KLA-Tencor common stock used for purposes of calculating the number of shares to be withheld was the closing price of KLA-Tencor common stock on the last completed trading day immediately prior to such vesting date.
- (3) Each restricted stock unit represents a contingent right to receive one share of KLA-Tencor common stock.
 - (4) Does not include performance-based restricted stock units, if any, held by the Reporting Person for which an assessment has not yet been made regarding the achievement of the applicable performance goals. Any such holdings will be reported on Form 4 within two business days of the date such assessment is made.
 - (5)

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.