

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 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

| | | |
|---|---|---|
| 1. Name and Address of Reporting Person * Kirloskar Virendra A (Last) (First) (Middle) C/O KLA-TENCOR CORPORATION, ONE TECHNOLOGY DRIVE (Street) MILPITAS, CA 95035 (City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol KLA TENCOR CORP [KLAC] 3. Date of Earliest Transaction (Month/Day/Year) 09/07/2016 4. If Amendment, Date Original Filed(Month/Day/Year) | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input type="checkbox"/> Director <input type="checkbox"/> 10% Owner <input checked="" type="checkbox"/> Officer (give title below) <input type="checkbox"/> Other (specify below) <div style="border: 1px solid black; padding: 2px; text-align: center;">SVP & Chief Accounting Officer</div> 6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> 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 Indirect Beneficial Ownership (Instr. 4) |
|---|--------------------------------------|--|--------------------------------|---|---|------------|---------|---|--|---|
| | | | Code | V | Amount | (A) or (D) | Price | | | |
| Common Stock - Restricted Stock Units (1) | 09/07/2016 | | A | | 5,062 (2) (3) | A | \$ 0 | 19,567 (4) (5) | D | |
| Common Stock | 09/07/2016 | | M | | 2,531 (6) | A | \$ 0 | 9,505 | D | |
| Common Stock | 09/07/2016 | | F | | 1,202 (7) | D | \$ 70.8 | 8,303 | D | |

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

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.

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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. Number of Derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4) | 10. Ownership Form of Derivative Security: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |
|--|--|--------------------------------------|--|--------------------------------|---|---|-----|--|-----------------|---|--|--|--|--|
| | | | | Code | V | (A) | (D) | Date Exercisable | Expiration Date | | | | | |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|--|---------------|-----------|--------------------------------|-------|
| | Director | 10% Owner | Officer | Other |
| Kirloskar Virendra A C/O KLA-TENCOR CORPORATION ONE TECHNOLOGY DRIVE MILPITAS, CA 95035 | | | SVP & Chief Accounting Officer | |

Signatures

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) Each restricted stock unit ("RSU") represents a contingent right to receive one share of KLA-Tencor common stock.

On August 6, 2013, in addition to the RSUs granted on that date that were subject only to service-vesting requirements (which RSUs were previously reported on Form 4), the Reporting Person was also granted RSUs covering up to a maximum of 5,062 shares (based on 125% of the target shares of 4,050) of KLA-Tencor common stock,

(2) subject to both performance-vesting and service-vesting requirements. Following the completion of KLA-Tencor's audited financial statements for the 2016 fiscal year, on September 7, 2016 the Compensation Committee of KLA-Tencor's Board of Directors determined the level at which the corporate performance goals were attained and, based on the assessment, determined that the number of shares subject to the RSUs is 5,062.

The Reporting Person vested fifty percent (50%) of the performance-based RSUs upon the date on which the Compensation Committee of KLA-Tencor's Board of Directors determined the level at which the underlying performance goals were attained (September 7, 2016) and will vest in the remaining fifty percent (50%) upon his completion of four years of service following the grant date of the award (August 6, 2013). The shares of common stock will be issued as the performance-based RSUs vest.

(4) Does not include performance-based RSUs, 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 a Form 4 within two business days of the date such assessment is made.

(5) Reflects an increase of 5,062 RSUs in connection with the determination of the level at which the August 6, 2013 performance-based RSUs were attained, less the fifty percent (50%) of such award that vested upon such assessment, as described in footnote 3.

As noted in Footnote 2, on August 6, 2013, the Reporting Person received a grant of performance-based RSUs that, following the completion of fiscal year 2016, was

(6) determined by the Compensation Committee of KLA-Tencor's Board of directors (on September 7, 2016) to cover 5,062 shares of KLA-Tencor common stock. On September 7, 2016, the Reporting Person vested in fifty percent (50%) of such performance-based RSUs.

Pursuant to the terms of the August 6, 2013 RSU grant, 1,202 shares of KLA-Tencor common stock were automatically withheld at vesting to cover required tax

(7) withholding. 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 as reported on September 7, 2016.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.

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