

# 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 * <b>Kirloskar Virendra A</b>		2. Issuer Name and Ticker or Trading Symbol <b>KLA TENCOR CORP [KLAC]</b>		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) <b>SVP &amp; Chief Accounting Officer</b>	
(Last) (First) (Middle) <b>C/O KLA-TENCOR CORPORATION, ONE TECHNOLOGY DRIVE</b>		3. Date of Earliest Transaction (Month/Day/Year) <b>08/05/2012</b>			
(Street) <b>MILPITAS, CA 95035</b>		4. If Amendment, Date Original Filed(Month/Day/Year)		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	
(City) (State) (Zip)		<b>Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned</b>			

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	08/05/2012		A		2,475	A	(1)	2,772	D	
Common Stock	08/05/2012		F		908	D	(2)	\$ 52.1 1,864	D	
Common Stock	08/05/2012		A		2,475	A	(3)	4,339	D	
Common Stock	08/05/2012		F		908	D	(4)	\$ 52.1 3,431	D	
Common Stock	08/05/2012		A		4,000	A	(5)	7,431	D	
Common Stock	08/05/2012		F		1,468	D	(6)	\$ 52.1 5,963	D	
Common Stock	08/06/2012		S		5,666	D	(7)	\$ 52.3055 297	D	
Common Stock - Restricted Stock Units (9)								30,650 (10)	D	

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly. SEC 1474 (9-02)

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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
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## Signatures

Brian M. Martin as Attorney-in-Fact for Virendra A. Kirloskar <small>**Signature of Reporting Person</small>		08/07/2012 <small>Date</small>
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## 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) On August 5, 2010, the Reporting Person received a grant of restricted stock units ("RSUs") covering 4,950 shares of KLA-Tencor common stock. On August 5, 2012, the Reporting Person vested in fifty percent (50%) of such RSUs.  
Pursuant to the terms of the August 5, 2010 RSU grant, 908 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 as reported on the NASDAQ Stock Market on the last completed trading day immediately prior to such vesting date.
  - (2) On August 5, 2010, the Reporting Person received a grant of performance-based RSUs that, following the completion of fiscal year 2012, was determined by the Compensation Committee of KLA-Tencor's Board of Directors (in August 2012) to cover, based on KLA-Tencor's financial performance during fiscal years 2011 and 2012, 4,950 shares of KLA-Tencor common stock. On August 5, 2012, the Reporting Person vested in fifty percent (50%) of such performance-based RSUs.  
Pursuant to the terms of the August 5, 2010 RSU grant, 908 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 as reported on the NASDAQ Stock Market on the last completed trading day immediately prior to such vesting date.
  - (3) On August 5, 2008, the Reporting Person received a grant of RSUs covering 8,000 shares of KLA-Tencor common stock. On August 5, 2012, the Reporting Person vested in fifty percent (50%) of such RSUs.  
Pursuant to the terms of the August 5, 2008 RSU grant, 1,468 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 as reported on the NASDAQ Stock Market on the last completed trading day immediately prior to such vesting date.
  - (4) This sale was effected pursuant to a Rule 10b5-1 trading plan adopted by the Reporting Person on December 12, 2011.  
This transaction was executed in multiple trades at prices ranging from \$52.20 to \$52.41. The price reported above reflects the weighted average sales 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.
  - (5) Each RSU represents a contingent right to receive one share of KLA-Tencor common stock.
  - (6) 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 Form 4 within two business days of the date such assessment is made.

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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