

Kirloskar Virendra A  
 Form 4  
 January 31, 2011

**FORM 4**

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

OMB APPROVAL

OMB Number: 3235-0287  
 Expires: January 31, 2005  
 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 \*  
 Kirloskar Virendra A

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)  
 C/O KLA-TENCOR CORPORATION, ONE TECHNOLOGY DRIVE

3. Date of Earliest Transaction (Month/Day/Year)  
 01/27/2011

\_\_\_ Director \_\_\_ 10% Owner  
 Officer (give title below) \_\_\_ Other (specify below)  
 SVP & Chief Accounting Officer

(Street)  
 MILPITAS, CA 95035

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

(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)		
				Code	V	Amount				(A) or (D)	Price
Common Stock	01/27/2011		M			6,067	A	\$ 39.89	19,114	D	
Common Stock	01/27/2011		M			3,250	A	\$ 39.89	22,364	D	
Common Stock	01/27/2011		S <sup>(1)</sup>			12,593	D	\$ 45	9,771	D	
Common Stock	01/28/2011		S <sup>(2)</sup>			2,532	D	\$ 45.26	7,239	D	
Common Stock -									38,150 <sup>(4)</sup>	D	

Restricted  
Stock Units  
(3)

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)	Amount or Number of Shares
Non-Qualified Stock Option (Right to Buy)	\$ 39.89	01/27/2011		M	6,067	<u>(5)</u> 09/16/2014	Common Stock	6,067
Non-Qualified Stock Option (Right to Buy)	\$ 39.89	01/27/2011		M	3,250	<u>(6)</u> 09/16/2014	Common Stock	3,250

## 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

Brian M. Martin as Attorney-in-Fact for Virendra A. Kirloskar

01/31/2011

\*\*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 sale was effected pursuant to a Rule 10b5-1 trading plan adopted by the Reporting Person on December 11, 2009.

(2) This sale was effected pursuant to a Rule 10b5-1 trading plan adopted by the Reporting Person on June 9, 2010.

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

Does not include performance-based RSUs, if any, held by the Reporting Person for which an assessment has not yet been made  
(4) 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.

Represents a stock option granted on September 16, 2004, granting the Reporting Person the right to purchase up to 9,967 shares of KLA-Tencor common stock. One share subject to this stock option vested on November 16, 2005, and 1/46 of the remaining 9,966 shares subject to this stock option vested on the 15-month anniversary of the grant date and each monthly anniversary thereafter until September 16, 2009.

Represents a stock option granted on September 16, 2004, granting the Reporting Person the right to purchase up to 6,500 shares of KLA-Tencor common stock. 1,300 of the shares subject to this stock option vested on the two-year anniversary of the grant date, and 1/48 of the remaining 5,200 shares subject to this stock option vested on the 25-month anniversary of the grant date and each monthly anniversary thereafter until September 16, 2010.

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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