Kirloskar Virendra A Form 4 January 30, 2012

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

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF

OMB Number:

3235-0287

January 31, Expires: 2005

OMB APPROVAL

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Check this box if no longer subject to Section 16. Form 4 or Form 5

SECURITIES Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, obligations may continue.

(Middle)

See Instruction 1(b).

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

5. Relationship of Reporting Person(s) to

Issuer

(First) (Last)

(Street)

KLA TENCOR CORP [KLAC]

(Check all applicable)

C/O KLA-TENCOR

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

01/27/2012

Director 10% Owner _X__ Officer (give title _ Other (specify

below) SVP & Chief Accounting Officer

CORPORATION, ONE **TECHNOLOGY DRIVE**

4. If Amendment, Date Original

6. Individual or Joint/Group Filing(Check

Applicable Line)

Filed(Month/Day/Year)

X Form filed by One Reporting Person Form filed by More than One Reporting

MILPITAS, CA 95035

(2)

(City)	(State) (A	Table Table	e I - Non-D	erivative S	Securi	ties Acqu	ired, Disposed of	, or Beneficiall	y 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 ction(A) or Disposed of (D) (Instr. 3, 4 and 5)		5. Amount of Securities Beneficially Owned Following	6. Ownership Form: Direct (D) or Indirect (I)	7. Nature of Indirect Beneficial Ownership (Instr. 4)	
			Code V	Amount	(A) or (D)	Price	Reported Transaction(s) (Instr. 3 and 4)	(Instr. 4)	
Common Stock	01/27/2012		M	10,000	A	\$ 47.95	10,297	D	
Common Stock	01/27/2012		S(1)	10,000	D	\$ 52.95	297	D	
Common Stock - Restricted Stock Units							27,650 <u>(3)</u>	D	

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. Transactio Code (Instr. 8)	5. Number of orDerivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)	6. Date Exer Expiration D (Month/Day/	ate	7. Title and A Underlying S (Instr. 3 and	Securit
				Code V	,	Date Exercisable	Expiration Date	Title	Amo or Num of Sh
Non-Qualified Stock Option (Right to Buy)	\$ 47.95	01/27/2012		M	10,000	<u>(4)</u>	09/26/2012	Common Stock	10,0

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

01/30/2012

**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 effected pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on March 7, 2011.
- (2) 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 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.
- (4) Represents a stock option granted on September 26, 2005, granting the Reporting Person the right to purchase up to 10,000 shares of KLA-Tencor common stock. 2,000 of the shares subject to this stock option vested on September 26, 2006, and 1/48

Reporting Owners 2

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of the remaining 8,000 shares subject to this stock option vested on October 26, 2006 and each monthly anniversary thereafter until September 26, 2010.

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.