

# FORM 5

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

OMB APPROVAL	
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**ANNUAL 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

- Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).
- Form 3 Holdings Reported
- Form 4 Transactions Reported

<b>1. Name and Address of Reporting Person*</b> CALDERONI ROBERT <small>(Last) (First) (Middle)</small> C/O KLA-TENCOR CORPORATION, ONE TECHNOLOGY DRIVE <small>(Street)</small> MILPITAS, CA 95035 <small>(City) (State) (Zip)</small>	<b>2. Issuer Name and Ticker or Trading Symbol</b> KLA TENCOR CORP [KLAC]	<b>5. Relationship of Reporting Person(s) to Issuer</b> (Check all applicable) <input checked="" type="checkbox"/> Director <input type="checkbox"/> 10% Owner <input type="checkbox"/> Officer (give title below) <input type="checkbox"/> Other (specify below)
<b>3. Statement for Issuer's Fiscal Year Ended</b> (Month/Day/Year) 06/30/2011		<b>6. Individual or Joint/Group Reporting</b> (check applicable line) <input checked="" type="checkbox"/> Form Filed by One Reporting Person <input type="checkbox"/> Form Filed by More than One Reporting Person
<b>4. If Amendment, Date Original Filed</b> (Month/Day/Year)		

**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 at end of Issuer's Fiscal Year (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
				Amount	(A) or (D)	Price			
Common Stock - Restricted Stock Units (1)							2,772	D	
Common Stock	12/01/2010		L	77.385	A	\$ 37.36	11,704.527 (2)	D	
Common Stock	03/01/2011		L	61.515	A	\$ 47.32	11,704.527 (2)	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 at End of Issuer's Fiscal Year (Instr. 4)	10. Ownership Form of Derivative Security: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
						Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
					(A) (D)								

## Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
CALDERONI ROBERT C/O KLA-TENCOR CORPORATION ONE TECHNOLOGY DRIVE MILPITAS, CA 95035	X			

## Signatures

Brian M. Martin as Attorney-in-Fact for Robert M. Calderoni

08/12/2011

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) Each restricted stock unit ("RSU") represents a contingent right to receive one share of KLA-Tencor common stock.  
Amount includes a total of 138.9 shares of KLA-Tencor common stock acquired by Mr. Calderoni in the two transactions reported on this Form 5 pursuant to automatic
- (2) reinvestments of the dividends paid on KLA-Tencor common stock, which transactions collectively qualify as a "small acquisition" under Rule 16a-6 promulgated under the Securities Exchange Act of 1934.

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

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