

FORM 4

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

OMB APPROVAL	
OMB Number:	3235-0287
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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 * WALLACE RICHARD P		2. Issuer Name and Ticker or Trading Symbol KLA TENCOR CORP [KLAC]		5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director <input type="checkbox"/> 10% Owner <input checked="" type="checkbox"/> Officer (give title below) <input type="checkbox"/> Other (specify below) President and CEO	
(Last)	(First)	(Middle)	3. Date of Earliest Transaction (Month/Day/Year) 10/11/2010		
C/O KLA-TENCOR CORPORATION, ONE TECHNOLOGY DRIVE					
(Street)			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
MILPITAS, CA 95035					
(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	10/11/2010		M		3,791	A	\$ 26.25	129,548	D	
Common Stock	10/11/2010		M		3,209	A	\$ 32.88	132,757	D	
Common Stock	10/11/2010		S		7,000	D	\$ 34.6154 (1)	125,757	D	
Common Stock - Restricted Stock Units (2)								317,945 (3)	D	

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

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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						Title
Non-Qualified Stock Option (Right to Buy)	\$ 26.25	10/11/2010		M		3,791		(4)	11/10/2010	Common Stock	3,791	\$ 0	0	D	
Non-Qualified Stock Option (Right to Buy)	\$ 32.88	10/11/2010		M		3,209		(5)	11/10/2010	Common Stock	3,209	\$ 0	0	D	

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other

WALLACE RICHARD P C/O KLA-TENCOR CORPORATION ONE TECHNOLOGY DRIVE MILPITAS, CA 95035	X		President and CEO	
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Signatures

Brian M. Martin as Attorney-in-Fact for Richard P. Wallace		10/13/2010
<small>Signature of Reporting Person</small>		<small>Date</small>

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).

- This transaction was executed in multiple trades at prices ranging from \$34.22 to \$35.12. The price reported above reflects the weighted average purchase price. The Reporting Person
- (1) 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.
 - (2) Each RSU represents a contingent right to receive one share of KLA-Tencor common stock.
 - (3) 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 the remaining unexercised portion of a stock option granted on November 10, 2000, granting the Reporting Person the right to purchase up to 14,291 shares of KLA-Tencor common stock. 3,500 shares subject to this stock option vested on the one-year anniversary of the grant date, and 1/48 of the remaining 10,791 shares vested on each monthly anniversary thereafter until November 10, 2005.
 - (5) Represents a stock option granted on November 10, 2000, granting the Reporting Person the right to purchase up to 3,209 shares of KLA-Tencor common stock. 1/48 of the total number of shares subject to this stock option vested on the 13-month anniversary of the grant date and on each monthly anniversary thereafter until November 10, 2005.

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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