

# 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* COHEN AVI			2. Issuer Name and Ticker or Trading Symbol KLA TENCOR CORP [KLAC]			5. Relationship of Reporting Person(s) to Issuer (Check all applicable) ____ Director ____ 10% Owner <input checked="" type="checkbox"/> Officer (give title below) _____ Other (specify below) VP, Pattern Solutions Group		
(Last)	(First)	(Middle)	3. Date of Earliest Transaction (Month/Day/Year) 10/18/2004					
C/O KLA-TENCOR CORPORATION, 160 RIO ROBLES								
(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 ____ Form filed by More than One Reporting Person		
SAN JOSE, CA 95130								
(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-Restricted Stock Units (1)	10/18/2004		A		33,333	A	\$ 0 (2)	33,333	D	
Common Stock								2,000	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					
Non-Qualified Stock Option (right to buy)	\$ 10.63							08/31/1999	08/31/2008	Common Stock	47,313	47,313	D	
Non-Qualified Stock Option (right to buy)	\$ 22.25							04/30/1998	04/30/2007	Common Stock	7,500	7,500	D	
Non-Qualified Stock Option (right to buy)	\$ 26.25							11/10/2001	11/10/2010	Common Stock	8,750	8,750	D	

Non-Qualified Stock Option (right to buy)	\$ 29.31							10/02/2002	10/02/2011	Common Stock	22,500		22,500	D	
Non-Qualified Stock Option (right to buy)	\$ 32.75							04/04/2002	04/04/2011	Common Stock	8,750		8,750	D	
Non-Qualified Stock Option (right to buy)	\$ 33.75							10/27/2000	10/27/2009	Common Stock	24,000		24,000	D	
Non-Qualified Stock Option (right to buy)	\$ 34.67							11/08/2003	01/28/2013	Common Stock	12,500		12,500	D	
Non-Qualified Stock Option (right to buy)	\$ 37.05							11/08/2003	11/08/2012	Common Stock	6,250		6,250	D	
Non-Qualified Stock Option (right to buy)	\$ 40.66							10/27/2004	08/02/2014	Common Stock	6,000		6,000	D	
Non-Qualified Stock Option (right to buy)	\$ 41.79							09/21/2005	09/21/2014	Common Stock	75,000		75,000	D	
Non-Qualified Stock Option (right to buy)	\$ 44.6875							08/13/2001	08/13/2010	Common Stock	17,500		17,500	D	
Non-Qualified Stock Option (right to buy)	\$ 45.16							10/27/2004	04/26/2014	Common Stock	10,000		10,000	D	
Non-Qualified Stock Option (right to buy)	\$ 51.229							11/08/2003	07/30/2013	Common Stock	6,250		6,250	D	
Non-Qualified Stock Option (right to buy)	\$ 53.86							10/27/2004	10/27/2013	Common Stock	16,000		16,000	D	

Non-Qualified Stock Option (right to buy)	\$ 58.10							10/27/2004	01/27/2014	Common Stock	8,000		8,000	D	
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## Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
COHEN AVI C/O KLA-TENCOR CORPORATION 160 RIO ROBLES SAN JOSE, CA 95130			VP, Pattern Solutions Group	

## Signatures

By: Stuart J. Nichols For: Avi Cohen		10/20/2004
<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).
- (1) Each restricted stock unit represents a contingent right to receive one share of KLAC common stock.
- (2) The restricted stock units vest in two equal installments. The first half vests on October 18, 2008. The second half vests the following year on October 18, 2009.

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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