KLA TENCOR CORP

Check this box

if no longer

subject to

Section 16.

Form 4

August 03, 2005

FORM 4

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

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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF

Form 4 or Form 5 obligations may continue. See Instruction

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

SECURITIES

1(b).

(Print or Type Responses)

1. Name and Address of Reporting Person * BARNHOLT EDWARD W

2. Issuer Name and Ticker or Trading Symbol

KLA TENCOR CORP [KLAC]

5. Relationship of Reporting Person(s) to

(Check all applicable)

Issuer

(First) (Last)

(Middle)

3. Date of Earliest Transaction

X_ Director 10% Owner

(Month/Day/Year)

08/02/2005

Officer (give title Other (specify below)

C/O KLA-TENCOR CORPORATION, 160 RIO

ROBLES

Security

(Instr. 3)

(Street) 4. If Amendment, Date Original

Filed(Month/Day/Year)

6. Individual or Joint/Group Filing(Check

Applicable Line)

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

SAN JOSE, CA 95130

(City) (State) (Zip) 1. Title of 2. Transaction Date 2A. Deemed

3. 4. Securities (Month/Day/Year) Execution Date, if TransactionAcquired (A) or Code Disposed of (D) (Instr. 3, 4 and 5) (Month/Day/Year) (Instr. 8)

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned 5. Amount of 6. Ownership 7. Nature of Securities Form: Direct Indirect Beneficially (D) or Indirect Beneficial Owned (I) Ownership Following (Instr. 4) (Instr. 4)

Reported Transaction(s)

or (Instr. 3 and 4) Code V Amount (D) Price

(A)

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 3. Transaction Date 3A. Deemed 5. Number 6. Date Exercisable and Derivative (Month/Day/Year) Execution Date, if Transaction of Derivative Expiration Date Conversion

7. Title and Amour Underlying Securit

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Security (Instr. 3)	or Exercise Price of Derivative Security		any (Month/Day/Year)	Code (Instr. 8)	Securities Acquired (A) or Disposed (D) (Instr. 3, 4 and 5)	of	(Month/Day/Year)		(Instr. 3 and 4)	
				Code V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amo or Num of Sh
Non-Qualified Stock Option (right to buy)	\$ 51.35	08/02/2005		A	2,500		08/02/2005	08/02/2015	Common Stock	2,5
Non-Qualified Stock Option (right to buy)	\$ 10.63						04/25/1997	10/25/2006	Common Stock	10,0
Non-Qualified Stock Option (right to buy)	\$ 11.66						09/21/1999	09/21/2008	Common Stock	5,0
Non-Qualified Stock Option (right to buy)	\$ 17.59						11/17/1998	11/17/2008	Common Stock	5,8
Non-Qualified Stock Option (right to buy)	\$ 26.25						11/10/2000	11/10/2010	Common Stock	10,0
Non-Qualified Stock Option (right to buy)	\$ 34.94						09/19/1998	09/19/2007	Common Stock	5,0
Non-Qualified Stock Option (right to buy)	\$ 37.05						11/08/2002	11/08/2012	Common Stock	10,0
Non-Qualified Stock Option (right to buy)	\$ 40.24						05/11/2005	05/11/2015	Common Stock	2,5
Non-Qualified Stock Option (right to buy)	\$ 40.68						10/18/2004	10/18/2014	Common Stock	2,5
Non-Qualified Stock Option (right to buy)	\$ 44.76						01/25/2005	01/25/2015	Common Stock	2,5
Non-Qualified Stock Option (right to buy)	\$ 46.28						11/16/1999	11/16/2009	Common Stock	10,0
Non-Qualified Stock Option	\$ 47.23						11/09/2001	11/09/2011	Common Stock	10,0

(right to buy)

Non-Qualified

Stock Option \$ 59.44 (right to buy)

11/05/2003 11/05/2013

Common Stock

10,0

Reporting Owners

Reporting Owner Name / Address Relationships

Director 10% Owner Officer Other

BARNHOLT EDWARD W C/O KLA-TENCOR CORPORATION 160 RIO ROBLES SAN JOSE, CA 95130

X

Signatures

By: Stuart J. Nichols For: Edward W.

Barnholt 08/03/2005

**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).

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.

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