

FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

OMB APPROVAL

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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).

(Print or Type Responses)

| | | | | | |
|--|---------|--|---|--|--|
| 1. Name and Address of Reporting Person* SCHROEDER KENNETH L | | 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) Chief Executive Officer | |
| (Last) | (First) | (Middle) | 3. Date of Earliest Transaction (Month/Day/Year) 12/02/2004 | | |
| C/O KLA-TENCOR CORPORATION, 160 RIO ROBLES | | | 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 |
| (Street) SAN JOSE, CA 95130 | | | | | |
| (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 | 12/02/2004 | | M | | 2,639 | A | \$ 16.97 | 164,577 | D | |
| Common Stock | 12/02/2004 | | S | | 2,639 | D | \$ 47.50 | 161,938 | D | |
| Common Stock-Restricted Stock Units (1) | | | | | | | | 100,000 | 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. 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. 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 | Amount or Number of Shares | | | | |
| Non-Qualified Stock Option (right to buy) | \$ 16.97 | 12/02/2004 | | M | | 2,639 | | 10/23/1999 | 10/23/2008 | Common Stock | 2,639 | \$ 47.50 | 218,089 | D | |
| Non-Qualified Stock Option (right to buy) | \$ 10.63 | | | | | | | 08/31/1999 | 08/31/2008 | Common Stock | 79,272 | | 79,272 | D | |
| Non-Qualified Stock Option (right to buy) | \$ 26.25 | | | | | | | 11/10/2001 | 11/10/2010 | Common Stock | 37,900 | | 37,900 | D | |

| | | | | | | | | | | | | | | | |
|---|------------|--|--|--|--|--|--|------------|------------|--------------|---------|--|---------|---|--|
| Non-Qualified Stock Option (right to buy) | \$ 29.31 | | | | | | | 10/02/2002 | 10/02/2011 | Common Stock | 341,100 | | 341,100 | D | |
| Non-Qualified Stock Option (right to buy) | \$ 32.75 | | | | | | | 04/04/2002 | 04/04/2011 | Common Stock | 37,900 | | 37,900 | D | |
| Non-Qualified Stock Option (right to buy) | \$ 33.75 | | | | | | | 10/27/2000 | 10/27/2009 | Common Stock | 150,000 | | 150,000 | D | |
| Non-Qualified Stock Option (right to buy) | \$ 34.67 | | | | | | | 11/08/2003 | 01/28/2013 | Common Stock | 62,900 | | 62,900 | D | |
| Non-Qualified Stock Option (right to buy) | \$ 37.05 | | | | | | | 11/08/2003 | 11/08/2012 | Common Stock | 31,450 | | 31,450 | D | |
| Non-Qualified Stock Option (right to buy) | \$ 40.66 | | | | | | | 10/27/2006 | 08/02/2014 | Common Stock | 22,500 | | 22,500 | D | |
| Non-Qualified Stock Option (right to buy) | \$ 41.79 | | | | | | | 09/21/2005 | 09/21/2014 | Common Stock | 325,800 | | 325,800 | D | |
| Non-Qualified Stock Option (right to buy) | \$ 44.6875 | | | | | | | 08/13/2000 | 08/13/2010 | Common Stock | 75,800 | | 75,800 | D | |
| Non-Qualified Stock Option (right to buy) | \$ 45.16 | | | | | | | 10/27/2004 | 04/26/2014 | Common Stock | 37,500 | | 37,500 | D | |
| Non-Qualified Stock Option (right to buy) | \$ 51.229 | | | | | | | 11/08/2003 | 07/30/2013 | Common Stock | 31,450 | | 31,450 | D | |
| Non-Qualified Stock Option (right to buy) | \$ 53.86 | | | | | | | 10/27/2004 | 10/27/2013 | Common Stock | 60,000 | | 60,000 | D | |

| | | | | | | | | | | | | | | | |
|---|----------|--|--|--|--|--|--|------------|------------|--------------|--------|--|--------|---|--|
| Non-Qualified Stock Option (right to buy) | \$ 58.10 | | | | | | | 10/27/2006 | 01/27/2014 | Common Stock | 30,000 | | 30,000 | D | |
|---|----------|--|--|--|--|--|--|------------|------------|--------------|--------|--|--------|---|--|

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|---|---------------|-----------|-------------------------|-------|
| | Director | 10% Owner | Officer | Other |
| SCHROEDER KENNETH L C/O KLA-TENCOR CORPORATION 160 RIO ROBLES SAN JOSE, CA 95130 | X | | Chief Executive Officer | |

Signatures

| | | |
|---|--|---------------------|
| By: Stuart J. Nichols For: Kenneth L. Schroeder | | 12/06/2004 |
| <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.

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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