

INITIAL STATEMENT OF 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 * KENNEDY KEVIN <small>(Last) (First) (Middle)</small> C/O KLA-TENCOR CORPORATION, 160 RIO ROBLES <small>(Street)</small> SAN JOSE, CA 95130 <small>(City) (State) (Zip)</small> | 2. Date of Event Requiring Statement (Month/Day/Year) 05/09/2007 | 3. Issuer Name and Ticker or Trading Symbol KLA TENCOR CORP [KLAC] | | |
| | | 4. Relationship of Reporting Person(s) to Issuer <small>(Check all applicable)</small> <input checked="" type="checkbox"/> Director <input type="checkbox"/> 10% Owner <input type="checkbox"/> Officer (give title below) <input type="checkbox"/> Other (specify below) | | 5. 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 | | |

Table I - Non-Derivative Securities Beneficially Owned

| | | | |
|---------------------------------|---|--|---|
| 1. Title of Security (Instr. 4) | 2. Amount of Securities Beneficially Owned (Instr. 4) | 3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5) | 4. Nature of Indirect Beneficial Ownership (Instr. 5) |
|---------------------------------|---|--|---|

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

SEC 1473 (7-02)

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.

Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative Security (Instr. 4) | 2. Date Exercisable and Expiration Date (Month/Day/Year) | | 3. Title and Amount of Securities Underlying Derivative Security (Instr. 4) | | 4. Conversion or Exercise Price of Derivative Security | 5. Ownership Form of Derivative Security: Direct (D) or Indirect (I) (Instr. 5) | 6. Nature of Indirect Beneficial Ownership (Instr. 5) |
|--|--|-----------------|---|----------------------------|--|---|---|
| | Date Exercisable | Expiration Date | Title | Amount or Number of Shares | | | |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|---|---------------|-----------|---------|-------|
| | Director | 10% Owner | Officer | Other |
| KENNEDY KEVIN C/O KLA-TENCOR CORPORATION 160 RIO ROBLES SAN JOSE, CA 95130 | X | | | |

Signatures

| | | |
|---|--|---------------------|
| /s/ Brian Martin as Attorney-in-fact For Kevin J. Kennedy | | 05/11/2007 |
| <small>*Signature of Reporting Person</small> | | <small>Date</small> |

Explanation of Responses:

No securities are beneficially owned

- * If the form is filed by more than one reporting person, see Instruction 5(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).

Remarks:

(1) Brian Martin is signing this Form 3 as attorney-in-fact for the Reporting Person pursuant to a power of attorney executed by the Reporting Person, which is filed herewith as an exhibit.

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.

Limited Power of Attorney - Securities Law Compliance

This statement confirms that the undersigned, as an officer, director or beneficial owner of more than 10% of any class of any equity security of KLA-Tencor Corporation (the "Corporation"), hereby appoints Brian Martin the undersigned's true and lawful attorney-in-fact and agent to complete and execute such Forms 144, Forms 3, 4 and 5 and other forms (including any amendments thereto) as such attorney shall in his or her discretion determine to be required or advisable pursuant to Rule 144 promulgated under the Securities Act of 1933 (as amended), Section 16 of the Securities Exchange Act of 1934 (as amended) and the rules and regulations promulgated thereunder, or any successor laws and regulations, as a consequence of the undersigned's ownership, acquisition or disposition of securities of the Corporation, and to do all acts necessary in order to file such forms with the Securities and Exchange Commission, any securities exchange or national association, the Corporation and such other person or agency as the attorney shall deem appropriate. The undersigned hereby ratifies and confirms all that said attorney-in-fact and agent shall do or cause to be done by virtue hereof. The authority of Brian Martin under this Limited Power of Attorney shall continue until the undersigned is no longer required to file Forms 144, Forms 3, 4 and 5 with regard to the undersigned's ownership of or transactions in securities of the Corporation, unless earlier revoked in writing. The undersigned acknowledges that Brian Martin is not assuming any of the undersigned's responsibilities to comply with Section 16 of the Securities Exchange Act of 1934 (as amended) or Rule 144 promulgated under the Securities Act of 1933 (as amended).

This Limited Power of Attorney is executed at Milpitas, California as of the date set forth below.

/s/ Kevin J. Kennedy

Signature

Kevin J. Kennedy

Print Name

Dated:5-9-07

Witness:

/s/ Kerry Bird

Signature

Kerry Bird

Print Name

Dated:5-9-07