

FORM 4

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

| OMB APPROVAL | |
|------------------------------------------------|-----------|
| OMB Number: | 3235-0287 |
| Estimated average burden hours per response... | 0.5 |

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) 01/14/2011 | | 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 |
| C/O KLA-TENCOR CORPORATION, ONE TECHNOLOGY DRIVE | | | | | |
| (Street) MILPITAS, CA 95035 | | | 4. If Amendment, Date Original Filed (Month/Day/Year) | | |
| (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 | 01/14/2011 | | M | | 9,000 | A | \$ 29.31 | 134,757 | D | |
| Common Stock | 01/14/2011 | | S | | 9,000 | D | \$ 41.84 | 125,757 | D | |
| Common Stock | 01/14/2011 | | S | | 18,792 | D | \$ 41.84 | 106,965 | D | |
| Common Stock - Restricted Stock Units (1) | | | | | | | | 317,945 (2) | 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 |
| Non-Qualified Stock Option (Right to Buy) | \$ 29.31 | 01/14/2011 | | M | | 9,000 | | (3) | 10/02/2011 | Common Stock | 9,000 | \$ 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 | |

Limited Power of Attorney - Securities Law Compliance

This statement confirms that the undersigned, as an executive officer and director of KLA-Tencor Corporation (the "Corporation"), hereby appoints Brian Martin (in his role as corporate secretary)

1. complete and execute Forms ID, 3, 4 and 5 and other forms (including any amendments thereto) as such attorney-in-fact shall in his discretion determine to be required or advisable pursuant to
2. to do all acts necessary in order to file such forms with the SEC, or any securities exchange or national association, that the Corporation and such other person or agency as the attorney-in-f

The undersigned hereby ratifies and confirms all that said attorneys-in-fact and agents shall do or cause to be done by virtue hereof. The undersigned acknowledges that the foregoing attorneys-i

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

Signature: /s/ Richard P. Wallace
Print Name: Richard P. Wallace
Dated: November 8, 2010

Witness:

Signature: /s/ Lisa Cianciarulo
Print Name: Lisa Cianciarulo
Dated: November 8, 2010