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

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**FORM 8-K**

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**CURRENT REPORT  
Pursuant To Section 13 or 15(d) of  
The Securities Exchange Act of 1934**

Date of report (Date of earliest event reported): February 27, 2007

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**KLA-TENCOR CORPORATION**  
(Exact Name of Registrant as Specified in Charter)

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**Delaware**  
(State or Other Jurisdiction of Incorporation)

**000-09992**  
(Commission File Number)

**04-2564110**  
(IRS Employer  
Identification No.)

**160 Rio Robles**  
**San Jose, California 95134**  
(Address of Principal Executive Offices)

Registrant's telephone number, including area code: (408) 875-3000

**N/A**  
(Former Name or Former Address, if Changed Since Last Report)

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Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
  - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
  - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
  - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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**Item 8.01. Other Events.**

(a) On February 27, 2007, KLA-Tencor Corporation (the "Company") commenced a formal tender offer to its employees that will allow them to tender for amendment or replacement certain outstanding options under the Company's Restated 1982 Stock Option Plan, 2000 Nonstatutory Stock Option Plan and 2004 Equity Incentive Plan. The options subject to the offer have been determined, as a result of a lengthy investigation of the Company's past option grant practices, to have exercise prices based on the fair market value per share of its common stock on a date earlier than the actual dates on which those options were granted. As a result, those options have exercise prices below the fair market value of the Company's common stock on the grant date.

Section 409A of the Internal Revenue Code provides that options granted with a below-market exercise price, to the extent unvested as of December 31, 2004, will be subject to adverse income taxation, unless certain remedial action is taken before those options are exercised. The offer is designed to allow employees the opportunity to avoid those tax consequences by offering to amend or replace each of their Section 409A-covered options. If such an option is tendered for amendment pursuant to the offer, then the exercise price of that option will, on the next business day following the expiration date of the offer, be adjusted to the lower of (i) the fair market value per share of the Company's common stock on the date on which that option was actually granted or (ii) the closing selling price per share of its common stock on the date on which the option is amended pursuant to the offer (the "Adjusted Exercise Price").

Employees whose options are amended in accordance with the terms of the offer will become eligible to receive a special cash bonus. The amount of the cash bonus payable with respect to each amended option will be determined by multiplying (i) the amount by which the Adjusted Exercise Price exceeds the exercise price currently in effect for that option by (ii) the number of shares of our common stock purchasable under that option at the Adjusted Exercise Price. The cash bonus will be paid on January 2, 2008.

However, if the Adjusted Exercise Price determined for any tendered option would be the same or lower than the exercise price per share currently in effect for that option, then that option will, on the next business day following the expiration of the offer, be canceled and immediately replaced with a new option that is exactly the same as the canceled option, including the same exercise price per share, vesting schedule and expiration date, but with a new grant date. Such cancellation and re-grant is necessary to evidence the remedial action required under Section 409A with respect to an option whose current exercise price is not increased. No cash bonus will be paid with respect to such a regranted option because there would be no change to the exercise price.

Options to purchase 5,139,344 shares of the Company's common stock are eligible for tender pursuant to the offer. The aggregate cash bonus payable pursuant to the offer will be not be more than approximately \$21,500,000, assuming that all eligible option are tendered and the exercise price of each such tendered option is increased to the fair market value per share on the actual grant date of that option.

(b) In addition, the Board of Directors of the Company has nominated Mr. Robert M. Calderoni for election as a Class I Director at the next Annual Meeting of its stockholders, scheduled for March 29, 2007. Mr. Calderoni has served as Chairman of the Board of Directors of Ariba, Inc. ("Ariba"), since July 2003 and as Chief Executive Officer and a Director of Ariba since 2001. From 2001 to 2004, Mr. Calderoni also served as Ariba's President and before that as the Ariba's Executive Vice President and Chief Financial Officer. From 1997 to 2001, he served as Chief Financial Officer at Avery Dennison Corporation.

The information in this Form 8-K shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities under that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, regardless of any general incorporation language in such filing.

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**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

**KLA-TENCOR CORPORATION**

Date: February 27, 2007

By:           /s/ Jeffrey L. Hall            
Name: Jeffrey L. Hall  
Title: Chief Financial Officer