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

FORM 8-K

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 22, 2007

KLA-TENCOR CORPORATION

(Exact Name of Registrant
as Specified in Charter)

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)

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 1.01. Entry into a Material Definitive Agreement.

On February 22, 2007, KLA-Tencor Corporation (the “Company”) entered into a letter agreement (the “Agreement”) with Merrill Lynch International (“Merrill Lynch”) relating to an accelerated share repurchase under which the Company will repurchase \$750 million of the Company’s common stock from Merrill Lynch. Under the Agreement, the price at which the Company will repurchase shares will be determined based on a discount to the volume-weighted average price of the Company’s common stock during a period following execution of the Agreement. The exact number of shares repurchased will be determined based on the volume-weighted average price of the Company’s common stock during the same period, subject to a minimum that will be established in a similar manner following execution of the Agreement.

Item 7.01. Regulation FD Disclosure.

On February 22, 2007, KLA-Tencor issued a press release announcing the approval by its Board of Directors of a \$750 million accelerated share repurchase and an additional new 10 million share repurchase program. Both the accelerated share repurchase and the new 10 million share repurchase program are in addition to the existing 10 million share repurchase program authorized by the Company’s Board of Directors in February 2005. Under the existing repurchase program, approximately 6.5 million shares have been repurchased to date and approximately 3.5 million shares remain available for repurchase. The press release is attached hereto as Exhibit 99.1.

The information in Item 7.01 of this Form 8-K and the exhibit attached hereto 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.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

The following exhibits are filed herewith:

<u>Exhibit Number</u>	<u>Description</u>
99.1	Text of press release issued by KLA-Tencor Corporation dated February 22, 2007.

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 22, 2007

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

EXHIBIT INDEX

Exhibit	Description
99.1	Text of press release issued by KLA-Tencor Corporation dated February 22, 2007.

DRAFT NEWS RELEASE

KLA-Tencor Contacts:

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FOR IMMEDIATE RELEASE

February 22, 2007

**KLA-TENCOR ANNOUNCES \$750 MILLION ACCELERATED SHARE
REPURCHASE AND AN ADDITIONAL 10 MILLION SHARE REPURCHASE
PROGRAM**

SAN JOSE, CA — KLA-Tencor Corporation (NasdaqGS: KLAC) today announced that it has entered into an accelerated share repurchase agreement under which the Company will repurchase \$750 million of its common stock. The Company also announced that its Board of Directors has approved a new 10 million share repurchase program. The new accelerated share repurchase and the new 10 million share repurchase program are in addition to the existing 10 million share repurchase program authorized by the Company's Board of Directors in February 2005.

About KLA-Tencor: KLA-Tencor is the world leader in yield management and process control solutions for semiconductor manufacturing and related industries. Headquartered in San Jose, Calif., the company has sales and service offices around the world. An S&P 500 company, KLA-Tencor is traded on the NASDAQ Global Select Market under the symbol KLAC. Additional information about the company is available on the Internet at <http://www.kla-tencor.com>, which website is not part of this press release.

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