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): May 4, 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))

Item 8.01. Other Events.

The Board of Directors of KLA-Tencor Corporation has declared a quarterly cash dividend of 12 cents per share, payable on June 1, 2007 to stockholders of record on May 15, 2007.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits

Exhibit

Number Description

10.01 Press Release dated May 4, 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: May 4, 2007 /s/ Jeffrey L. Hall Name: Jeffrey L. Hall

Title: Chief Financial Officer

Exhibit Index

Exhibit

Number Description

10.01 Press Release dated May 4, 2007