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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): 08/05/2010**

**KLA-TENCOR CORPORATION**

(Exact name of registrant as specified in its charter)

**Commission File Number: 000-09992**

**Delaware**  
(State or other jurisdiction of  
incorporation)

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

**One Technology Drive, Milpitas, California 95035**  
(Address of principal executive offices, including zip code)

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

**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:

- 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**

On August 5, 2010, KLA-Tencor Corporation (the "Company") issued a press release announcing that the Company's Board of Directors had declared a cash dividend of \$0.25 per share on the Company's Common Stock. Such dividend shall be payable on September 1, 2010 to the Company's stockholders of record as of the close of business on August 16, 2010. A copy of the press release is attached hereto as Exhibit 99.1.

**Item 9.01. Financial Statements and Exhibits**

(d) Exhibits

The following exhibit is filed herewith:

Exhibit No.	Description
99.1	Text of press release issued by KLA-Tencor Corporation dated August 5, 2010

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**SIGNATURES**

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

KLA-TENCOR CORPORATION

Date: August 05, 2010

By: /s/ Brian M. Martin

Brian M. Martin  
Senior Vice President and General Counsel

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**EXHIBIT INDEX**

<b><u>Exhibit No.</u></b>	<b><u>Description</u></b>
EX-99.1	Text of press release issued by KLA-Tencor Corporation dated August 5, 2010

**FOR IMMEDIATE RELEASE**

**Investor Relations:**

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**KLA-TENCOR™ DECLARES REGULAR CASH DIVIDEND FOR FIRST  
QUARTER OF FISCAL YEAR 2011**

MILPITAS, Calif. - August 5, 2010 (PR Newswire) - KLA-Tencor Corporation™ (NASDAQ: KLAC) today announced that its Board of Directors has declared a quarterly cash dividend of \$0.25 per share on its common stock payable on September 1, 2010 to KLA-Tencor stockholders of record as of the close of business on August 16, 2010.

**About KLA-Tencor:** KLA-Tencor Corporation, a leading provider of process control and yield management solutions, partners with customers around the world to develop state-of-the-art inspection and metrology technologies. These technologies serve the semiconductor, data storage, LED, photovoltaic, and other related nanoelectronics industries. With a portfolio of industry-standard products and a team of world-class engineers and scientists, the company has created superior solutions for its customers for more than 30 years. Headquartered in Milpitas, California, KLA-Tencor has dedicated customer operations and service centers around the world. Additional information may be found at [www.kla-tencor.com](http://www.kla-tencor.com). (KLAC-F)

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