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): July 14, 2015

KLA-TENCOR CORPORATION

(Exact name of registrant as specified in its charter) Delaware 000-09992 04-2564110 (State or other jurisdiction of incorporation) (Commission File Number) (I.R.S. Employer Identification No.) One Technology Drive, Milpitas, California 95035 (Zip Code) (Address of principal executive offices) Registrant's telephone number, including area code: (408) 875-3000 (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))

Item 2.02 Results of Operations and Financial Condition.

As previously announced, KLA-Tencor Corporation (the "Company") presented its annual SEMICON West analyst briefing on July 14, 2015 at the W San Francisco Hotel. The presentation was accessible via live webcast through (and a replay of the presentation is currently available on) the Investor Relations page of the Company's website at http://ir.kla-tencor.com/, and the presentation otherwise complied with the notification, public accessibility and other requirements of Regulation FD. A copy of the slides presented at such briefing is currently available on the Investor Relations page of the Company's website.

On April 23, 2015, in the Company's quarterly earnings conference call, the Company had previously provided preliminary guidance for certain of the Company's anticipated financial metrics for the fourth quarter of fiscal year 2015: bookings (a range of \$550 to \$750 million), revenue (a range of \$710 to \$790 million) and non-GAAP diluted earnings per share ("EPS") (a range of \$0.78 to \$1.02 per share). In a slide presentation available on the Investor Relations page of the Company's website, the Company had reconciled such non-GAAP diluted EPS to GAAP diluted EPS (a range of \$0.75 to \$0.99). In a Current Report on Form 8-K/A filed on June 26, 2015, the Company had confirmed the preliminary guidance regarding non-GAAP diluted EPS for the fourth quarter of fiscal year 2015 (a range of \$0.65 to \$0.91 per share) and reconciled non-GAAP diluted EPS.

During the July 14, 2015 SEMICON West analyst briefing, Richard P. Wallace, the Company's President and Chief Executive Officer, provided updated guidance regarding the Company's expected bookings, revenue and non-GAAP diluted EPS for its recently completed fourth quarter of fiscal year 2015, which ended on June 30, 2015. During the presentation, Mr. Wallace presented a slide as part of his briefing that stated that the Company's bookings, revenue and non-GAAP diluted EPS for the fourth quarter of fiscal year 2015 were "in range." The Company expects GAAP diluted EPS for the fourth quarter of fiscal year 2015 to be within the range of the updated guidance that was previously provided in the Current Report on Form 8-K/A filed on June 26, 2015. During the presentation, Bren D. Higgins, the Company's Chief Financial Officer, stated that the Company's non-GAAP operating margin for fiscal year 2015 to be approximately between 24% to 26%. The Company expects GAAP operating margin for fiscal year 2015 to be approximately between 24% to 26%.

Messrs. Wallace and Higgins also provided information during the presentation regarding the Company's outlook for selected operating and financial results for future periods. That information is available through the Regulation FD-compliant webcast that is accessible on the Company's website.

The information in Item 2.02 of this Current Report on Form 8-K is being furnished to the Securities and Exchange Commission and 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. The information in Item 2.02 of this Current Report on Form 8-K shall not 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.

References to the Company's website in this Current Report on Form 8-K do not incorporate by reference the information on such website into this Current Report on Form 8-K, and the Company disclaims any such incorporation by reference.

Forward-Looking Statements: Statements in this Current Report on Form 8-K other than historical facts, such as statements regarding the Company's anticipated operating and financial results for the quarter and fiscal year ended June 30, 2015 and future periods, are forward-looking statements, and are subject to the Safe Harbor provisions created by the Private Securities Litigation Reform Act of 1995. These forward-looking statements are based on current information and expectations, and involve a number of risks and uncertainties. Actual future results and/or events may differ materially from those projected in such statements due to various factors, including but not limited to: events that may occur subsequent to the completion of the fourth quarter of fiscal year 2015 that impact the Company's ability to recognize revenue or otherwise affect the accounting for transactions during the fourth quarter of fiscal year 2015; unanticipated charges required to be recognized during the fourth quarter of fiscal year 2015; unexpected charges or modifications to the Company's accounting for operating results or financial assumptions for the fourth quarter of fiscal year 2015; the demand for semiconductors; the financial condition of the global capital markets and the general macroeconomic environment; new and enhanced product and technology offerings by competitors; cancellation of orders by customers; the ability of the Company's research and development teams to successfully innovate and develop technologies and products that are responsive to customer demands; the Company's ability to successfully manage its costs; market acceptance of the Company's existing and newly issued products; changing customer demands or technological requirements; and industry transitions. For other factors that may cause actual results to differ

materially from those projected and anticipated in forward-looking statements in this Current Report on Form 8-K, please refer to the Company's Annual Report on Form 10-K for the year ended June 30, 2014, subsequently filed Quarterly Reports on Form 10-Q and other filings with the Securities and Exchange Commission (including, but not limited to, the risk factors described therein). The Company assumes no obligation to, and does not currently intend to, update these forward-looking statements.

Use of Non-GAAP Financial Information: The non-GAAP information provided in this Current Report on Form 8-K is a supplement to, and not a substitute for, the Company's financial results presented in accordance with United States GAAP. To supplement the Company's financial results presented in accordance with GAAP, the Company provides certain non-GAAP financial information, which is adjusted from results based on GAAP to exclude certain costs and expenses, as well as other supplemental information. The non-GAAP and supplemental information is provided to enhance the user's overall understanding of the Company's operating performance and its prospects in the future. Specifically, the Company believes that the non-GAAP information provides useful measures to both management and investors regarding financial and business trends relating to the Company's financial performance by excluding certain costs and expenses that the Company believes are not indicative of its core operating results. The non-GAAP information is among the budgeting and planning tools that management uses for future forecasting. However, because there are no standardized or generally accepted definitions for most non-GAAP financial metrics, definitions of non-GAAP financial metrics (for example, determining which costs and expenses to exclude when calculating such a metric) are inherently subject to significant discretion. As a result, non-GAAP financial metrics may be defined very differently from company to company, or even from period to period within the same company, which can potentially limit the usefulness of such information is not meant to be considered in isolation or as a substitute for results prepared and presented in accordance with United States GAAP.

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: July 16, 2015

By: Name: Title: /s/ BRIAN M. MARTIN Brian M. Martin Executive Vice President and General Counsel