UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE TO

(Rule 13e-4)

TENDER OFFER STATEMENT UNDER SECTION 14(d)(1) OR 13(e)(1)

OF THE SECURITIES EXCHANGE ACT OF 1934

(AMENDMENT NO. 1)

KLA-TENCOR CORPORATION

(Name of Subject Company (Issuer) and Filing Person (Offeror))

Options to Purchase Shares of Common Stock, Par Value \$0.001 Per Share

(Title of Class of Securities)

482480100

(CUSIP Number of Class of Securities)

(Underlying Common Stock)

Jeffrey L. Hall

Senior Vice President and Chief Financial Officer

KLA-Tencor Corporation

160 Rio Robles

San Jose, California 95134

(408) 875-3000

(Name, address and telephone number of person authorized to receive notices and communications on behalf of filing person)

Copy to:

S. James DiBernardo, Esq.

Jill Mather Bartow, Esq.

Morgan, Lewis, & Bockius LLP

Two Palo Alto Square

Palo Alto, California 94306

(650) 843-4000

CALCULATION OF FILING FEE

Transaction valuation* \$141,307,107.00

Amount of filing fee** \$4,338.13***

- * The transaction valuation set forth above is based on the Black-Scholes option valuation model, and assumes that all outstanding options eligible for tender covering an aggregate of 5,139,344 shares of common stock of KLA-Tencor Corporation will be amended pursuant to this offer, which may not occur.
- ** The amount of the filing fee, calculated in accordance with Rule 0-11 under the Securities Exchange Act of 1934, as amended, as modified by Fee Advisory No. 5 for fiscal year 2007, equals \$30.70 per \$1,000,000 of transaction valuation. The transaction valuation set forth above was calculated for the sole purpose of determining the filing fee, and should not be used or relied upon for any other purpose.
- *** Previously paid.
- Check box if any part of the fee is offset as provided by Rule 0-11(a)(2) and identify the filing with which the offsetting fee was previously paid. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

Amount Previously Paid:

Form or Registration No.:

Filing party:

Not applicable.

Not applicable.

Not applicable.

Not applicable.

Not applicable.

" Check the box if the filing relates solely to preliminary communications made before the commencement of a tender offer.

Check the appropriate boxes below to designate any transactions to which the statement relates:

- " third party tender offer subject to Rule 14d-1.
- x issuer tender offer subject to Rule 13e-4.
- " going-private transaction subject to Rule 13e-3.
- " amendment to Schedule 13D under Rule 13d-2.

Check the following box if the filing is a final amendment reporting the results of the tender offer. "

Introductory Statement

This Amendment No. 1 (this Amendment) amends and supplements the Tender Offer Statement on Schedule TO (the Schedule TO) filed with the Securities and Exchange commission (the SEC) on February 27, 2007, relating to our offer to amend or replace outstanding Eligible Options (as defined in the Offer to Amend or Replace attached to the Schedule TO as Exhibit (a)(1)) held by current employees subject to taxation in the United States so that those options will not be subject to Section 409A of the Internal Revenue Code.

Pursuant to this Amendment, Exhibits (a)(6), (a)(7), (a)(9), (a)(10), (a)(12), (a)(13) and (a)(15) to the Schedule TO are hereby amended in their entirety to read as set forth in, and to be replaced by, Exhibits (a)(6), (a)(7), (a)(9), (a)(10), (a)(12), (a)(13) and (a)(15), respectively, to this Amendment. In addition, Exhibit (a)(20) to this Amendment is hereby filed as Exhibit (a)(20) to the Schedule TO.

ITEM 12. EXHIBITS.

(a)(1)	Offer to Amend or Replace, dated February 27, 2007.**
(a)(2)	Email Announcement of Offer to Amend or Replace, dated February 27, 2007.**
(a)(3)	Frequently Asked Questions.**
(a)(4)	Screenshot of Login Page to Offer website at https://kla.equitybenefits.com.**
(a)(5)	Screenshot of Welcome Page to Offer website at https://kla.equitybenefits.com.**
(a)(6)	Screenshot of Electronic Election Form (screenshots 1-2).
(a)(7)	Screenshot of Election Amendment Review.
(a)(8)	Screenshot of Agreement to Terms of Election (screenshots 1-3).**
(a)(9)	Screenshot of Print Confirmation.
(a)(10)	Screenshot of Election Confirmation Statement.
(a)(11)	Instructions to Electronic Election Form.**
(a)(12)	Form of Stock Option Amendment and Special Bonus Agreement.
(a)(13)	Form of Acknowledgement of Receipt of Election Form.
(a)(14)	Form of Email Reminder of Expiration Date.**
(a)(15)	Paper Election Form.
(a)(16)	Form of Notice of Expiration of Offer, Amendment of Eligible Option and Commitment to Pay Cash Bonus.**
(a)(17)	Material Income Tax Consequences for Eligible Optionees Resident Outside the United States.*
(a)(18)	KLA-Tencor Corporation Annual Report on Form 10-K for the year ended June 30, 2006, filed with the SEC on January 29, 2007, is incorporated herein by reference.
(a)(19)	KLA-Tencor Corporation Quarterly Report on Form 10-Q for its fiscal quarter ended September 30, 2006, filed with the SEC on January 29, 2007, is incorporated herein by reference.
(a)(20)	Email Containing Hyperlink to Offer to Amend or Replace and Information Regarding Eligible Options, dated March 2, 2007.
(b)	Not applicable.
(d)(1)	KLA-Tencor Corporation Restated 1982 Stock Option Plan, as amended November 18, 1996, is incorporated herein by reference from Exhibit 10.74 to Form S-8, filed with the SEC on March 7, 1997.

- (d)(2) KLA-Tencor Corporation Restated 1982 Stock Option Plan Form of Stock Option Agreement.**
- (d)(3) KLA-Tencor Corporation 2000 Nonstatutory Stock Option Plan is incorporated herein by reference from Exhibit 10.3 to Form S-8, filed with the SEC on September 27, 2002.
- (d)(4) KLA-Tencor Corporation 2000 Nonstatutory Stock Option Plan Form of Stock Option Agreement.**
- (d)(5) KLA-Tencor Corporation 2004 Equity Incentive Plan is incorporated herein by reference from Exhibit 10.1 to Form S-8, filed with the SEC on December 23, 2004.
- (d)(6) KLA-Tencor Corporation 2004 Equity Incentive Plan Form of Stock Option Agreement.**
- (g) Not applicable.
- (h) Not applicable.

ITEM 13. INFORMATION REQUIRED BY SCHEDULE 13E-3.

(a) Not applicable.

^{*} To be filed by amendment.

^{**} Previously filed.

SIGNATURE

After due inquiry and to the best of my knowledge and belief, I certify that the information set forth in this Amendment No. 1 to Schedule TO is true, complete and correct.

KLA-TENCOR CORPORATION

By: /s/ Jeffrey L. Hall Jeffrey L. Hall

Chief Financial Officer

Date: March 2, 2007

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