

INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person* DENTINGER MARK P <small>(Last) (First) (Middle)</small> C/O KLA-TENCOR CORPORATION, ONE TECHNOLOGY DRIVE <small>(Street)</small> MILPITAS, CA 95035 <small>(City) (State) (Zip)</small>	2. Date of Event Requiring Statement (Month/Day/Year) 09/03/2008	3. Issuer Name and Ticker or Trading Symbol KLA TENCOR CORP [KLAC]	
		4. Relationship of Reporting Person(s) to Issuer <small>(Check all applicable)</small> <input type="checkbox"/> Director <input type="checkbox"/> 10% Owner <input checked="" type="checkbox"/> Officer (give title below) <input type="checkbox"/> Other (specify below) EVP & Chief Financial Officer	5. If Amendment, Date Original Filed(Month/Day/Year)
		6. Individual or Joint/Group Filing(Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person	

Table I - Non-Derivative Securities Beneficially Owned

1. Title of Security (Instr. 4)	2. Amount of Securities Beneficially Owned (Instr. 4)	3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	4. Nature of Indirect Beneficial Ownership (Instr. 5)
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Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

SEC 1473 (7-02)

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.

Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 4)	2. Date Exercisable and Expiration Date (Month/Day/Year)		3. Title and Amount of Securities Underlying Derivative Security (Instr. 4)		4. Conversion or Exercise Price of Derivative Security	5. Ownership Form of Derivative Security: Direct (D) or Indirect (I) (Instr. 5)	6. Nature of Indirect Beneficial Ownership (Instr. 5)
	Date Exercisable	Expiration Date	Title	Amount or Number of Shares			

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
DENTINGER MARK P C/O KLA-TENCOR CORPORATION ONE TECHNOLOGY DRIVE MILPITAS, CA 95035			EVP & Chief Financial Officer	

Signatures

Mark P. Dentinger	09/11/2008
<small>**Signature of Reporting Person</small>	<small>Date</small>

Explanation of Responses:

No securities are beneficially owned

* If the form is filed by more than one reporting person, see Instruction 5(b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Remarks:

No securities are beneficially owned.

Limited Power of Attorney - Securities Law Compliance

This statement confirms that the undersigned, as an officer, director or beneficial owner of more than 10% of any class of any equity security of KLA-Tencor Corporation (the "Corporation"), hereby appoints Brian Martin (in his role as corporate secretary) and Jeffrey Eisenberg (in his role as corporate assistant secretary), and each of them, the undersigned's true and lawful attorney-in-fact and agent to:

1. complete and execute Forms 3, 4 and 5 and other forms (including any amendments thereto) as such attorney-in-fact shall in his discretion determine to be required or advisable pursuant to Section 16 of the Securities Exchange Act of 1934 (as amended) and the rules and regulations promulgated thereunder, or any successor laws and regulations, as a consequence of the undersigned's ownership, acquisition or disposition of securities of the Corporation; and
2. to do all acts necessary in order to file such forms with the Securities and Exchange Commission, any securities exchange or national association, that the Corporation and such other person or agency as the attorney-in-fact shall deem appropriate.

The undersigned hereby ratifies and confirms all that said attorneys-in-fact and agents shall do or cause to be done by virtue hereof. The undersigned acknowledges that the foregoing attorneys-in-fact, in serving in such capacity at the request of the undersigned, are not assuming, nor is the Corporation assuming, any of the undersigned's responsibilities to comply with Section 16 of the Securities Exchange Act of 1934 (as amended). This Limited Power of Attorney shall remain in full force and effect until the undersigned is no longer required to file Forms 3, 4 and 5 with respect to the undersigned's ownership of and transactions in securities of the Corporation, unless earlier revoked by the undersigned in a signed writing delivered to the Corporation and the foregoing attorneys-in-fact.

This Limited Power of Attorney is executed at Milpitas, California as of the date set forth below.

Signature: /s/ Mark P. Dentinger
Print Name: Mark P. Dentinger
Dated: September 11, 2008

Witness:

Signature: /s/ Anita Scelsa
Print Name: Anita Scelsa
Dated: September 11, 2008