

FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

OMB APPROVAL	
OMB Number:	3235-0287
Estimated average burden hours per response...	0.5

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

STATEMENT OF CHANGES IN 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 * Trafas Brian M.		2. Issuer Name and Ticker or Trading Symbol KLA TENCOR CORP [KLAC]		5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input type="checkbox"/> Director <input type="checkbox"/> 10% Owner <input checked="" type="checkbox"/> Officer (give title below) <input type="checkbox"/> Other (specify below) SVP, Global Customer Org.	
(Last) (First) (Middle) C/O KLA-TENCOR CORPORATION, ONE TECHNOLOGY DRIVE		3. Date of Earliest Transaction (Month/Day/Year) 09/07/2016			
(Street) MILPITAS, CA 95035		4. 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	
(City) (State) (Zip)					

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock - Restricted Stock Units (1)	09/07/2016		A		8,937 (2) (3)	A	\$ 0	35,330 (4) (5)	D	
Common Stock	09/07/2016		M		4,468 (6)	A	\$ 0	8,240	D	
Common Stock	09/07/2016		F		2,332 (7)	D	\$ 70.8	5,908	D	
Common Stock	09/07/2016		M		1,307 (8)	A	\$ 0	7,215	D	
Common Stock	09/07/2016		F		682 (9)	D	\$ 70.8	6,533	D	
Common Stock	09/07/2016		M		3,269 (10)	A	\$ 0	9,802	D	
Common Stock	09/07/2016		F		1,570 (11)	D	\$ 70.8	8,232	D	

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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SEC 1474 (9-02)

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

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Underlying Securities (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of Derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form of Derivative Security: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date					

Reporting Owners

Relationships

Reporting Owner Name / Address	Director	10% Owner	Officer	Other
Trafas Brian M. C/O KLA-TENCOR CORPORATION ONE TECHNOLOGY DRIVE MILPITAS, CA 95035			SVP, Global Customer Org.	

Signatures

Teri Little as Attorney-in-Fact for Brian M. Trafas		09/09/2016
**Signature of Reporting Person		Date

Explanation of Responses:

* If the form is filed by more than one reporting person, *see* Instruction 4(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).

(1) Each restricted stock unit ("RSU") represents a contingent right to receive one share of KLA-Tencor common stock.

On August 6, 2013, in addition to the RSUs granted on that date that were subject only to service-vesting requirements (which RSUs were previously reported on Form 4), the Reporting Person was also granted RSUs covering up to a maximum of 8,937 shares (based on 125% of the target shares of 7,150) of KLA-Tencor common stock, subject to both performance-vesting and service-vesting requirements. Following the completion of KLA-Tencor's audited financial statements for the 2016 fiscal year, on September 7, 2016 the Compensation Committee of KLA-Tencor's Board of Directors determined the level at which the corporate performance goals were attained and, based on the assessment, determined that the number of shares subject to the RSUs is 8,937.

(3) The Reporting Person vested fifty percent (50%) of the performance-based RSUs upon the date on which the Compensation Committee of KLA-Tencor's Board of Directors determined the level at which the underlying performance goals were attained (September 7, 2016) and will vest in the remaining fifty percent (50%) upon his completion of four years of service following the grant date of the award (August 6, 2013). The shares of common stock will be issued as the performance-based RSUs vest.

(4) Does not include performance-based RSUs, if any, held by the Reporting Person for which an assessment has not yet been made regarding the achievement of the applicable performance goals. Any such holdings will be reported on a Form 4 within two business days of the date such assessment is made.

(5) Reflects an increase of 8,937 RSUs in connection with the determination of the level at which the August 6, 2013 performance-based RSUs were attained, less the fifty percent (50%) of such award that vested upon such assessment, as described in footnote 3, and less the shares that vested that are noted in footnotes 8 and 10 below.

(6) As noted in Footnote 2, on August 6, 2013, the Reporting Person received a grant of performance-based RSUs that, following the completion of fiscal year 2016, was determined by the Compensation Committee of KLA-Tencor's Board of directors (on September 7, 2016) to cover 8,937 shares of KLA-Tencor common stock. On September 7, 2016, the Reporting Person vested in fifty percent (50%) of such performance-based RSUs.

(7) Pursuant to the terms of the August 6, 2013 RSU grant, 2332 shares of KLA-Tencor common stock were automatically withheld at vesting to cover required tax withholding. The fair market value of KLA-Tencor common stock used for purposes of calculating the number of shares to be withheld was the closing price of KLA-Tencor common stock as reported on September 7, 2016.

(8) On September 7, 2012, the Reporting Person received a grant of restricted stock units covering 5,230 shares of KLA-Tencor common stock. On September 7, 2016, the Reporting Person vested in 25% of such RSUs.

(9) Pursuant to the terms of the August 6, 2013 RSU grant, 682 shares of KLA-Tencor common stock were automatically withheld at vesting to cover required tax withholding. The fair market value of KLA-Tencor common stock used for purposes of calculating the number of shares to be withheld was the closing price of KLA-Tencor common stock as reported on September 7, 2016.

(10) On September 7, 2012, the Reporting Person received a grant of restricted stock units covering 6,538 shares of KLA-Tencor common stock. On September 7, 2016, the Reporting Person vested in 50% of such RSUs.

(11) Pursuant to the terms of the August 6, 2013 RSU grant, 1,570 shares of KLA-Tencor common stock were automatically withheld at vesting to cover required tax withholding. The fair market value of KLA-Tencor common stock used for purposes of calculating the number of shares to be withheld was the closing price of KLA-Tencor common stock as reported on September 7, 2016.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.

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