

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

SCHEDULE 13G

Under the Securities Exchange Act of 1934

(Amendment No. 8)*

KLA -Tencor Corporation
(Name of Issuer)

Common Stock
(Title of Class of Securities)

482480100
(CUSIP Number)

December 31, 2003
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
 Rule 13d-1(c)
 Rule 13d-1(d)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

CUSIP: 482480100
<page>

Page 1 of 5

- 1 NAMES OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)
Capital Group International, Inc.
95-4154357
- 2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a)
(b)
- 3 SEC USE ONLY
- 4 CITIZENSHIP OR PLACE OF ORGANIZATION
California

5 SOLE VOTING POWER
16,891,120

NUMBER OF
SHARES
BENEFICIA
L
Y OWNED BY
EACH
REPORTING
PERSON
WITH:

6 SHARED VOTING POWER
NONE

7 SOLE DISPOSITIVE POWER
19,327,980

8 SHARED DISPOSITIVE POWER
NONE

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
19,327,980 Beneficial ownership disclaimed pursuant to Rule 13d-4

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(SEE INSTRUCTIONS)

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9
9.9%

12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)
HC

CUSIP: 482480100
<page>

Page 2 of 5

SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

Schedule 13G
Under the Securities Exchange Act of 1934

Amendment No. 8

Item 1(a) Name of Issuer:
KLA -Tencor Corporation

Item 1(b) Address of Issuer's Principal Executive Offices:
160 Rio Robles
San Jose, CA 95134

Item 2(a) Name of Person(s) Filing:
Capital Group International, Inc.

Item 2(b) Address of Principal Business Office or, if none,
Residence:
11100 Santa Monica Blvd.
Los Angeles, CA 90025

Item 2(c) Citizenship: N/A

Item 2(d) Title of Class of Securities:
Common Stock

Item 2(e) CUSIP Number:
482480100

Item 3 If this statement is filed pursuant to sections 240.13d-1(b)
or 240.13d-2(b) or (c), check whether the person filing is a:
(g) A parent holding company or control person in
accordance with section 240.13d-1(b) (1) (ii) (G).

Item 4 Ownership

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

See page 2

- (a) Amount beneficially owned:
- (b) Percent of class:
- (c) Number of shares as to which the person has:
- (i) Sole power to vote or to direct the vote:
- (ii) Shared power to vote or to direct the vote:
- (iii) Sole power to dispose or to direct the disposition of:
- (iv) Shared power to dispose or to direct the disposition of:

CUSIP: 482480100

Page 3 of 5

<page>

Capital Group International, Inc. ("CGII") is the parent holding company of a group of investment management companies that hold investment power and, in some cases, voting power over the securities reported in this Schedule 13G. The investment management companies, which include a "bank" as defined in Section 3(a)(6) of the Securities Exchange Act of 1934 (the "Act") and several investment advisers registered under Section 203 of the Investment Advisers Act of 1940, provide investment advisory and management services for their respective clients which include registered investment companies and institutional accounts. CGII does not have investment power or voting power over any of the securities reported herein. However, by virtue of Rule 13d-3 under the Act, CGII may be deemed to "beneficially own" 19,327,980 shares or 9.9% of the 194,711,000 shares of Common Stock believed to be outstanding.

Item 5 Ownership of Five Percent or Less of a Class. If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following: []

Item 6 Ownership of More than Five Percent on Behalf of Another Person: N/A

Item 7 Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company or Control Person.

1. Capital Guardian Trust Company is a bank as defined in Section 3(a)(6) of the Act and an investment adviser registered under Section 203 of the Investment Adviser Act of 1940, and a wholly owned subsidiary of Capital Group International, Inc.
2. Capital International Limited (CIL) does not fall within any of the categories described in Rule 13d-1(b)(ii)(A-F) but its holdings of any reported securities come within the five percent limitation as set forth in a December 15, 1986 no-action letter from the Staff of the Securities and Exchange Commission to The Capital Group Companies, Inc. CIL is a wholly owned subsidiary of Capital Group International, Inc.
3. Capital International S.A. (CISA) does not fall within any of the categories described in Rule 13d-1(b)(ii)(A-F) but its holdings of any reported securities come within the five percent limitation as set forth in a December 15, 1986 no-action letter from the Staff of the Securities and Exchange Commission to The Capital Group Companies, Inc. CISA is a wholly owned subsidiary of Capital Group International, Inc.
4. Capital International Research and Management, Inc. dba Capital International, Inc. is an investment adviser registered under Section 203 of the Investment Advisers Act of 1940 and is a wholly owned subsidiary of Capital Group International, Inc.

Item 8 Identification and Classification of Members of the Group:
N/A

CUSIP: 482480100

Page 4 of 5

<page>

Item 9 Notice of Dissolution of Group: N/A

Item 10 Certification

By signing below, I certify that, to the best of my knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

Signature

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Date: February 10, 2004

Signature: *David I. Fisher
Name/Title: David I. Fisher, Chairman
Capital Group International, Inc.

*By /s/ Kristine M. Nishiyama
Kristine M. Nishiyama
Attorney-in-fact

Signed pursuant to a Power of Attorney dated January 30, 2003 included as an Exhibit to Schedule 13G filed with the Securities and Exchange Commission by Capital Group International, Inc. on February 10, 2003 with respect to Acclaim Entertainment Inc

CUSIP: 482480100

Page 5 of 5

<page>