

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13G
Under the Securities Exchange Act of 1934

Amendment # 5

Name of
Issuer: KLA TENCOR CORP

Title of Class
of Securities: Common Stock

CUSIP Number: 482480100

1) NAME OF I.R.S. IDENTIFICATION NO. OF REPORTING PERSON

The Prudential Insurance Company of America 22-1211670

2.) MEMBER OF A GROUP: (a) N/A

(b) N/A

3) SEC USE ONLY:

4) PLACE OF ORGANIZATION: A mutual insurance company organized
under the laws of the State of New Jersey

NUMBER OF SHARES BENEFICIALLY OWNED BY REPORTING PERSON WITH:

5) Sole Voting Power: 344,400 See Exhibit

A

6) Shared Voting Power: 3,951,113 See Exhibit A

7) Sole Dispositive Power: 344,400 See Exhibit A

8) Shared Dispositive Power: 4,257,236 See Exhibit

A

9) AGGREGATE AMOUNT BENEFICIALLY OWNED:

4,601,636 See Exhibit A

10) AGGREGATE AMOUNT IN ROW (9) EXCLUDES SHARES: Not Applicable

11) PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9):

5.12 See Exhibit A

12) TYPE OF REPORTING PERSON: IC, IA

ITEM 1(a). NAME OF ISSUER:

KLA TENCOR CORP

ITEM 1(b). ADDRESS OF ISSUER'S EXECUTIVE OFFICES:

KLA TENCOR CORP

160 Rio Robles
San Jose, CA 95134

ITEM 2(a). NAME OF PERSON FILING:

The Prudential Insurance Company of America

ITEM 2(b). ADDRESS OF PRINCIPAL BUSINESS OFFICE:

751 Broad Street
Newark, New Jersey 07102-3777

ITEM 2(c). CITIZENSHIP:

A mutual insurance company organized under the
laws of
the State of New Jersey

ITEM 2(d). TITLE OF CLASS OF SECURITIES:

Common Stock

ITEM 2(e). CUSIP NUMBER:

ITEM 3. The Person filing this statement is an Insurance Company as defined in Section 3(a) (19) of the Securities Exchange Act of 1934, and an Investment Adviser registered under Section 203 of the Investment Advisers Act of 1940.

ITEM 4. OWNERSHIP:

(a) Number of Shares Beneficially Owned: 4,601,636 See Exhibit A

(b) Percent of Class: 5.12

(c) Powers Of Shares

Number	Of Shares
Sole power to vote or	344,400
See Exhibit A	
to direct the vote	
Shared power to vote or	3,951,113
See Exhibit A	
to direct the vote	
Sole power to dispose or	344,400
See Exhibit A	
to direct disposition	
Shared power to dispose	4,257,236
See Exhibit A	
or to direct disposition	

ITEM 5. OWNERSHIP OF 5% OR LESS OF A CLASS:

Not Applicable

ITEM 6. OWNERSHIP OF MORE THAN 5% ON BEHALF OF ANOTHER PERSON:

See Exhibit A

ITEM 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE ULTIMATE PARENT COMPANY:

Not Applicable

ITEM 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP:

Not Applicable

ITEM 9. NOTICE OF DISSOLUTION OF GROUP:

Not Applicable

ITEM 10. CERTIFICATION:

By signing below, the Prudential Insurance Company of America certifies that, to the best of its knowledge and belief, the securities referred to above were acquired in the ordinary course of business and were not acquired for the purpose of and do not have the effect of changing or influencing the control of the issuer of such securities and were not acquired in connection with or as a participant in any transaction having such purpose or effect.

The filing of this statement should not be construed as an admission that Prudential is, for purposes of Sections 13 or 16 of the Securities Exchange Act of 1934, the beneficial owner of such shares.

After reasonable inquiry and to the best of its knowledge and belief, The Prudential Insurance Company of America certifies that the information set forth in this statement is true, complete and correct.

THE PRUDENTIAL INSURANCE COMPANY OF AMERICA

By: Ellen McGlynn Koke
Vice President

Date: 01/31/2000
As of: 12/31/1999

Exhibit A

ITEM 6. OWNERSHIP:

The Prudential Insurance Company of America ('Prudential') presently holds 21,500 shares of Issuer's common stock for the benefit of its general account.

In addition, Prudential may have direct or indirect voting and/or investment discretion over 4,580,136 shares which are held for its own benefit or for the benefit of its clients by its separate accounts, externally managed accounts, registered investment companies, subsidiaries and/or other affiliates. Prudential is reporting the combined holdings of these entities for the purpose of administrative convenience.

These shares were acquired in the ordinary course of business, and not with the purpose or effect of changing or influencing control of the Issuer. The filing of this statement should not be construed as an admission that Prudential is, for the purposes of Sections 13 or 16 of the Securities Exchange Act of 1934, the beneficial owner of these shares.