

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE TO
(Amendment No. 2)

(Rule 14d-100)

TENDER OFFER STATEMENT UNDER SECTION 14(d)(1) OR 13(e)(1)
OF THE SECURITIES EXCHANGE ACT OF 1934

THERMA-WAVE, INC.

(Name of subject company (Issuer))

KLA-TENCOR CORPORATION
FENWAY ACQUISITION CORPORATION
(Names of Filing Persons (Offerors))

Common Stock, \$0.01 par value per share
Series B Convertible Preferred Stock, \$0.01 par value per share
(Title of classes of securities)

88343A108
NA
(CUSIP number of classes of securities)

Jeffrey L. Hall
Chief Financial Officer
KLA-Tencor Corporation
160 Rio Robles
San Jose, California 95134-1809
Telephone: (408) 875-3000

Copies to:
William M. Kelly, Esq.
Davis Polk & Wardwell
1600 El Camino Real
Menlo Park, California 94025
Telephone: (650) 752-2000

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

CALCULATION OF FILING FEE

Transaction Valuation(1)	Amount of Filing Fee(2)
\$73,954,744	\$7,914

- (1) Estimated for purposes of calculating the filing fee only. This amount is based upon an estimate of the maximum number of shares of Common Stock and Series B Convertible Preferred Stock of Therma-Wave to be purchased pursuant to the tender offer at the tender offer price of \$1.65 per share of Common Stock and \$1.65 per share of Common Stock into which each share of Series B Convertible Preferred Stock is convertible.
- (2) The amount of the filing fee calculated in accordance with the Securities Exchange Act of 1934, as amended, equals \$107.00 for each \$1,000,000 of value.
- Check the 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: \$ 7,914 Filing Party: KLA-Tencor Corporation and Fenway Acquisition Corporation
Form of Registration No.: Schedule TO Date Filed: January 18, 2007

- Check the box if the filing relates solely to preliminary communications made before the commencement of the 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
 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:

TABLE OF CONTENTS

[Item 11. Additional Information](#)

[Item 12. Exhibits](#)

[Item 13. Information Required by Schedule 13 E-3](#)

SIGNATURE

This Amendment No. 2 to Tender Offer Statement on Schedule TO (this "Amendment") is filed by KLA-Tencor Corporation, a Delaware corporation ("Parent"), and Fenway Acquisition Corporation, a Delaware corporation and a wholly-owned subsidiary of Parent ("Purchaser"). This Amendment relates to the offer by the Purchaser to purchase all of the outstanding shares of common stock, par value \$0.01 per share ("Common Shares"), of Therma-Wave, Inc., a Delaware corporation (the "Company"), at

\$1.65 per Common Share, net to the seller in cash without interest, less any required withholding taxes, and all the outstanding shares of Series B Convertible Preferred Stock, par value \$0.01 per share ("Preferred Shares"), of the Company at \$1.65 per Common Share into which each Preferred Share is convertible at the time of the consummation of the Offer, net to the seller in cash without interest, less any required withholding taxes, upon the terms and subject to the conditions set forth in the Offer to Purchase dated January 18, 2007 (the "Offer to Purchase") and in the related Letter of Transmittal, copies of which are attached as Exhibits (a)(1)(i) and (a)(1)(ii) (which, together with any amendments or supplements thereto, collectively constitute the "Offer"). Capitalized terms used and not defined herein shall have the meanings assigned to such terms in the Offer to Purchase.

The information set forth in the Offer to Purchase and the related Letter of Transmittal is incorporated herein by reference with respect to Items 1 through 9 and 11 of this Schedule TO, except that such information is hereby amended and supplemented to the extent specifically provided herein.

Item 11. Additional Information.

1. Item 11 of the Schedule TO is hereby amended and supplemented as follows:

"On March 15, 2007, Parent announced that the Purchaser had extended the Offer, upon the terms and conditions set forth in the Offer to Purchase, until 12:00 Midnight, New York City time, on Wednesday, April 18, 2007. The Offer had been previously scheduled to expire at 12:00 Midnight, New York City time, on Thursday, March 15, 2007. The depository for the Offer has advised Parent and the Purchaser that, as of 12:00 Midnight, New York City time, on March 14, 2007, approximately 20,176,389 Common Shares and 10,400 Preferred Shares had been tendered and not withdrawn from the Offer."

2. The subsection entitled "Antitrust in Israel" in Section 16 of the Offer to Purchase entitled "Certain Legal Matters; Regulatory Approvals" is hereby amended to add the following sentence:

"On March 15, 2007, Parent received written notification from the Restrictive Trade Practices Commissioner that the Israeli Antitrust Authority has consented to the proposed transaction."

Item 12. Exhibits.

- (a)(1)(i) Offer to Purchase, dated January 18, 2007.*
- (a)(1)(ii) Form of Letter of Transmittal.*
- (a)(1)(iii) Form of Notice of Guaranteed Delivery.*
- (a)(1)(iv) Form of Letter to Brokers, Dealers, Commercial Banks, Trust Companies and Other Nominees.*
- (a)(1)(v) Form of Letter to Clients for use by Brokers, Dealers, Commercial Banks, Trust and Other Nominees.*
- (a)(1)(vi) Guidelines for Certification of Taxpayer Identification Number on Substitute Form W-9.*
 - (b) None.
 - (d)(1) Agreement and Plan of Merger, dated January 7, 2007, among Parent, the Purchaser and the Company.*
 - (d)(2) Tender and Support Agreement, dated January 7, 2007, among Parent, the Purchaser, the Company and each shareholder party thereto.*
 - (d)(3) Amended and Restated Mutual Nondisclosure Agreement, dated May 15, 2006, by and between Therma-Wave, Inc. and Parent Corporation.*
 - (g) None.
 - (h) None.

* Previously Filed.

Item 13. Information Required by Schedule 13 E-3.

Not applicable.

SIGNATURE

After due 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.

Dated: March 15, 2007

KLA-TENCOR CORPORATION

By: /s/ Jeffrey L. Hall
Jeffrey L. Hall
Chief Financial Officer