FORM 3

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

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 * KLA TENCOR CORP	2. Date of Event Requiring Statement (Month/Day/Year) 01/07/2007	3. Issuer Name **and** Ticker or Trading Symbol THERMA WAVE INC [TWAV]		
(Last) (First) (Middle) ONE TECHNOLOGY DRIVE		4. Relationship of Reporting Person(s) to Issuer (Check all applicable) ____ Director ____ 10% Owner ____ Officer (give title __X__ Other (specify below) below) See footnotes 1 and 2 below	5. If Amendment, Date Original Filed(Month/Day/Year)	
(Street) MILPITAS, CA 95035			6. Individual or Joint/Group Filing(Check Applicable Line) _X_ Form filed by One Reporting Person ___ Form filed by More than One Reporting Person	
(City) (State) (Zip)	**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)
No securities owned	$ 0	I	See footnotes 1 and 2 below (1) (2)

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.   SEC 1473 (7-02)

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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
KLA TENCOR CORP ONE TECHNOLOGY DRIVE MILPITAS, CA 95035				See footnotes 1 and 2 below

Signatures

/s/ Jeffrey L. Hall, Chief Financial Officer		01/17/2007
**Signature of Reporting Person		Date

Explanation of Responses:

* 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).

(1) KLA-Tencor Corporation ("KLA"), Therma-Wave, Inc. ("Therma-Wave") and a wholly-owned subsidiary of KLA ("Merger Corp.") entered into an Agreement and Plan of Merger, dated as of January 7, 2007 (the "Merger Agreement"), pursuant to which Merger Corp. will commence a tender offer (the "Offer") to acquire the outstanding common stock (the "Common Shares") and Series B Convertible Preferred Stock (the "Preferred Shares") of Therma-Wave. Upon consummation of the Offer, Therma-Wave will merge with Merger Corp. (the "Merger").

(2) Certain officers and directors and the holders of the Preferred Shares (the "Shareholders") entered into a tender and support agreement (the "Tender and Support Agreement"), pursuant to which the Shareholders agreed to tender their Common Shares and Preferred Shares within three business days of the commencement of the Offer. KLA has no pecuniary interest in the shares held by the Shareholders. KLA expressly disclaims beneficial ownership of any shares covered by the Tender and Support Agreement.

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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