

| OMB APPROVAL | |
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| OMB Number: | 3235-0104 |
| Estimated average burden hours per response: | 0.5 |

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

| | | | |
|---|---|---|--|
| 1. Name and Address of Reporting Person* <u>KLA TENCOR CORP</u> (Last) (First) (Middle) <u>ONE TECHNOLOGY DRIVE</u> (Street) <u>MILPITAS CA 95035</u> (City) (State) (Zip) | 2. Date of Event Requiring Statement (Month/Day/Year) <u>01/07/2007</u> | 3. Issuer Name and Ticker or Trading Symbol <u>THERMA WAVE INC [TWAV]</u> | |
| | | 4. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director <input type="checkbox"/> 10% Owner <input type="checkbox"/> Officer (give title below) <input checked="" type="checkbox"/> Other (specify below) <input type="checkbox"/> <u>See footnotes 1 and 2 below</u> | 5. If Amendment, Date of 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 |

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 | \$0.00 | I | See footnotes 1 and 2 below ⁽¹⁾⁽²⁾ |

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: Direct (D) or Indirect (I) (Instr. 5) | 6. Nature of Indirect Beneficial Ownership (Instr. 5) |
|--|--|-----------------|---|--|--|---|
| | Date Exercisable | Expiration Date | | | | |
| | | | | | | |

Explanation of Responses:

- KLA-Tencor Corporation ("KLA"), Therna-Wave, Inc. ("Therna-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 Therna-Wave. Upon consummation of the Offer, Therna-Wave will merge with Merger Corp. (the "Merger").
- 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.

Remarks:

/s/ Jeffrey L. Hall, Chief Financial Officer 01/17/2007

** Signature of Reporting Person Date

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

* 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).

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

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.