



ELECTRONICS TEST AND DEVELOPMENT CENTRE
(STQC Directorate, Ministry of Information Technology, Govt. of India)
100 feet Road, Peenya Industrial Estate, Bangalore - 560 058.
(Tel.: 080 - 2839 4252, 4647, and 5992. Fax. : 080-2839 1804)



T - 0044

TEST REPORT NUMBER T -59831/3

PAGE 01 OF 03

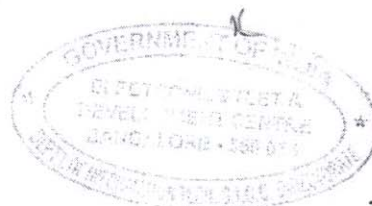
1. SCOPE.

| | | |
|----|--|---|
| 1. | SERVICE REQUEST NUMBER | 59831 |
| 2. | REQUESTED BY (NAME & ADDRESS OF THE ORGANIZATION) | M/S. WAAREE ENERGIES PVT.LTD., SURAT-394230. |
| 3. | DESCRIPTION OF THE COMPONENTS: | |
| | a) NOMENCLATURE | PV MODULE |
| | b) MANUFACTURED BY | WAAREE. |
| | c) MODEL / TYPE NO. | WS-74 / MONO |
| | d) SERIAL NO. | WS75N025JH |
| 4. | DATE OF SUBMISSION OF SAMPLES | 26 / 12 / 2008 |
| 5. | CONDITION OF ITEM ON RECEIPT | GOOD |
| 6. | DATE OF COMPLETION OF TESTS | 03/ 02 / 2009 |
| 7. | APPLICABLE TEST SPECIFICATION | @ STC - (AS PER IEC 60904-1) |
| 8. | TEST CATEGORY | PERFORMANCE TEST |

2. MAJOR EQUIPMENTS USED :

| SL. NO. | NOMENCLATURE | MAKE | MODEL | UNCERTAINTY | CAL VALIDITY |
|---------|---------------|-------|-------|---|--------------|
| 1. | SUN SIMULATOR | SPIRE | 240A | NON UNIFORMITY OF THE LIGHT SOURCE: $\pm 3\%$ | AUG 2009 |

THIS REPORT REFERS TO THE ITEM TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL.
REFER TO INFORMATION CONTAINED ON THE COVER.





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Test Details and Results.

MODULE DIMENSIONS

Cell Area : 152.25 Sq.cm
 Module area : 6507 Sq.cm

I. GENERAL REQUIREMENTS

| Item No. | Item | Requirement | Observation |
|----------|------------------|---|-------------|
| 1. | i. Terminal Box. | The terminal box on the module should have a provision for opening for replacing the cable, if required. | Provided. |
| | ii. Markings | A strip containing the following details should be laminated inside the module so as to be clearly visible from front side. | Provided. |
| | | a. Name of the manufacturer. | WAAREE |
| | | b. Model or type no. | WS-74/MONO |
| | c. Serial no. | WS7512080138 | |

II. PERFORMANCE TEST AT STC (Refer page 3, for I-V CURVE)

Pre-condition: Light soaking under natural Sunlight for 7 days.

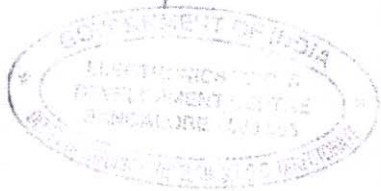
| oc in volts | Isc In Amps | Pmax In Watts | Vmp In Volts | Imp In Amps | FF | Rs In Ohms | Rsh in Ohms | Vld In Volts | Ild In Amps | Pld In Watts | C.eff In % | M.eff In % |
|-------------|-------------|---------------|--------------|-------------|-------|------------|-------------|--------------|-------------|--------------|------------|------------|
| 2.15 | 5.08 | 79.00 | 17.85 | 4.43 | 0.702 | 0.930 | 33.18 | 16.40 | 4.56 | 74.75 | 14.4 | 12.1 |

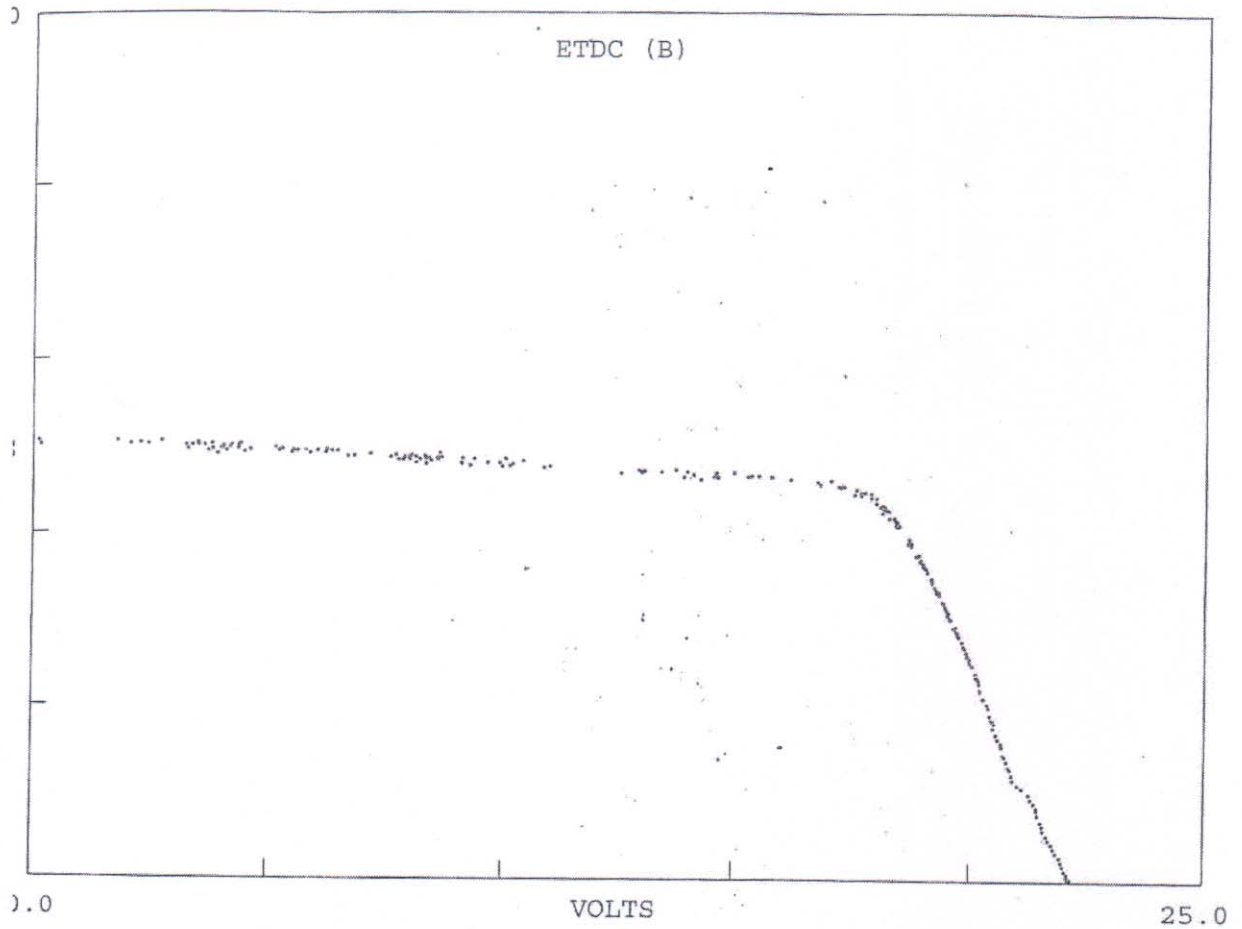
TESTED BY
 S. JOBIN
 DATE 4/2/09

B. Sathish RAO
 AUTHORISED SIGNATORY
 DATE... 6/2/09

ISSUED BY *Vaidya*
 DATE...

B. SATHISH RAO
 Director
 ELECTRONICS TEST & DEVELOPMENT CENTRE
 Govt. of India, STQC Directorate
 Department of Information Technology
 BANGALORE - 560 058.





(no filename)
 ID # :75N025JH
 22-01-2009, 15:24:24

Sun (mW/cm2) 100
 Temp (degC) 25 , 27
 Voc (Volts) 22.15
 Isc (Amps) 5.08
 Pmax (Watts) 79.00
 Vmp (Volts) 17.85
 Imp (Amps) 4.43
 Fill Factor .702
 Rs (Ohms) .930
 Rsh (Ohms) 33.18
 Cell Eff (%) 14.4
 Vld (Volts) 16.40
 Ild (Amps) 4.56
 Pld (Watts) 74.75
 Mod Eff (%) 12.1



[Handwritten Signature]
 12/09