

BUREAU OF INDIAN STANDARDS

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BIS BANGALORE LABORATORY
Peenya Industrial Area
1st Stage, Tumkur Road
Bangalore – 560 058

Ref : BNBL / 13:3

Date : 19 01 2007

Subject: Fabrication and Supply of Test Fixtures for Thermal Shock and Rain Penetration Test of Solar Flat Plate Collector as per IS 12933 (Part 5): 2003.

M/s Coronation Instruments
20, Soosai Nagar
Madurai-625018

Dear Sir(s),

Technical & Commercial Bids are invited for **Fabrication and Supply of Test Fixtures for Thermal Shock and Rain Penetration Test of Solar Flat Plate Collector as per IS 12933 (Part 5): 2003** in separate **SEALED** covers, which should reach the undersigned latest by **17 00 hours** on **5 February 2007** at the above address.

1. The terms and conditions for submitting quotations and supply of the equipment are given in **Annexure – I.**
2. The detailed specification(s) of the above mentioned equipments(s)/items are given in **Annexure - II.**
3. The Technical Bids shall be opened in the Conference Hall of BIS Office, Bangalore at the address mentioned above at **15 00 hours** on **15 January 2007** in the presence of such tenderers or their duly authorized representatives who may like to attend.
4. Please note that the envelopes containing Technical & Commercial Bids are sealed properly i.e. either wax sealed or with adhesive cello tape on both ends. Unsealed and stapled envelopes shall not be accepted.
5. Unless stated otherwise, quotation(s) shall be deemed to be for delivery at BIS Bangalore Branch Office Laboratory.
6. The specification and terms & Conditions can also be downloaded from BIS Website – www.bis.org.in

Thanking you,

Yours faithfully,

(B.R. Narayanappa)
Director & Head BNBOL

Encl. : 1) Annexure - I
2) Annexure – II

TERMS & CONDITIONS

- 1 The **BUREAU** gives **FIRST PREFERENCE** in its purchase to goods bearing ISI Certification Mark and second preference to those which conform to the relevant Indian Standard Specification as applicable.
- 2 The delivery of stores is required within 30 days of receipt of order. If however, it is not possible for you to affect delivery within the period, you are required to specify the date by which you can guarantee delivery of stores.
3. **The quotation(s) shall be submitted in two parts – Technical Bid & Commercial Bid.** The Technical and Commercial Bids should be sealed by the bidder in separate cover duly super scribed and both these sealed covers are to be put in a bigger cover which should also be sealed and duly super scribed “**Quotations for Fabrication and Supply of Test Fixtures for Thermal Shock and Rain Penetration Test of Solar Flat Plate Collector as per IS 12933 (Part 5): 2003**”. Such Bids shall remain valid for a period of 90 days from the date of opening of quotation(s) specified. The commercial bid will be opened after technical evaluation of technical bid. The date of opening of commercial Bid will be informed to the bidders found suitable in technical evaluation.
- 4 **The offer/quotation must be strictly as per required specifications and the tender terms and conditions.**
- 5 Quotation(s)/Bids qualified by indefinite expressions as “subject to immediate acceptance”, “subject to prior sale”, etc. and incomplete quotation(s) is/are liable to be summarily rejected.
- 6 The Bids should clearly give break-up of cost of each equipment as per specifications. The rates quoted should separately indicate Basic Cost, Excise Duty, Sales Tax, Packing and Forwarding Charges, Freight, Insurance, VAT, etc. In the absence of any such stipulation, it will be presumed that the prices include all such charges and no claim for the same shall be entertained.
- 7 Each tender document shall be accompanied with an **Earnest Money Deposit (EMD) of 3% of cost of the equipment.** The demand draft for the EMD amount shall be drawn in favour of “**Bureau of Indian Standards**”, payable at **Bangalore**. The sealed envelope containing EMD shall be super scribed “**EMD**” and stapled separately with the envelope containing Commercial Bid. This will be returned to the unsuccessful bidders within 30 days of the award of the contract.
- 8 BIS shall pay 90% of the cost after satisfactory installation and commissioning and training, and the balance of 10% as **contract performance security** would be paid after expiry of warranty period. However other terms of payment for contract performance security can also be considered, if so stated clearly.
- 9 The warranty period of the equipment shall be clearly stated in the Technical Bid. The warranty period of an item/equipment shall commence from the date of receipt of the item/equipment in good working condition and satisfactory installation / commissioning / demonstration at BIS Bangalore Laboratory. The warranty period and validity of contract performance security shall be extended for the period of delay in satisfactory installation.
- 10 **Please mention clearly in the Technical Bids regarding address of arrangements for service/repair of the equipments is available.** Suppliers having such arrangements in and around Bangalore for providing timely and efficient service of the equipment would be preferred.

- 11 All goods received would be subjected to inspection, by BIS before or after receipt or commissioning (as applicable). The decision BIS shall be binding. Rejected items/goods/stores shall be removed by the supplier at his own cost and risk, within 30 days of receipt of notice for the removal of such goods, and no liability, whatsoever, on the Bureau shall be attached for the rejected/disapproved goods/items/stores.
- 12 The Bureau reserves the right to accept or reject summarily and or all tenders in whole or in part without assigning any reason whatsoever.
- 13 The Bureau takes no responsibility for delay, loss or non-receipt of tenders after dispatch
- 14 In case of non-compliance with the terms and conditions of the contract, the Bureau reserves its right to :
 - a) Cancel/rescind/revoke the order if supply is not made in time and is not conforming to the required specifications.
 - b) Impose penalty up to 1% of the total value of the order for a delay of every seven days after the scheduled date subject to the ceiling of a maximum of 10% of the total value of the order.
- 15 The equipment should be installed/commissioned and demonstrated by the supplier at BIS Bangalore Laboratory immediately, but in any case within one month after receipt of the item in the lab, and the same will be put under operation to the satisfaction of BIS technical personnel who will test the performance of the equipment. **No separate charges for installation, etc. will be paid to the party beyond the quoted prices.**
- 16 All questions, disputes or differences arising under, out of or in connection with this tender enquiry shall be subject to the exclusive jurisdiction of Bangalore Courts.

BUREAU OF INDIAN STANDARDS
(BANGALORE BRANCH OFFICE LABORATORY)
EQUIPMENT SPECIFICATION

EQUIPMENT SPEC. CODE	:	SFPC 031	
NAME OF THE EQUIPMENT	:	TEST FIXTURE FOR PERFORMANCE TEST	
PROPOSED FOR BIS LABS	:	BNBOL	
TOTAL QUANTITY REQUIRED	:	One No.	
1.0	Scope Prescribes the test fixtures and requirements for the following tests: <ul style="list-style-type: none"> a. External thermal shock test as per Cl. 5.4 of IS 12933 (Pt.5). b. Internal thermal shock test as per Cl. 5.5 of IS 12933 (Pt.5). c. Rain Penetration Test as per Cl.5.6 of IS 12933 (Pt 5) 		
2.0	Requirement. 2.1 MS Angle frame work as per Fig 1 to mount the solar flat plate collector at an inclination of 30° to the horizontal with provision for grouting on the ground. The welding shall be of good quality and ground smooth for proper seating of the collector during testing. The entire assembly shall be powder coated. 2.2 Two numbers of MS pipe assembly, Medium Class, Nominal bore 25 mm provided with nozzles suitable sizes equally spaced along the pipes to deliver water at 4 litres per minute and 40 litres per minute for Thermal Shock test and Rain Penetration test. The pipe assembly shall be given suitable rust preventing protective coating. The pipe assembly shall be provided with suitable threaded nozzle for receiving the connector for water supply. 2.3 Double walled fabricated water tank of capacity 500 litres. Inner wall made of stainless steel and outer wall made of MS and powder coated. Water tank shall be provided with suitable connection for water inlet and outlet. A drain valve shall also be provided for draining the water for periodical cleaning and maintenance. 2.4 Both pipe assemblies shall be connected to a control unit for controlling the flow of water from the water tank. 2.5 Control unit shall be fitted with 2 Numbers of Rotameter as per Specification SFPC 011. 2.6 Individual controls shall be provided to the rotameter for controlling the flow of water at 4 litres per minute and 40 litres per minute. Non-return valve shall be provided for each rotameter in the hydraulic line. 2.7 Hydraulic pump of rating 0.75kW, 230 V, 50Hz, Single phase shall be provided for pumping the water through the nozzles provided in the two pipe assemblies.		
	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
NAME	U.SURENDRA	U.SURENDRA	B.R.NARYANAPPA
DESIGNATION	Director (Mech)	Director (Mech)	Head BNBOL
DATE	14 12 06	14 12 06	14 12 06

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Annexure III

BUREAU OF INDIAN STANDARDS (BANGALORE BRANCH OFFICE LABORATORY)

EQUIPMENT SPECIFICATION

EQUIPMENT SPEC. CODE		:	SFPC 011, SFPC 013 and SFPC 015
NAME OF THE EQUIPMENT		:	ROTAMETER
PROPOSED FOR BIS LABS		:	BNBOL
TOTAL QUANTITY REQUIRED		:	One No each.
1.0	Scope Prescribes the requirements for a precision rotameter for measuring the irradiance on a plane surface which results from direct solar radiation and from the diffuse radiation from the hemisphere. This instrument is required for carrying out the following tests: <ul style="list-style-type: none"> ➤ Outdoor No-flow exposure test as per Cl. 5.2 of IS 12933 (Pt.5). ➤ External thermal shock test as per Cl. 5.4 of IS 12933 (Pt.5). ➤ Internal thermal shock test as per Cl. 5.5 of IS 12933 (Pt.5). ➤ Thermal performance test as per Cl. 6.4 of IS 12933 (Pt.5). 		
2.0	Requirements Body: Acrylic Connection: Flanged with control valve Material for wetted parts: SS 304 Floats: SS 304 Maximum temperature: up to 85 °C Maximum pressure: 15 kgf/cm ² Range: 0-6 lpm, and 0-60 lpm Flow media: Water Accuracy: ± 1 % of FR		
3.0	Calibration : Calibration certificate from NABL accredited calibration agency shall be furnished along with the equipment.		
7.0	Guarantee The equipment shall be guaranteed for a minimum period of one year of satisfactory operation.		
8.0	Specification ---		
9.0	Accessories Nil		
	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
NAME	U.SURENDRA	U.SURENDRA	B.R.NARYANAPPA
DESIGNATION	Director (Mech)	Director (Mech)	Head BNBOL
DATE	14 08 06	14 08 06	14 08 06