

**Bharat Heavy Electricals Limited**

(A Government of India Undertaking)

Electronics Division

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Tender document for the supply of ENVIRONMENTAL CHAMBER**R F Q Number : TRSM900006**

Tender Qty : ONE Number

Tender Due Date and Time : 18.01.2008 13.00 Hrs

Tender Opening Date and Time : 18.01.2008 13.30 Hrs

Place of opening of Tender : SA – MM Conference hall

Scope: Supply, installation and commissioning of environmental test chambers and accessories as per the following details and specifications

1. Two part Bid - Tender shall be submitted in two parts :

- a. Part I – Techno commercial bid without prices.
- b. Part II – Price bid

2. Earnest Money Deposit : EMD of Rs 40,000/- (rupees forty thousand only) shall be submitted in the form of DD along with the bid. EMD in the form of DD / Pay order only is acceptable & any other form is not acceptable and the bid is liable for rejection. EMD amount doesn't carry any interest. The same will be converted as Security Deposit for the successful bidders and for unsuccessful bidders the same will be refunded after finalization of the order. For successful bidders EMD will be refunded after submission of PBG.

3. Delivery Period: Equipment shall be delivered, within 4 months from the date of placement of technically & commercially clear purchase order.

4. Terms and conditions:

1. All the Bidders shall meet the **pre-qualification criteria** and Comply with **Technical Specification** mentioned in this specific tender.
2. Indian Bidders are required to comply with the **general terms and conditions** as per SA – 01 (Annexure –I)
3. Foreign Bidders are required to comply with the **general terms and conditions** as per SA – 02. (Annexure –II)

**REF: 384/SKP/FR3/PQ01****Pre Qualification Criteria**

01. The vendor shall be an Original Equipment Manufacturer (OEM). Only the OEM or their authorized dealers in India along with an authorization letter can submit offers. An authorized Representative/Dealer in India, cannot quote for the same equipment from more than one OEM.
02. The offer shall be only for Standard Catalog Items from the manufacturer and not custom-made one. All the specifications should be supported by Standard Catalogs and Data Sheets of the manufacturer.
03. Offer shall be for a new equipment and not for any refurbished / used equipment. All the parts used in the machine shall also be new and not used / refurbished ones. A declaration to the above effect to be furnished.
04. Foreign OEM shall have Authorized Indian dealer(s) / representative(s) for After-sales service and support. The authorization letter for the dealer/ representative shall be provided.
05. The vendor should have already supplied and installed 3 nos. of similar machines in India during the past 5 years and these must be operating satisfactorily for at least past one year. The details of the customers with contact details, machines installed, date of installations etc. to be provided.
06. The vendor or their authorized service representatives shall have trained engineers in India for commissioning & service for the offered equipment and shall be in a position to provide prompt after sales service and spares support for our installations.
07. The vendor shall be in a position to undertake AMC or provide service support for the equipment supplied, after the expiry of the warranty/ guarantee period either directly or through a service representative.
08. If required by BHEL, the vendor shall arrange for a demonstration of the machine or a similar system operating in India.
09. The vendor shall furnish a comprehensive warranty for at least 12 months from the date of commissioning.

NOTE:

1. Pre qualification will be carried out based on the details furnished by the vendor / feedback from their customers / inspection of the company / product if required by BHEL and at its sole discretion.
2. The Pre qualification criteria are mandatory requirements and the technical bids will be evaluated only when the Pre Qualification criteria are met.

**SPECIFICATIONS FOR Burn-in oven****Ref: SAT-SKP-ENV-01**Technical quote must include compliance statement with respect to these specs.categorically confirming or otherwise each feature and **must be supported with necessary documents.**Also provide a list of existing installations of same or similar products in India.Presence in or around Bangalore will be an advantage.**SCOPE**

Supply, installation and commissioning of environmental test chambers and accessories as per the following details and specifications

APPLICATION

Used for burn-in testing of electronic modules.

TECHNICAL SPECIFICATIONS**1. Test chamber:-**

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|----------------------------------|---|
| a: Overall size (preferable) | : Small footprint, < 2m tall, <1.5 m wide, <2m deep fitted with suitable castors for easy (infrequent) relocation. |
| b: Internal workspace dimensions | : 1m x 1m x 1m approx. (1000 litre capacity, 900l min) wdh |
| c: Total heat load dissipation | : 1000 W min. to be compensated |
| d: Temperature range | : -45 deg C to + 150 deg C |
| e: Temp accuracy | : 1deg C |
| f: Heating / cooling rate | : at least upto 2.5 deg C / minute average
2 degC / min anywhere in -25 to + 125 degC range |
| g: Refrigeration | : CFC free, preferably air-cooled without a cooling tower |
| h: Heating unit | : Air heating |
| i: Openings/ port holes | : 2 on each side approx 100 mm dia for cables with suitable blocking facility |
| j: Front Door | : Double glass with inside vacuum with large viewing Window and illumination with good test space visibility |
| k: Uniformity of temperature | : Adequate forced air circulation to ensure uniform temperature inside the chamber within +/- 1degC. |
| l: Local Display to indicate | : Temperature, heating / cooling cycle, and active program profile (display & Editing) |
| m: Local Display | : LCD Flat touch-panel with Temperature, heating / cooling cycle, and active program profile (display, Editing and controls) and active program profile (display, Editing and controls) |
| n: De- Humidifier | : Suitable capacity to prevent local condensation |
| o: Safety | : Alarm and Oven Trip limits: User programmable for High and low temperatures, with potential free alarm o/p..
Hardware backup for oven trip in case of PLC failures |
| p: Analog Output for temperature | : Standard or option, for set & measured values
for hooking to external test equipment/ recorder |



2. Controller for Chamber with Software:-

The chamber should be equipped with integral windows embedded (English) based controller/ PLC with multiple locally stored programmable profiles. Controls & readback must be possible from local panel as well as from a remote PC (connected over Serial, Ethernet & USB) shall include:-.

- a: temperature control within 1 degC of set value
- b: Multiple user program profiles should be stored in the controller itself and must allow for edit/ modification of all parameters like No. of cycles, temp. change rates, dwell time etc. These modifications shall be performed on- or off-line with Hard disk backup on PC.
- c: Full text & Graphic Log of Time, temperature, error msg. etc thru PC and printer.
- d: The control software optionally running on remote PC must be based on MS Windows and should be able to control several chambers simultaneously.
- e: A Built-in protection against loss of data and program in case of power failures for at least 60 minutes.
- f: Extra I/Os for data processing and logging
 - Spare, programmable potential-free and 24V digital switching inputs and outputs, 4 each
 - Spare analog data acquisition channels for 4 Pt 100 sensors and 4 voltage signals ± 10 V

INCLUDED ACCESSORIES :

Adjustable and removable shelves to accommodate various specimens.-2 nos.
O&M (Operation & Maintenance) manual.
Detailed Service manual.
Any special tools required for routine/ preventive & Breakdown maintenance.
All Relevant Software with manuals for control, operation and maintenance.
Necessary cables and connectors for interfacing with PC.
Chamber calibration certificate and detailed procedure for recommended routine calibration.

RECOMMENDED SPARES : For three years of troublefree operation.

OPERATING ENVIRONMENT 20 to 40 deg C at 20% to 80% RH in a non-AC environment.

However for set temperatures below -30 degC minor performance degradation may be accepted when operating environment is >35degC.

POWER : AC 400V 3-ph +/- 10% 50Hz

WARRANTY after commissioning:-

- On site, 1 year, comprehensive post-commissioning warranty and Performance guarantee
- Optional extended warranty support
- After sales support on AMC/ Call basis

GENERAL

- Vendor must have supplied and satisfactorily maintained for at least 2 years Identical or Similar system in India. Please provide a list of such installations along with contact persons for references.
- Prompt Local service support at Bangalore by engineers trained and certified by manufacturer is a must. Please provide the details of support staff and infrastructure. Also include a list of installations supported and references.