



Electronics Corporation of India Limited
 A Government of India Enterprise
CONTROL & AUTOMATION DIVISION-PURCHASE
 ECIL Post, Hyderabad-500 062.

ENQUIRY No. EC/PUR/CAD/	1907/120591
DATE :	2015.01.22
DUE DATE :	2015.02.16

e-mail:
 EXTRA COPY

Contact: D P RAO, SM

Dear Sir(s),

Kindly submit you quotation in a Sealed Envelope Superscribing Enquiry No. and Due Date for the supply of the Following items as per terms and conditions overleaf to PURCHASE MANAGER - CONTROL & AUTOMATION DIVISION ECIL, HYDERABAD-62. QUOTATIONS AGAINST EACH TENDER SHALL BE SENT IN SEPARATE ENVELOPE QUOTATIONS RECEIVED AFTER THE DUE DATE AND TENDERS SENT IN OPEN/UNSUPERSCRIBED ENVELOPE WILL BE REJECTED. PLEASE SEND REGRET LETTER, IF YOU ARE NOT ABLE TO QUOTE TO CONTINUE TO KEEP YOUR NAME IN OUR MAILING LIST.

IMPORTANT INSTRUCTIONS

Parties must give the following information otherwise offer may be rejected.

1. Unit Rate and Terms of price
2. Quantity discount if any
3. Rate of Excise Duty, Sales Tax if any
4. Firm Delivery schedule
5. Mode of despatch
6. Estimated Packing and Forwarding Charges
7. Validity of quotation
8. Terms of Payment
9. Sales Tax Registration Number/VAT and Service Tax Regn. No.
10. SSI/NSI Regn. No.

Sl.No.	Material Description and Specification	Estimated Requirement	
		Unit Code	Quantity
1	THE SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF HORIZONTAL THERMAL SHOCK CHAMBER ALONG WITH CHILLER AS PER ANNEXURE ENCLOSED.(7 PAGES).	Nos.	1
Special Notes. <ol style="list-style-type: none"> 1. Data sheet/Catalogues shall be enclosed to your offer. 2. A Certificate of Compliance shall be submitted along with the consignment. 3. Our Terms of Payment : 90% payment will be made within 60 days of receipt of material at ECIL, subject to acceptance. Balance 10% payment will be made within 30 days of acceptance. 4. If you are unable to quote, send regret letter positively by mail. Our Mail ID prasadaraom@ecil.co.in enable us to keep you in mailing list. 5. Please quote Terms of Price as Free Delivery to our Stores. 6. You should be profit making company in the last preceding 3 financial years (ending by 31st March) 7. You should be an ISO certified Company. 8. This is two part Tender Bid <ol style="list-style-type: none"> 1. Technical Bid & 2. Price Bid. 			

NOTE: 1. CERTIFICATE OF COMPLIANCE/BATCH CERTIFICATE/CCOE/CMRI/ATX/ WARRANTY TEST CERTIFICATE SHALL BE FURNISHED. PLEASE CONFIRM.
 2. DATA SHEETS (CATALOGUES) SHALL BE SUPPLIED WITH THE QUOTATION.
 3. IF THE MATERIAL IS COVERED UNDER DGS & D RATE CONTRACT. PLEASE QUOTE THE RATES ACCORDINGLY.
 4. IF THE MATERIAL IS COVERED UNDER EXCISE, FURNISH EXCISE TARIFF NUMBER AND CLASSIFICATION.

Yours faithfully,
 For Electronics Corporation of India Limited

(Signature)
 22/1/15
 D. P. RAO
 PURCHASE MANAGER
 CONTROL & AUTOMATION DIVISION
 ECIL, HYD-62

ANNEXURE TO THERMAL SHOCK CHAMBER INDENT No. 120591 dated 26-12-2014

SCOPE OF WORK:

The Supply, Installation, testing and commissioning of Horizontal Thermal Shock Chamber along with Chiller as per the following specifications at ECIL, Hyderabad. The supplier must critically examine the detailed specification provided, comply with those and supply in accordance. The proposal shall be accompanied by a detailed compliance statement in the same order with substantial proof of evidence like product catalogues, technical drawing, references etc.,

SPECIFICATIONS / REQUIREMENTS:

1. A Single Horizontal, Air to Air type Thermal Shock Chamber with two test zones, hot and cold. The chamber should be designed to use as two zones Thermal Shock chambers as desired. The zones shall operate in the following temperature range.
 - a. Hot Zone : Ambient to +180°C
 - b. Cold Zone : -70°C to +180°C
2. The chamber shall be provided with two doors of size 1750 mm x 1000 mm approx., one per each zone. It shall be possible to operate Hot and Cold zones independently, one at a time or simultaneously. The doors are to be provided with double silicon gasket to ensure vapor tight seal.
3. Average Temperature Rate in Cold Zone
Cooling Down & Heating Up : $\geq 5.0^{\circ}\text{C}/\text{min}$ with 150 kg Aluminum Load or 300 kg (SS) with
rate between 100°C to -40°C 1 KW Live Load
4. Temperature Accuracy : $\pm 0.5^{\circ}\text{C}$
5. Relative Humidity in Hot Zone : 10-98% RH limited by 7°C minimum dew point and +85°C maximum dry bulb.
It shall be possible to achieve 95% RH at 27°C, 95% RH at 40°C and 14% RH at 71°C.
6. Humidity Accuracy in Hot Zone : $\pm 4\%$ with empty chamber after stabilization
7. Dry Air purging : The chamber shall be designed with dry air purging for removing the moisture in the chamber.
8. Product Temperature control : The chamber shall have a provision to either control air temperature or product temperature.
9. Internal Dimensions of each Zone : 1750 mm (W) x 1100 mm (D) x 1000 mm (H).
Overall height of the chamber shall not exceed 2500 mm.
10. Weight of Test Specimen : 150 Kg
11. Basket Internal Dimensions : 1400 mm (W) x 850 mm (D) x 700 mm (H).
Provision shall be made to firmly mount/hold the test specimens of different dimensions.
12. Basket Transfer Speed : The basket shall move from one zone to another zone (cold to hot and vice versa) within 30 seconds and shall be Programmable. Maximum transfer time that can be programmed to be specified.
13. Basket Movement : Electrically driven basket shall move the test specimen between the zones.
14. Viewing Window : 430 mm x 580 mm size fog free heated multilayered toughened glass window shall be provided for hot and cold zones.
15. Illumination Arrangement : Shall be provided to see the working area.
16. Port Hole : Two numbers of 150 mm dia. port holes (one on each zone) with plug shall be provided.

17. Programming mode : Three modes of programming; Normal TS mode, Energy saving mode and Optimized mode
18. Temperature / Humidity Measurement : Standard sensor for air temperature measurement, free sensor for product temperature control and measurement. Electronic humidity sensor for humidity measurement shall be provided.
19. Calibration : Shall be possible to tune and correct the calibration values in calibration table
20. Chamber Interior : Shall be non-magnetic low nickel content SS 300 series.
21. Chamber Exterior : Shall be welded steel framework construction with anti-corrosive and standard painting.
22. The wall thickness shall be 5 inches or suitable Polyurethane Foam and Glass Wool sandwiched having insulating K-factor 0.11, so that in long duration of low temperature test there shall not be any condensation on outer / inner walls.
23. Air circulation inside the chamber shall be of duct type (both top & bottom) for maintaining uniform temperature in complete working area.
24. The temperature and relative humidity of the chamber shall be monitored by sensing devices suitably located in the working space. The conditions prevailing throughout the working space shall be uniform and shall be as similar as possible to those prevailing in the immediate vicinity of sensing devices.
25. Provision shall be made for automatic drain-out of condensed water.
26. The noise level at a distance of 1 meter from chamber shall not exceed 80 dBA.
27. All safety devices like; over current protection, over temperature, over load, over pressure & under pressure safety devices to be provided for refrigeration compressor.
28. Free accessibility to refrigeration and electrical systems for maintenance works shall be provided.
29. In addition to regular thermal shock tests, the chamber shall also fulfill the test requirements of the standards such as MIL STD 810 G, IEC, IS, DEF and thermal shock tests as per JSS 55555, revision no: 3.
30. The operating supply voltage shall be 415 Volts \pm 10%, 3 Phase, 50 Hz.

SAFETY FEATURES & INTERLOCKS:

1. Mains (Electrical Power) disconnect switch shall be provided on the chamber.
2. Chamber door/ Transfer stop interlock, Transfer/ Fan stop interlock, Circulator interlock for Heaters and Refrigeration shall be provided.
3. High temperature limit system shall be provided on hot and cold zone.
4. Oil pressure switches shall be provided.
5. Discharge/Suction pressure transducers for monitoring pressures shall be provided.
6. Compressor discharge/suction temperature monitoring shall be provided.
7. Compressors shall be equipped with in-built overload protection.
8. Controller shall be equipped with built-in feature for automatic defrost of cold chamber.
9. Chamber shall be provided with independent over & under temperature protection with audio alarm.
10. Safety relief valves on refrigeration system shall be provided.
11. All the fans shall be provided with guards.

PROGRAMMABLE CONTROLLER:

The Programmable Controller shall have the following features.

1. A minimum of 12 inch color touch screen controller with Windows based menu navigation.
2. Display of real time, historical trend graphs, actual values, set points, program start and stop time, program elapsed time, program step etc.
3. RS 232, USB and Ethernet Interfaces with necessary software for remote control and programming via PC.
4. Operating Modes: Manual and Programmable.
5. Capable to store up to a minimum 100 programs. The number of steps in each program shall be minimum 500 and facility for looping (nesting) in the program.
6. Data Storage Capacity: 5 years of test data.
7. Facility for delayed start / stop and starting from required step shall be available.
8. When Mains Supply fails, the chamber shall start from the point where it stopped, after restoration of power supply.
9. Break down message shall be displayed on the controller.
10. The controller shall have minimum 2 GB or more in-built test data storage capacity and shall have provision to take print out.
11. The controller shall have provision to save test profiles. It shall be possible to execute the test(s) as per saved profiles.
12. The monitored parameters (temperature, humidity etc.,) shall be saved in the host PC. It shall be possible to export these parameters to other formats (.csv, .txt, etc.,).
13. Along with Controller, HP Color LaserJet Pro MFP M476dw (CF387A) Printer, 1 kVA UPS with 1 hr backup, PC (Host PC) with licensed soft copies of OS, MS-Office, Antivirus, Controller Software, Data Logging Software, is to be supplied.
14. The Host PC for control software shall be of HP make, 4th Gen Intel Core i5 OR higher processor based equipped with motherboard supporting RAID 1 (mirroring) facility (no hot swap) and two nos. of 1 Terabyte HDDs (to be configured in RAID 1 mode), 2 x 4 GB DDR3 1600 RAM, industrial grade SMPS, one no. of USB 3.0 interface portable USB Powered external HDD of 1 Terabyte capacity (Seagate or WD make) and one USB 2.0 based external DVD+/- RW drive shall also be supplied for taking backups. Monitor shall be of 23 inch Full HD LED IPS type with capacitive multi touch screen with greater than 160 deg Vertical and Horizontal viewing angles. The Host PC shall be based on Windows 7 Professional version or higher OS with license and also MS-Office latest professional version with license (standalone). The host PC shall support USB 3.0 and HDMI ports.

OTHER TECHNICAL FEATURES:

1. The main cooling shall be of water cooled cascade refrigeration system.
2. Oil filled refrigeration gauges are to be provided for monitoring the suction and discharge pressures of each compressor.
3. When the compressors are tripped off due to high pressure or fluctuations in the electrical supply, they shall be switched on automatically after restoration of pressure / power.
4. The Temperature sensors shall be of RTD / Thermo couple type.
5. The Humidity sensor shall be maintenance free electronic sensor.
6. The refrigeration gases shall be 'O' zone friendly.
7. A 20 meter long flexible power cable to be provided for extending power from AC mains to chamber.
8. The supplier shall specify the safety features provided to the chamber.

9. Supplier may specify extra feature / specifications if any for the chamber being offered.

CHILLER:

1. The Chiller being supplied shall be from a reputed local source and shall be sufficient to provide the required cooling rate.
2. The Chiller shall be provided with heavy duty Caster wheels for easy movement and shall have a minimum of 1000 liters capacity inbuilt water tank with cooling water circulation pump.
3. The Chiller shall be provided with temperature controller cum indicator.
4. The Chiller shall be capable of maintaining the water temperature at 18°C or the specified inlet water temperature of the chamber whichever is lower while running the chamber.
5. Detailed technical information specifying power requirements, voltage, capacity and safety features shall be provided along with quotation.
6. A 20 meter long flexible cable to be provided for extending power from AC mains to chiller.

GENERAL REQUIREMENTS:

1. Supplier shall supply, install, commission the thermal shock chamber at ECIL, Hyderabad and shall conduct Acceptance Tests as per Factory Acceptance Test (FAT) document.
2. Supplier to provide Foundation / Installation details / drawings two months in advance for site preparation.
3. Two sets of Hard Copies of Operation, Installation and Maintenance Manuals, Software Configuration, Circuit Diagrams, Wiring Diagrams & Troubleshooting in English and one soft copy also shall be provided.
4. Spare Part List with ordering information shall be provided.
5. Essential Spares for trouble – free operation of the system for three years to be supplied along with the chamber.
6. Supplier shall provide free software updates for minimum five years.
7. Three years comprehensive onsite warranty shall be provided for all the items from the date of acceptance. None of the sub components of the equipment shall be excluded from warranty. If the warranty service entails taking the equipment to other place, the costs associated with such movements shall be borne by the supplier. The turnaround time for warranty service shall be less than two days for minor repairs & general service, less than ten days for major part replacements. Beyond permitted down time, warranty will be extended by twice the cumulative excess down time. Supplier shall replenish spares at the end of warranty period by repair or replacement.
8. Chiller, UPS, Host PC and Printer shall be supplied from a reputed Indian source and are to be quoted in Indian Rupees. A separate purchase order will be placed for the items supplied from local sources.
9. The supplier shall provide assurance on product support for a minimum period of FIFTEEN years.
10. The successful bidder shall submit FAT document for ECIL's approval. The FAT document shall include all the tender requirements and demonstrate the capability of the thermal shock chamber for the complied specifications and safety interlocks.
11. The FAT invitation letter shall accompany test results and graphs for all tests carried out by OEM as per the approved FAT document.
12. The pre-dispatch inspection shall be conducted by ECIL Engineers at OEM premises before dispatch as per the FAT document. Clearance in FAT does not relieve supplier's responsibility to demonstrate proper operation at ECIL, Hyderabad.

13. The thermal shock chamber and the auxiliary systems shall be installed, commissioned and demonstrated at ECIL, Hyderabad by supplier.
14. Supplier shall have supplied at least one system with the same or better specifications during the past three years to Indian customers. Copies of the purchase orders with price information shall be enclosed.
15. The list of your customers in India using similar capacity systems and their addresses with telephone numbers, the contact persons and their e-mail details shall be provided.
16. Foreign Based OEM having well established Service Centers in India only can bid. The local agency shall submit authorization letter issued by OEM.
17. Supplier shall provide one week Operation and Maintenance training for our Engineers, free of cost at ECIL, Hyderabad.
18. Calibration Certificate issued by NABL Accredited Laboratory or Equivalent with test results shall be provided along with delivery of the thermal shock chamber.
19. Preventive maintenance shall be carried out once a month during warranty period. Failure to do so will result in extension of warranty period by twice the amount of delay in preventive maintenance.
20. Supplier shall specify the country of manufacture for each of the equipment/sub systems, as well as country of integration of the thermal shock chamber.
21. **Utility requirements:** Supplier shall provide details of the utilities, like power requirements, place requirements etc required for the operation of the thermal shock chamber.
22. Technical catalogues giving detailed specifications, photographs, drawings and dimensions up to subsystem level shall be made available along with quotation for technical evaluation of the Bid. Deviations if any in the specifications shall be clearly mentioned and shall be supported along with technical literature.
23. The firm will be responsible to provide standard test loads to carry out acceptance tests as per FAT document at factory and at ECIL, Hyderabad.
24. **Technical evaluation:** Technical committee / evaluation based on documents provided in offer/ presentation discussions with supplier/ track record/ optionally (as determined by TEC) shall be carried out. Arrange for physical inspection of installations in India of same make equipment of similar capacity may be taken up by TEC for evaluation.
25. The supplier shall quote for any other items including consumables, if any required for operation of the thermal shock chamber.

TERMS AND CONDITIONS:

1. The bid shall be in TWO parts. i.e.,
 - A) Technical Bid - shall contain
 - i) Technical details
 - ii) Un-priced Bid with complete Bill of Material
 - iii) Compliance statement on the tender technical specification/General Requirements/Terms and Conditions point wise
 - iv) Earnest Money Deposit Cheque / Bank Guarantee
 - v) Details of similar orders executed in the last 3 years
 - vi) Profit & Loss account and balance sheet statements of the last 3 years.
 - B) Price Bid - shall contain Price with complete BOM

2. The supplier shall submit offer in one common sealed cover containing two parts in separate sealed covers. First cover shall contain Technical Bid and second cover shall contain Price Bid. Quotes not received in sealed covers and FAX/Mail quotes are not acceptable. Also, tenders received after due date will not be considered.
3. Supplier shall provide point by point Technical Compliance Matrix specifying compliance supported by Technical Literature. Supplier to furnish these documents along with the Technical bid, failing which the technical bid would be invalid.
4. **I&C Charges:** Charges for Installation and Commissioning shall be quoted separately.
5. **Duties, taxes & levies, freight and insurance** shall be specified separately.
6. The **offer shall be validity for 120 days** from the date of tender opening.
7. The supplier shall submit quotation in separate cover for three years Annual Maintenance Contract from the date of expiry of warranty period for all the items supplied, in Indian Rupees.
8. The original technical bid along with compliance statement supported by product data sheets and test reports of similar equipment executed, shall be submitted. The detailed point to point compliance statement to be enclosed along with the quote. Offer is liable to be rejected if compliance statement is vague (replies like "Yes", "Meets"), unsubstantiated or incomplete. The technical compliance statement and supporting documents shall match with each other. The technical bid / compliance statement shall be signed by Original Equipment Manufacturer.
9. **Earnest Money Deposit:** EMD for an amount of Rs7,50,000/- (Rupees Seven Lakhs and Fifty Thousand only) in the form of **crossed Demand Draft or Bank Guarantee drawn on any Scheduled Bank in India** in favour of 'Electronics Corporation of India Limited, Hyderabad' payable at Hyderabad shall be submitted along with the technical bid. The tenders not accompanied by EMD will be summarily rejected. The EMD amount will be returned to the unsuccessful bidders after completion of selection process.
10. **Security Deposit:** The Security Deposit in the form of bank guarantee valid up to agreed delivery date plus 3 months need to be submitted within one week of receipt of purchase order for 10% of order value. This is an essential condition and exemption will not be given. Security Deposit shall be forfeited in case of non-compliance to purchase order terms and conditions.
11. **Delivery Schedule:** Material is to be supplied within 8 months from the date of release of purchase order.
12. **Payment Terms:** 80% payment within 90 days from the date of shipment against submission of invoice along with related documents and Bank Guarantee for equal amount valid till the equipment is commissioned and satisfactory performance demonstrated for a period of 3 months. Balance 20% within 60 days after successful completion of Installation & Commissioning and training along with I&C Charges, against PBG for 10% of the Order Value.
13. **PBG for 10%** of order value shall be submitted from any Bank, Branch of Indian Origin only, covering the warranty period of 36 months with a grace period of six months from the date of acceptance.
14. **Warranty:** On-Site warranty shall be provided for a period of 36 months from the date of acceptance at ECIL, Hyderabad.
15. **Confidentiality and Non-Disclosure Agreement** shall be provided on Rs.100/- Non-Judicial Stamp Paper as per the format provided by ECIL and signed by supplier.
16. **Liquidated Damages / Penalty Clause:** In the event of any delay in supply beyond the stipulated delivery schedule, ECIL, at their option, LD will be recovered @ ½% per week on the value of undelivered goods, subject to a maximum 10% of the total order value. Inspection offer / call letter will be treated as the basis for imposition of LD. Any delay in deputing our engineer for FAT will be to ECIL account. LD will be levied from the date of non conformity of requirements observed if any during FAT.

17. **Risk Purchase Clause:** In the event of any failure of the seller to comply with the purchase order terms, the buyer has a right to cancel the order and proceed with an alternate source. In the event of proceeding with such an alternate source, the default Supplier shall be liable to bear the extra cost which may incurred by the buyer.
18. **Order Cancellation Clause:** Purchase Order is liable to be cancelled if there is any non-compliance, false statements, dissatisfactory progress and quality related issues with respect to technical specifications and other requirements as called up in tender enquiry / purchase order.
19. Bidders should provide details of litigations if any with Govt. Organisations and Public Sector Undertakings during the past eight years.
20. **Arbitration Clause:** All disputes or differences whatsoever arising between two parties out of relating to the construction meaning and operation of effect of this contract or the breach of them shall be settled by arbitration in accordance with the rules of arbitration of the Indian Council of Arbitration at Hyderabad/Secunderabad jurisdiction.