



सीएसआईआर-केंद्रीय खाद्य प्रौद्योगिक अनुसंधान संस्थान  
**CSIR- CENTRAL FOOD TECHNOLOGICAL RESEARCH INSTITUTE**  
मैसूरु / MYSURU-570 020, भारत / INDIA  
(Constituent Laboratory of CSIR, New Delhi (Ministry of Science & Technology)  
An ISO 9001:2008, ISO 14001:2004 & ISO 17025:2005, NABL  
Accredited Laboratory



सं. /No. CFTRI /74166/2019

दिनांक / Date: 14<sup>th</sup> June 2019

निविदा आमंत्रण सूचना  
**NOTICE INVITING TENDER**

क्रम सं. Sl. No.	निविदा संदर्भ Tender Reference	विवरण / Description
1	A3/74166/2019	Supply, Installation, Commissioning of Temperature & Humidity Controller (Walk-in Humidity (Stability) Chamber with ECOtronic-based)

1. Director, CSIR-CFTRI, Mysuru invites tenders for supply, installation and satisfactory commissioning of Supply, Installation, Commissioning of Temperature & Humidity Controller (Walk-in Humidity (Stability) Chamber with ECOtronic-based)
2. Last date for submission of Tender is 2.00 P.M. (IST) on 01/July/2019 on line in etender.gov.in.
3. Bid Security(EMD) NIL
4. Technical Bid Opening on line in etender portal at 2.30P.M (IST) on 02/July/2019

हस्ता./Sd/-

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### CRITICAL DATE SHEET

<b>Sl. No</b>	<b>Stage</b>	<b>Date &amp; Time</b>
1.	Issue Date & Time	14/June/2019 @ 17.30PM
2.	Last Date & time for receipt of queries	19/June/2019 @17.30PM
3.	Bid Submission Start Date & time	20/June/2019 @10.00AM
4.	Bid Submission End Date & Time	<b>01/July/2019 @ 14.00PM</b>
5.	Bid Opening (Technical ) Date & Time	<b>02/July/2019 @ 14.30PM</b>

## Specification and Allied Technical details

A3/74166/2019-20

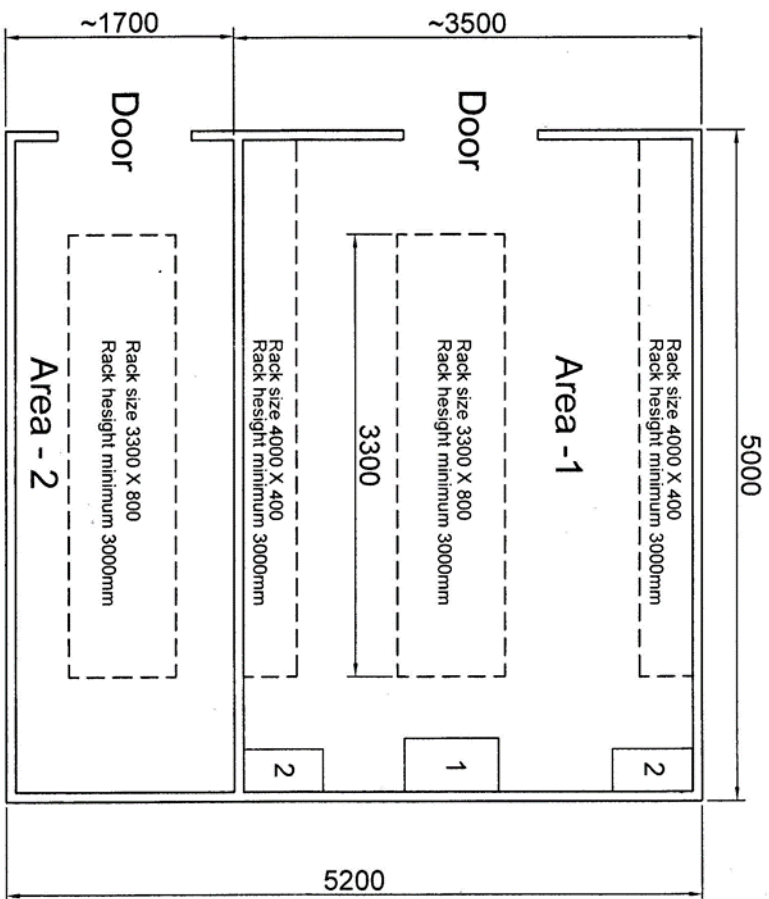
### SPECIFICATIONS FOR Temperature and Humidity Controller (Walk-in Humidity Chamber)

#### **Technical Specification of Temperature & Humidity Controller (Walk-In Humidity (Stability) Chamber with ECOtronic-based)**

<b>Range / Accuracy / Uniformity</b>	Temperature Range: 20°C to 60°C Temperature Accuracy: $\pm 0.2^\circ\text{C}$ Temperature Uniformity: $\pm 1^\circ\text{C}$ Humidity Range: 40% RH to 95% RH Humidity Accuracy: $\pm 2\%$ RH Humidity Uniformity: $\pm 3\%$ RH
<b>Construction</b>	Doubled walled, PUF insulated, leak-proof modular panels with cam & lock arrangement for easy assembly at on-site. Interior & Exterior to be made of SS- 304. The thickness of PUF is to be minimum 80 mm. Walking area is to be covered with good carpet to avoid slippage.
<b>Racks &amp; Trays</b>	Stainless Steel Trays for sample loading is to be provided along with the unit. The trays are mounted on Racks that provide support to the trays.
<b>Lighting</b>	In the aisle area inside the chamber, lights to be provided for illumination.
<b>Chamber Operations</b>	Chamber Operations is to be based on ECOtronic system incorporating the principles of Dew Point Control as per the Psychrometric Chart thereby leading to reduction in Power Consumption by 70% & Water Consumption by 90%
<b>Conditioning Unit</b>	Air Circulation should be through tangential blowers, dry heater, humidity system, evaporation (cooling) coil, standby cooling coil.
<b>ICH Guidelines / Applications</b>	Fully suitable to carry out stability studies for conditions such as: 25°C / 60% RH, 30°C / 65% RH, 30°C / 75%RH, 40°C / 75% RH Also to meet low humidity ICH conditions laid out for food products such as: 25°C / 40% RH 30°C / 35% RH 30°C / 65%RH 40°C / Not more than 25% RH Applications include shelf life testing, stability testing, expiration date testing, accelerated aging and testing for food products, packing, life science and research. Validation and testing is to be done
<b>Door</b>	Double walled insulated door is to be provided with an observation window of minimum 300 mm x 300 mm having minimum 2 vacuum glasses. The door should have lock & key

	to restrict unauthorized access.
<b>DQ, IQ, OQ, PQ</b>	<p>Unit should meet the regulatory requirements and DQ, IQ, OQ, PQ protocols to be provided.</p> <p>Certificates of critical components to be provided along with documentation.</p> <p>Documentation such as Calibration Certificates, Operations &amp; Maintenance Manuals, GA &amp; Electrical Drawings, and Material Test Certificates should be provided.</p> <p>Guidance for SOP's like Operational Maintenance, Preventive Maintenance and Calibration to be given.</p> <p>Adequate training of the chamber &amp; software operation is to be given.</p>
<b>Calibration and Validation</b>	Calibration of the chamber is to be provided with traceability of the standard used. Validation of the chamber i.e. recording the temperature and humidity at different places in the chamber confirming uniform temperature and humidity throughout the chamber is to be done.
<b>Heating System</b>	Long lasting U-shaped Stainless Steel tubular heaters are to be used as a heating element. These heaters should be provided with fins for better heat transfer.
<b>Cooling System</b>	System should be CFC free cooling and it should be consisting of hermetically sealed compressor coupled with evaporation coil and fan-cooled condenser to provide efficient cooling in the chamber. A fully functional cooling system should be provided as standby. Temperature should not overshoots by more than 2°C
<b>Humidity System</b>	<p>Humidity is primarily controlled through the principles of Dew Point as per the Psychrometric Chart.</p> <p>The Humidifier should consists of minimum 2 independent water tanks - one works as a primary and the other as standby. Upon detection of fault, system automatically switches over to the other humidifier &amp; raises an alarm.</p>
<b>Temperature and Humidity Sensor</b>	<p>High-Quality Temperature and Humidity combo sensor with universal 4-20mA output.</p> <p>Temperature is to be displayed in °C with 0.1°C resolution.</p> <p>Humidity is to be displayed in %RH with 0.1%RH resolution.</p>
<b>Temperature &amp; Humidity Scanner</b>	Temperature and humidity scanner should have minimum of 8 temperature and 8 humidity probes (including 1 no. Controlling Sensor & 1 no. Standby Controlling Sensor) is to be provided to monitor various parts of the equipment.
<b>Air Circulation</b>	Top to bottom air circulation is minimum, air circulation is to be maintain uniformity throughout the equipment.
<b>Controlling System</b>	The controlling system is to be fully automatic control system with data storage capacity.
<b>Display</b>	<p>The Display or HMI (Human Machine Interface) is to be of minimum 4" Colour Touch Screen display. It should shows values of temperature and humidity of all probes. additional features like:</p> <ul style="list-style-type: none"> <li>• Display of Alarms &amp; its history</li> <li>• Controls access to door opening. User needs to give password to unlock the door from outside. Control access be provided for minimum six users with tracking facility.</li> </ul>
<b>PC</b>	<b>Ethernet-based Communication based on the TCP/IP</b>

<b>Communication with Software</b>	<b>Protocol over the Local Area Network (LAN)</b> Software for controlling, recording, Ethernet communication with PLC, alarm acknowledgement, database protection and single software should be suitable for minimum 8 equipments/units. Also it should communicate to other safety and documentation systems along with real time window.
<b>Safety</b>	Temperature Safety, Humidity Safety, water level safety, Human safety, Component Safety, Sensor Safety
Alarm Generation	Audio and visual alarms to be generated for deviations
<b>Alarm Transmission</b>	Alarms can be transmitted to different locations and provision for Mobile Alert System
<b>Others</b>	UPS from standard suppliers like APC/Emerson/ABB/Epton for best performance of the unit.



**Note:** Height of chamber to be taken suitable based on the available roof height of 4 m  
 Ducting nos. and capacity to be decided according to chamber volume  
 All dimensions are in mm

- 1 - Centre Ducting
- 2 - Side Ducting

**WALKIN HUMIDITY CHAMBER**

## INSTRUCTIONS TO BIDDERS

1. The Instructions, Terms & Conditions, General Conditions of Contract (GCC), Special Conditions of Contract (SCC), Annexures and Formats hosted in our website [www.cftri.com](http://www.cftri.com) [Path: Home page → Tenders → Standard Tender Document (Scrolling Text)] constitutes integral part of this tender.
2. Bidders should submit their financial bid in the format provided (Bill of Quantity) and same has to be uploaded in the above [etender.gov.in](http://etender.gov.in). It is mandatory for all the bidders to upload BOQ Format towards submission of their Financial Bid. No changes or modification to the given format is acceptable. Bidders are required to go through the instructions carefully before filling the BOQ.
3. Bid Security (EMD) is not applicable for this tender.
4. Performance Security is not applicable for this tender.
5. Integrity Pact is not applicable for this tender.
6. **Warranty: One Year** (One Year) from the date of Installation and Commissioning and acceptance.
7. **Delivery Period:** Delivery should be affected within 3-4 weeks from the date of issue of Purchase Order.
8. **Terms of Payment:** The method and conditions of payment to be made to the supplier under this Contract shall be as follows:
  - A. **Payment for Goods supplied from Abroad:**

Payment of foreign currency portion shall be made in ( ) [currency of the Contract Price] in the following manner:

**On Shipment:** 100 % (Hundred Percent) of the Contract Price of the Goods shipped shall be paid through Cash Against Documents/Wire Transfer/Irrevocable letter of opened in favor of the Supplier upon submission of documents specified in the GCC/SCC.

The L/C will be confirmed at the suppliers cost, if requested specifically by the supplier. All bank charges abroad shall be to the account of the beneficiary i.e. supplier and all bank charges in India shall be to the account of the opener i.e. purchaser. If L/C is requested to be extended/reinstated for reasons not attributable to the purchaser, the charges thereof would be to the suppliers' account. Payment of local currency portion shall be made in Indian Rupees within thirty (30) days of presentation of claim supported by a certificate from the Purchaser declaring that the Goods have been delivered and that all other contracted Services have been performed. The LC for 100% value of the contract shall be established after deducting the agency commission payable if any, to the Indian agent from the FOB/FCA value.

**B. Payment for Goods and Services supplied from India:**

Payment for Goods and Services supplied from within India shall be made in Indian Rupees, [INR] as follows:

**On Delivery, Installation, training and Acceptance:** 100 % (Hundred Percent) of the Contract Price shall be paid on receipt of the Goods, upon submission of the documents specified in GCC/SCC and the acceptance certificate issued by the Purchaser.

