Open Tender Notification for the procurement of "Humidity-controlled Arabidopsis Growth Chambers" at the Indian Institute of Science, Bangalore

(Last date of submission of tenders: 12-April-2021)

GTE Approval No. IISc-GTE-2021-014

Date: 27.03.2021

Dear Sir/Madam:

Please send your quotation valid for 90 days for the supply of equipment described below. Your quotation should clearly indicate the terms and conditions of the quotations, delivery, delivery schedule, entry tax, payment terms, warranty coverage etc. The tender should be submitted in two separate sealed envelopes – one containing the "Technical bid" and other containing the "Commercial bid", both of which should be duly signed and must reach the undersigned on or before 17:00 hours 10-April-2021.

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Humidity-controlled Arabidopsis Growth Chambers

Specifications:

Number: Three

(A) PAR (Photosynthetic Active Radiation) Light Intensity

1. Minimum light intensity 300 micromoles or more measured @ 6inch from light bank.

2. Should be equipped with THREE light canopies in the same intensity, horizontally placed with cool white LED light array panel fixed below barriered metal plate.

3. Dimmable light in 1 % increment. Real time clock time-controlled lights.

4. PAR Light spectra of LED to cover range 430 to 780nm. Light spectra to be provided. Fixture efficiency of 2.5umole/J.

(B) Temperature as below or better

1. 2 to 40^0C (±0.5^0C) all lights off and 4-40^0C (±0.5^0C) all lights ON. High and Low alarm audio and visual. Temp should be stable (±0.5^0C) on complete temp range regardless of outside temperatures. Setting accuracy 0.1C

2. All power to shut down when alarm activates & chamber restarts when temp is normal.

3. Shelf contained air cooled condensing unit with hot gas bypass system to be placed on TOP of the chamber for ease of service.

4. Continuous running compressor with solenoid valve, ceiling mounted cooling coil, Adjustable expansion valve. 1/3hp compressor for optimum performance and power consumption. Please specify the power consumption of unit (without humidity and dehumidify should be below 2 KW) and current consumption on START and RUNNING for complete system should be mentioned in BID.

5. Compressor over temperature and over pressure protection, compressor delay start, temperature deviation alarm. Redundant Temp sensor should cut off for safety.

(C) Humidity

40 - 85% humidity with dehumidification pan type humidification system.

(D) Work Area

1. 1.8m^2 on Three shelf, Minimum plant growth height 36 cm between each shelf. Shelves should be modular in design where one should be able to take extra shelves out and should be able to insert them keeping the growth height of Arabidopsis as well as other plant species.

2. White epoxy coted three steel wire shelves, vertically adjustable on ½ inches.

3. System should have featured also: field upgrade with 300 umole shelve, to make it 5 TIER systems with 300 umole lamp bank.

(E) Body Structure

The property of material or insulated cover should minimize the heat and cold loss or intake from inside to outside and the other way around.

1. Interior 26-gauge smooth galvanized white side wall and top reinforced with 24-gauge backer plates or better.

2. Interior floor 24-gauge 304-4 SS, Exterior 24 gauge galvanized white or better gauge.

3. Overall wall thickness 2inches, 1¼ inches diameter access port on right hand wall.

4. Overall wall thickness 2 inches, 1¼ inches diameter access port on right hand wall.

5. Floor equipped with floor drain and hose assembly, NSF Compliant Seam design, CFC. Free insulation, casters and adjustable leveling legs

6. One door with full access magnetic perimeter gasket and locking system with key of ~ 146x93 cm allowing full access to chamber interior.

7. When closed, the door should be kept against doorframe tight enough via magnetic gasket seal so that internal moisture and cool air are not leaked. Door should be front facing of the chamber.

8. Outer dimension should not exceed W 105cm X D 90cm X H 200cm or compact to fit in lab space.

Interior volume should be ~ **1100 liter ± 50 liters**

9. One power point inside chamber.

10.Lockable castors should enable the chamber to be moved. The bidder must ensure in the design of chamber itself that shelves steel should withstand the weight of soil, water and plant biomass.

(F) Controller

1. Solid state microcontroller architecture, single board electronic controller, run manual, diurnal, 24 hrs ramping mode and non-ramping mode and elapsed time.

2. multiple program link to simulate natural condition, dual experiment protection temperature limit shutdown.

3. Two calibration offset light on and light off, light lifetime alarm and reset.

4. RTD temperature sensor, visible and audible alarm, additional ambient temperature sensor on Control Panel for monitoring, 10 key Industrial keypad with VFD display and LED indicator

5. Four levels password protection, diagnostic menu, view set point, process value, alarm, alarm setting.

6. Should be equipped with delay start timer, power fail event logging, 90+ program storage faciality.

7. Facility to store the temperature, humidity for at least one week.

Training and Warranty

1. The bidder is completely responsible for installing the plant chambers and making them functional once they arrive at IISC, Bangalore. The institute will provide appropriate water connection along with proper power point plugs.
2. Minimum 2 years complete system warranty. 2 years of AMC after completion of warranty period. Online service support for 5 years thereafter.

The above-mentioned technical specifications are highly desirable. However, lower technical specifications may be considered if the above-mentioned specifications are found to be

unsuitable in financial terms. The Institute reserves the right to go for lower specifications taking into considerations its financial constraints and technical preferences.

Terms and Conditions

1. The quotations should be submitted in two bids system; i.e., Technical bid, and Commercial bid.

a) The technical bid must include all details of technical specifications of the instrument along with commercial terms and conditions masking only the price component. Bill of materials, brochures, technical datasheets, and any other document may be enclosed to help the evaluation of the technical bid. Please also include warranty terms and any other information on upgradation terms in the technical bid.

b) The commercial bid must include the price of the instrument in Indian/Foreign currency indicating break up of:

I. For goods: i. Price (CIF, Bangalore). Applicable Custom Duty will be borne by the Institute.
ii. Installation, commissioning and training charges, including any incidental expenses, if any
iii. Agency commission charges, if any
iv. Provide certificates for country origin of manufacturing for each line item

II. Price of every line item in the commercial bid should be quoted along with the total quoted price for the instrument to be operational (fixed and ready to use) in our facility

c) Both the Technical and Commercial bid should be put in separate sealed envelopes and put together in another cover stating “Humidity-controlled Arabidopsis Growth Chambers” and should reach us on or before 17:00 hours 10-April-2021.

2. The vendor should have a good track record of having previously supplied Arabidopsis Growth Chambers (at least two) in IISC, Bangalore (please furnish details).

3. The vendor should have qualified technical service personnel based in South India capable of servicing the equipment.
4. The payment will be through a letter of credit.
5. The lead time for the delivery of the equipment should not be more than three months from the date of receipt of purchase order or two months from the date of receipt of Letter of Credit details (whichever is earlier).
6. The validity period of the quotation should be 90 days.
7. Import code of the items should be indicated.
8. If the goods are found to be defective, they have to be replaced or rectified at the cost of the supplier within 30 days from the date of receipt of written communication from us. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.
9. The purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time period to award of construct without thereby incurring any liability of the affected bidder or bidders.
10. All bidders are required to submit proper catalogue, technical literature of sensor being used for temp and RH, make of compressor. COPY paste of technical specification on catalogue will be rejected.
11. Vendors should be registered with PF, ESI, GST, MSME and other govt establishment as per Govt rules and regulation and Industrial workplace safety regulation. Copy of the same should be attached with tender.

Additional terms

1. An appropriate Servo stabilizer should be included in the final price for each chamber and price must be included in the final quote.
2. A branded Light meter to check the intensity of light should be provided.
3. Extra two shelves (as it is in the original plant chamber unit and detailed in section **A**) with fitted LED light should be provided to facilitate various type of plant growth.