

**Open Tender notification for the procurement of Plant Growth Chambers with controlled
light (LED) and temperature**

(TENDER FROM GLOBAL VENDORS)

GTE Approval No. IISc-GTE-2023-280

(Last date of submission of tenders: December 07, 2023)

Date: November 07, 2023

To Whom It May Concern

This is to seek quotations valid for 120 days for the supply of *Plant Growth Chambers with controlled light (LED) and temperature* as per the specifications described below. A quotation should clearly indicate the terms and conditions of delivery, delivery schedule, applicable taxes, 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, 07-December-2023.

The Chair

Department of Microbiology and Cell Biology,

Division of Biological Sciences,

Indian Institute of Science,

Bangalore-560012

Karnataka, India

Number of equipment: Two

S No.	Technical Specification chamber – LED light-controlled Plant Growth Chamber
1	LED light four tier/shelves properly spaced, installed horizontally (on top) for uniform light intensity throughout the shelf (LED tubes or sidewise vertical installation is not accepted). The LED light should be broad spectrum, energy saving LED spectra with information available on the website of manufacturer/ OEM website link to be provided for verification.
2	The light intensity should be programmable from 10 to 100% dimmable through only the controller. The light intensity should be programmable to a fluence rate of 400 $\mu\text{mol m}^{-2} \text{s}^{-1}$ (without other devices added for dimming) or higher for each tier light measured at 6" from the lamps bank. Light intensity distribution should be uniform over the entire shelf for optimal plant growth on every part of the shelf (and for all the shelves).
3	Temperature should be adjustable 7 to 44°C with lights ON or higher range ($\pm 0.5^\circ\text{C}$ or with better temperature stability at all ranges).
4	Temperature safety alarm, the chamber should turn off by the controller and restart when the temp. returns to normal. The system should restart automatically when the internal temp. is normal.
5	Should have a specifically designed air circulation inside the chamber, adjustable air diffuser conditioned air travels along the entire back wall, over the shelves and returns to the ceiling fans through an opening between the light fixtures and the doors.
6	One door with full access magnetic perimeter gasket and locking system with key of $\sim 146 \times 93$ cm allowing full access to chamber interior.
7	A continuous compressor operation should be maintained by an air-cooled condensing unit with a hot gas bypass system for cooling and bypass-based heating. Solenoid valves, ceiling mounted evaporator growing coil with air circulation fans.
8	A minimum work shelf area of 27-30 ft^3 should allow the plant growth of 26-30 cm or more between two tiers with white epoxy coated steel wire shelves. The shelf, light canopy should be adjustable as well as removable as per research need without any tool.
9	To ensure fitting in lab space, the outer dimension should not exceed W 105 cm X D 86 cm X H 198 cm or compact and the interior volume should be ~ 1100 liter ± 50 liters
10	One or more access port/fresh air-port, floor drain, casters assembly and adjustable leveling legs for easy movement in the lab.
11	Insulation should be of woodless construction using 2" thick foamed-in-place non-CFC Urethane insulation with 97% closed cell-structure density of approximately 2 lbs/ft^3 .
12	ISO certified and electrical safety certificate UL-508A/CCE.
13	Android based touch screen for real-time graphing. A redundant controller in case of touch screen failure to enable machine usage.
14	Programs can be configured to run manually, real time or in elapsed time. Continuous, diurnal, and multi-step program features. Multiple programs storage with a multistep feature. Two calibrations offset to be provided, light lifetime maintenance alarm audio & visible, graphic display actual and set value, view program steps and sequence time duration.
15	Dual experiment protection via integrated yet independent temp. limit troubleshooting with the shutdown feature.
16	Troubleshooting with on board diagnostics.
17	Low and high temperature deviation alarm (audio and visual), ambient temperature monitoring.
18	Minimum four level protection for controller operation/ safety & security.

19	Warranty period of minimum two-years and one year AMC.
20	All the specifications asked should be clearly highlighted in the product brochure, writing "yes (copy paste)" in the compliance/Catalog will not be considered as a valid argument which may lead to disqualification. Demo if required on technical specification verification round. Performance certificate from 5 users for over one year of usage for Arabidopsis application in national labs. Enclosed users list. Complete wiring and electrical diagram to be provided with machine.

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 and online service support for 3 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 currency indicating break up of:
 - I. For goods and commercial terms:
 - (i). Installation, commissioning and training charges, including any incidental expenses, if any.
 - (ii). Agency commission charges, if any.
 - (iii). 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 “Plant Growth Chambers with controlled light (LED) and temperature” and should reach us on or before 07-December-2023, 17:00 hours.
2. The vendor should have a good track record of having previously supplied Arabidopsis Growth Chambers in IISc, Bangalore (please furnish details).
 3. The vendor should have qualified technical service personnel based in Bangalore 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 ten months from the date of receipt of purchase order or nine to ten months from the date of receipt of Letter of Credit details (whichever is earlier).
 6. The validity period of the quotation should be 120 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.
 12. The equipment should be directly shipped to IISc, Bangalore, from the origin of manufacture.

Important:

1. Quote should come only from Global Original Equipment Manufacturer (OEM) or their Indian authorized distributor.

The sealed tender documents should be addressed to The Chair, Department of Microbiology and Cell Biology, Indian Institute of Science, Bangalore 560 012. Last date for receiving queries is 07-December-2023, 17:00 hours IST from the date of tender notification.

Thank you.

Sincerely,

**The Chair
Department of Microbiology and Cell Biology,
Division of Biological Sciences,
Indian Institute of Science,
Bangalore-560012
Karnataka, India**