

Annexure A

| Sr. No. | Technical Specification for Plant Growth Chambers- 2nos, under buyback of one plant growth chamber | Criteria Matching(Yes/No) | Remarks |
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| Make and Model | | | |
| 1 | Volume: 950-1050 Litres | | |
| 2 | External Dimension: $\leq W \times D \times H \sim 100 \times \sim 85 \times \sim 195$ cm | | |
| 3 | LED Light: At least two tier; properly spaced in horizontal shape for uniform light intensity over entire shelf on Both tier (LED Tubes are not accepted). LED spectra information on Website of Manufacturer, OEM website link to be provided for verification. | | |
| 4 | Uniform Light Intensity programmable from 10 to 100% dimmable $800-900 \mu\text{moles} / \text{m}^2 / \text{s}$ or higher of each tier light measured @ 6" from lamps bank. | | |
| 5 | Two Additional light canopy should be provided along with plant growth chamber with $400 \mu\text{moles} / \text{m}^2 / \text{s}$ light each canopy for two chambers total additional (four light canopy) | | |
| 6 | Temperature 7° to 44°C or higher range ($\pm 0.5^\circ\text{C}$) light on and 2° to 44°C ($\pm 0.5^\circ\text{C}$) light off Temperature sensor catalog must be enclosed | | |
| 7 | Temperature safety alarm, chamber automatic shut down when alarm active and automatic restart when temp returns to normal. Should have Ambient Temperature monitoring system in controller. | | |
| 8 | Ultrasonic Humidification up to 85% controlled $\pm 10\%$, catalogue must be enclosed humidity system and Humidity Sensor | | |
| 9 | Air circulation inside chamber should be from a specifically designed, 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 | | |
| 10 | Lift-off hinge design allows for simple removal of door, One door providing full access to chamber interior, magnetic gasket for tight door seal. | | |
| 11 | Top Mounted Air-cooled condensing unit with hot gas bypass system for continuous compressor operation, Ceiling mounted evaporator coil to incorporate twin air circulation fans Used for cooling and bypass-based heating. Solenoid valves with low noise and long-life operation. | | |

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| 12 | Growing area and height, A minimum work area of 1.3m ² or more should be provided. Should have a minimum plant growth height of 57 to 60 cm or more each tier, shelve and light canopy should be adjustable in ½" increments also removable without any tool. Shelve Dimension WxD not more than 93x69cm | | |
| 13 | One access port/fresh air-port, Floor drain, casters assembly and adjustable leveling legs | | |
| 14 | 1.25" access port with air-tight plug, reflective coating | | |
| 15 | ISO certified and Electrical Safety certificate UL-508A/CE | | |
| 16 | Android Based Touch Screen for real time graphing. Catalogue should be provided. | | |
| 17 | High definition IPS (1280 x 800) touch screen controller Graphing of data (last 6 hours)• Trend graphs Display directly on screen for both Set-point and Actual conditions• Android-based app also allows programming interface• Graphical interface, Highly visible alarm display, (Secondary controller should on backup in case fail primary controller Single-board electronic solid state design) Programmable controller via any of the following programing Styles:• Modify and run manual settings, diurnal program, run 24 hour multi-steps program in ramping mode, non-ramping mode, run non-24 hours program in elapsed time• Sequence multi-step programs (multiple programs can be linked together to simulate natural conditions), Dual experiment protection via integrated yet independent temperature limit shutdown, Two calibration offsets per input channel (one for lights on and one for lights off), Light lifetime maintenance:, The controller maintains the accumulated hours each light output has been activated• The accumulated hours can be reset for each output• Three wires RTD sensor inputs, visible alarm display with audible buzzer• Power failure event logging• Ambient temperature monitoring• Durable 10 keys industrial keypad with VFD display and LED indicators, Controller four-level password protection• display current set-points and process values, alarm status, alarm settings, program operation mode, program steps and controller time• Digital lighting control, troubleshooting with front Diagnostics Menu | | |
| 19 | vendor to submit the operation manual of quoted model in Tender | | |

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| 20 | <p>Quoted Model should be standard, technical and wiring diagram should be provided for evaluation Must be enclosed in tender - catalog and picture of Quoted MODEL otherwise technical bid shall not be considered, Exact Dimensions of quoted model, External Dimensions should be around (WxDxH) (100x85x195cm), All the asked specifications should be clearly highlighted in the product brochure (Pointwise) and all mentioned information should be available on OEM sites, brand name of controller should be mentioned, in case of OEM products. Writing “yes (copy paste)” in the compliance/Catalog will not be considered as the valid argument which may lead to disqualification. Demo if required on technical specification verification round. A suitable voltage stabilizer with five years warranty should be provided along with the machine.</p> | | |
| 21 | <p>Performance list of users (7-8 users minimum) for Rice/ high light plant configuration of Reach in chamber. The unit should installed in last 6-7 years and in working condition</p> | | |
| 22 | <p>Application of unit is for taking Rice to growth condition. Company should ensure performance for plants like Arabidopsis/ Tomato/ Rice and provide due support and performance.</p> | | |
| 23 | <p>Company must provide a compliance statement supported by technical literature and website.</p> | | |
| 24 | <p>Authorisation certificate from the OEM must be included in the technical bid</p> | | |
| 25 | <p>Unpacking and shifting of the instrument including manpower and forklift, if required during installation must be in the vendor scope.</p> | | |
| 26 | <p>User list must be enclosed for the quoted model supplied to any other institute/Organization in Delhi and NCR.</p> | | |
| 27 | <p>Min.3 Customer satisfactory / performance certificate for specific quoted model from the end user should be included in the quote.</p> | | |
| 28 | <p>Warranty 5 years including all spares as and when required.</p> | | |
| 29 | <p>Consumables required during installation to setup the new instrument must be quoted along with the instrument.</p> | | |