



## **Technical catalogue of SET Plant growth walk-in Chamber** **(Model-CTH(7'6"x7'6"x7'6"))**

### **1 Key Technical Specifications:**

- 1.1 Climate simulation specifications:
  - 1.1.1 Interior dimension: 7'6"L x 7'6"W x 7'6"H
  - 1.1.2 Temperature range: 15° - 35°
  - 1.1.3 Relative humidity range between 21°~35°: Ambient~80%RH
  - 1.1.4 Temperature accuracy:  $\leq 1^\circ$
  - 1.1.5 Humidity accuracy:  $\pm 5\%$  RH
  - 1.1.6 Growth Area in the shelves: 48 sq.ft.
  - 1.1.7 Growth Height between the light and shelf : 36 inches per tier

### **2 Cabinet Structural Features:**

- 2.1 Exterior shell materials : GI Pre Painted plate
- 2.2 Interior shell materials : GI Pre Painted plate
- 2.3 Interior Floor: Epoxy flooring/ Concrete floor.
- 2.4 Heat insulation materials: Hard Poly Urethane foamed plastic of 4" thickness
- 2.5 Single wing door (30"-42"W x 70"-84"H) with inner viewing window facility with lock and key and fitted with sweeping gasket and glass with light tight cover

### **3 Air-conditioning System:**

- 3.1 Regulation and control: Dual discharge evaporator coils, re-circulated air in the room by distributed uniform horizontal through back wall perforated Plenum
- 3.2 The conditioning system contains all necessary fans, heaters and valves
- 3.3 Heating: Stainless steel sheathed heater (surface evaporating system)
- 3.4 Humidifier : Ultrasonic humidification system

### **4 Lighting System :**

- 4.1 Light intensity over each growth area is 500 Micromoles measurable at six inches bottom of the canopy
- 4.2 Valoya BX 180 LED fixtures Two in each canopy on each tier
- 4.3 Two Numbers of 6.0"L x 2.0"D x 7.0"H shelving systems each with two tier and individual Light canopy for each tier. Growth Area per tier will be 12 sq.ft x 4 tier = 48 sq.ft. approx
- 4.4 Stainless steel shelf with ON/OFF switch is provided for Lights
- 4.5 Light level is dimmable from 0% to 100 % in incremental of 5% through the program from controller. The dimming of lights should be programmable thru the controller.



## 5 Cooling System:

- 5.1 Self contained Single Scroll Compressor system for maintaining the temperature in chamber
- 5.2 Hot gas by pass system control is provided for precise climatic control
- 5.3 Condensing unit is charged with CFC free refrigerant
- 5.4 Refrigeration function monitored by controller including visual and audible alarm.
- 5.5 Remote air condenser with manual HP/LP cut out and three copper pipes for each line separately
- 5.6 Expansion valve and solenoid is near to the indoor unit
- 5.7 Suction regulating valve for safety of condensing unit

## 6 Control system:

- 6.1 Sampling sensor:
  - 6.1.1 Temperature sensor: Reading displayed will be average of two NTC sensors (which is more uniform and reliable)
  - 6.1.2 Humidity sensor: Electronic capacitive humidity sensor.
  - 6.1.3 Electronic Light sensor for Intensity measurement
  - 6.1.4 Programmable PLC and Siemens 7" Touch Screen controller
  - 6.1.5 16 user programs with 12 timelines each.
  - 6.1.6 Resolution: Temperature: 0.1°, Humidity: 1%RH
  - 6.1.7 Set-range: Temperature: 15°~35°; Humidity: Ambient to 80%RH; Light: 0~500
  - 6.1.8 Audible alarms are included based on user defined limits

## 7 Security protection system:

- 7.1 Over-temperature protection
- 7.2 Overload protection of motor
- 7.3 Compressor over temperature & pressure protection
- 7.4 Over load relay for over current protection
- 7.5 Programmable Delay Relay
- 7.6 Fuse for control and lighting circuit
- 7.7 Flange Mount Disconnect for Power
- 7.8 Humidity water shortage protection

## 8 Equipment working condition:

- 8.1 Ambient Environment:
  - 8.1.1 Ambient temperature: 20°~35°, Relative humidity: ≤75%RH
- 8.2 Power supply requirement:
  - 8.2.1 Power voltage: AC415±10%V 50Hz, 3-phase + ground wire protection;
  - 8.2.2 Power switch: Air switch (knife-switch not allowed) Max. Current 28A.
- 8.3 Water & air requirement for Humidity:
  - 8.3.1 Water flux:5l/h, Water pressure: 0.5-2bar, Air pressure: 0-3 bar



**9 After-sale service:**

Charge-free warranty will last for 2 year from the date of equipment delivery. After the warranty period, the user will be charged properly. Irregular examination and life-long service are available.

**10 Technical training:** Provide Charge-free training to two operators for each user (in user site after installation and commissioning of the equipment).

**11 Additional Accessories:** Suitable R.O less than 50 TDS of 50L per hour (with PH 5-7) and suitable Stabilizer and UPS for controller are provided along with the equipment.



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**Accessories:** Warranty Certificate, Operation & Maintenance Manual with Circuit diagram: one copy



**Images for reference purpose only**





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