



## **WALK IN GROWTH CHAMBER :-**

Modular Growth chamber are manufactured to precise requirement of user generating exceptional control and uniformity of both temperature and humidity. Every component of our Growth chamber is designed and strategically placed for reliability and robust operation through its life span. Our unit enables accurate monitoring of equipment, accurate temperature and humidity control, faster recovery, precise light exposure. We guide you on your selection process, enabling you to freeze on growth chamber solution that suits your requirements optimally



## ***SALIENT FEATURES & SPECIFICATIONS***

- Pre fabricated PUF panels of 60 to 80 mm thickness
- Temperature range +5 to 60°C with Lights OFF and +10 to 60°C with Lights ON condition
- Humidity range 40% to 95%
- Temp accuracy of  $\pm 1^\circ\text{C}$  at 37°C when RH is 60% with an accuracy of  $\pm 3\%$  RH control
- Temp uniformity of  $\pm 1^\circ\text{C}$  at 37°C and humidity uniformity of  $\pm 3\%$  RH
- Digital display of temp and humidity
- Heavy duty flush fit door & lock
- Evaporator housing and condensing unit housing
- UV & corrosion resistant condenser
- Medium duty flooring – Aluminum chequered plate or FRP cladding (SS Optional)
- Appropriate lightning for room illumination
- SS long lasting resistant type air heater
- Split type air cooling system
- Forced air circulation for uniform temp control inside the work area
- ISI marked voltage stabilizer as per requirement (Optional)
- Port Hole with rubber seal to insert sensors for validation purpose
- Manual defrost system and condensate drain line for water removal in the base



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## PUF PANELS :-

Our growth chamber rooms are constructed using pre fabricated PUF panels designed specially to ensure high efficiency insulation.

PUF panels used for walls, flooring are 60 mm thick having minimum density of  $40 \pm 2 \text{ Kg/m}^3$  PUF insulation. PUF panels used for ceiling are 60 mm thick having minimum density of  $45 \pm 2 \text{ Kg/m}^3$  PUF insulation. High PUF density in ceiling makes it gives strength to ceiling for making it walkable. 0.5mm sheet is used on both skin of panel and panel skin inner side material is PPGI and outer is PPGI or MS powder coated as ordered.

Modular in nature this tongue and groove panels (in a range of thickness & dimension) are designed to interlock with ease on the site to form room of any size and any application. Each part of room – walls, ceiling, floors, doors & corners have special panel designed to ensure perfect fit. Gap between panels is filled with silicon sealant to make it leak proof.

The corner panels ensure that the room has  $90^\circ$  corner which provides growth chamber to room. Food grade PVC or metallic coving is done for smooth corner to reduce dust load in room. Coving is done at wall to wall, wall to ceiling and wall to flooring interface. The foamed in design eliminates thermal and humidity loss. Heavy-duty door hinges and latches to maintain a secure and uniform seal. A see through viewing window fitted in door for sample inspection inside the room. Provision of opening door from inside to avoid human getting trap inside the chamber and provision of alarm hooter for safety is provided.



**Foamed-in-Place Polyurethane**  
Most advanced, high-density of  $40 \text{ kg/m}^3$  PUF insulation ensures best insulating efficiency and uniform structure. Available in 60, 75, 80, 100, 125 & 150 mm thickness

**Perfect Panel Configuration**  
Available in a variety of Height and Width dimensions – Walls, Floor, Door Frame, Door Leaf, Tee Walls, Corners & Ceilings. PVC Gaskets at all joints make them perfect

**Flush Type Door**  
Aesthetic, efficient, durable, suitable for heavy-duty usage. Flush-fit with FRP door perimeter, Sliding door available for all applications



panels are easy to move in and asseble. Tongue and groove assembly is held together fixed in each other by press fit technique and sealed using silicon sealant.

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### EVAPORATING UNIT :-

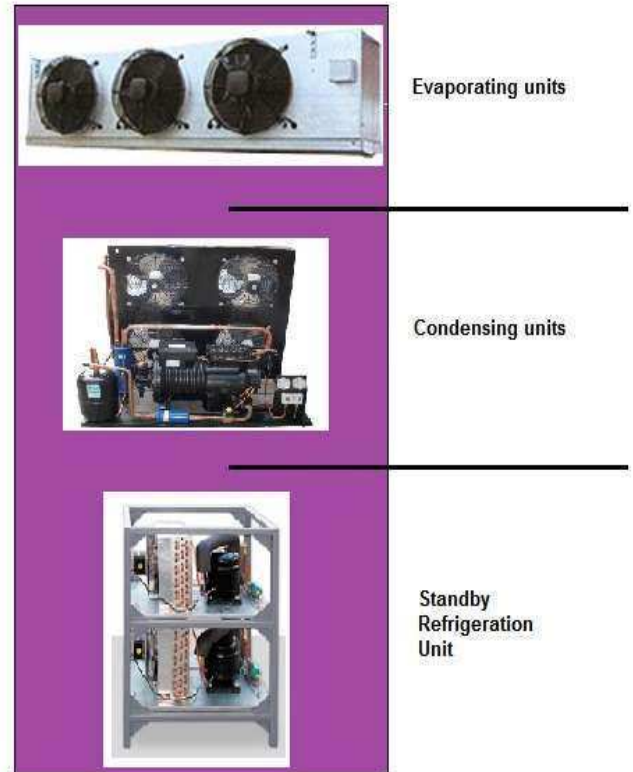
- Evaporating units are compact, slim & sleek so they occupy minimum space ensuring maximum storage space.
- Body which is excellent corrosion resistant
- Inner grooved copper tubes for superior heat transfer
- External rotor driven fans / blowers with low noise level
- Removable side panels for easy service.

### CONDENSING UNIT :-

- Condensing unit have high efficiency heat transfer and low power consumption
- Sleek design
- UV & corrosion resistant
- Inner grooved copper tubes and slit aluminium fins for superior heat transfer
- Energy efficient hermetically sealed compressor
- CFC free cooling system
- In built safety and control device
- Weather proof canopy
- Removable side panels for easy service

### CONTROL SYSTEM :-

- Micro processor based 4 digit LED display PID Temperature and Humidity indicator cum controller with auto tuning facility
- Controller has dual display for showing Set Value (SV) and Process Value (PV)
- Password protection to prevent unauthorized access to parameter settings. Only read function is available, write function is secured using password
- PT 100 temp sensor for measuring temperature having sensitivity of 0.1°C
- capacitive type humidity sensors for measuring humidity having sensitivity of 0.1% RH
- Sensor failure indication on display of controller
- Display resolution of 0.1°C and 0.1% RH
- Controller has delay timer for cooling unit
- Low water level cut off relay and metal ball float valve for automatic water level control of humidity generating tank





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- SS water reservoir with ultrasonic humidifier, low water sensor and alarm for safety for humidity generating tank
- Over temp safety protection for system using thermostat and over current protection using relay
- Single software supports multiple machines (Optional)
- Programmable Photoperiodic timer for light intensity and time exposure control
- Control panel made of CRCA sheet duly powder coated using 7 tank process



## LIGHTNING SYSTEM :-

- The standard lighting package for the system combines fluorescent and incandescent lamp which produces a very broad based light spectrum of low-to high light intensity using daylight tubes and special red and blue tubes.
- Heat from the light bank canopies is removed by the refrigeration system.
- The lamps are separated from the growth area by a transparent barrier which minimizes heat transfer to the plants.
- Standard light intensity is  $200 \mu\text{mol m}^{-2} \text{s}^{-1}$  (15000 LUX). Lighting is switched in three to five levels (20, 40, 60, 80 and 100% level) for each bank. A high light option is available which increase the intensity to  $800 \mu\text{mol m}^{-2} \text{s}^{-1}$  (60,000 LUX).
- Given light intensity are 6" from light source. The light bank height is adjustable using easy to use mechanical assembly.
- High efficiency electronic and easily accessible ballast are provided
- Lamp control is in ramp over time and a day/night cycle can be programmable.
- Light intensity can be measured by a portable light meter
- Fluorescent tubes for different growth applications are available on request.

Model no	Refrigeration capacity BTU/hr	Temp range	Humidity Range	Max Room Volume	External Size L x W x H	Power supply
SAII-WPGC1	18000	5 to 60°C	40 to 95%	335 CFT	8 x 8 x 6 ft	230V 50Hz
SAII-WPGC2	18000	5 to 60°C	40 to 95%	580 CFT	10 x 8 x 8 ft	440V 50Hz
SAII-WPGC3	20000	5 to 60°C	40 to 95%	900 CFT	12 x 10 x 8 ft	440V 50Hz
SAII-WPGC4	24000	5 to 60°C	40 to 95%	1200 CFT	12 x 10 x 10 ft	440V 50Hz
SAII-WPGC5	28000	5 to 60°C	40 to 95%	1800 CFT	15 x 12 x 10 ft	440V 50Hz
SAII-WPGC6	32000	5 to 60°C	40 to 95%	2250 CFT	15 x 15 x 10 ft	440V 50Hz
SAII-WPGC7	40000	5 to 60°C	40 to 95%	4000 CFT	20 x 20 x 10 ft	440V 50Hz

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**Optional (Additional Feature): -**

- Both side PUF panel skin with inner side made of SS 304
- Inner side of PUF panel skin made of SS 304
- SS 304 flooring
- Sliding door
- Remote monitoring facility – User can monitor room temp and humidity parameter from any place via use of internet.
- Stackable racks of food grade SS 304
- Automatic fault detection and diagnosis: Controller should detect fault automatically and take corrective measures to protect breakdown of the system – Standby refrigeration and humidity system for switch over in case of failure of primary unit.
- Low humidity range and low temp range
- PLC controlled unit with touch screen display HMI
- 21 CFR Part 11 complaint machine for pharmaceutical industries.
- Light intensity of 300 or 500 or 800  $\text{umolm}^{-2}\text{s}^{-1}$



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