



WALK IN HUMIDITY CHAMBER

AN ISO 9001 : 2015 / 14001 : 2015 / WHO-GMP CERTIFIED CO. & CE MARK PRODUCT

MODEL NO : SRL / WIHC-12



Controller :

PID Action: Provides Precise Temperature, Maintain Uniform And Accurate Growth Environment, Timer, Alarm, Auto-Tuning And Auto Start Stop Function. Technical Design and Construction Silent Fan Motor to Maintain Uniform Temperature Over Temp. and Current Protection Capability Ensure User Safety, Adjustable Sliding Rack, Alert Unexpected Interruption Of Electrical Power Or Unauthorized Change.

Optional : [PLC with HMI TFT screen]

PLC-HMI Provides Stepwise Programmable Controller with 10 or more programs Provides Automatic Operation of Variable Temperature, Humidity Value, 50 Or More Cycles with Minimum 100 Sections in Each Cycle. Data logger with RS 485/232 port for logging & transfer of data. Auto restart, power failure event logging, memory protection S.M.A.R.T/ SELF diagnostics system. Data collected from each logger shall be transferred to central data storage unit. Shall provide central data storage unit with facility to retrieve the stored data at any time. Multiple programs linked together to simulate natural condition. Control system shall have audio/audiovisual warning/alarm when set temperature/RH is below or above the set values. Ethernet communication port. Ambient temp. monitoring. Over Temp. and Current Protection Capability Ensure User Safety, Adjustable Sliding Rack, Water Level Sensor Alert Control System. Total no of output: 23 channels. Alert Unexpected Interruption of Electrical Power or Unauthorized Change. 4 digit password lock.

Application :

These equipments are used for climatic & durability tests of electrical & electronic components, corrosion test on mechanical assemblies, materials for simulated tropical & extreme tropical conditions.

Power Supply :

3 Phase 440V AC, 50Hz.

Ecocentric System :

Chamber runs on the basis of Dewpoint control. Less deviations during short-term door opening & power failure. Less utility area Increased storage area. Low operating cost. Minimum power & water consumption. Reduced deviations. Less breakdowns due to standby refrigeration & humidification system. Due to PLC HMI & controlling through microprocessor based PID Temp. & RH operations the on time of both Temp. & RH system is reduced & efficiency of this system is increased with reduced energy consumption.

Salient Features : [Optional]

First time in **India** developed by **SR Lab Instruments**. Standby Refrigeration, Standby Humidification & Standby safety controller with auto changeover, In case of failure of the main system, To run the system for a longer with uninterrupted operation.

Also USFDA approved 21 CFR compliance software, where in case of temp. & RH fluctuation, SMS & Email alert shall be sent to registered user nos and minute details of operation of the chamber can be downloaded weekly, Monthly or Quarterly.

Refrigeration system : (Air Cooled)

Emerson /Danfoss/Tecumseh: make compressors, 1 stage cooling system for TEMP. & Humidity Control. All accessories such as HPCO/LPCO, Oil Separators, Dryers, Relays, OLP etc. of **Danfoss/Tecumseh Emerson** Make. CFC free refrigerant to be used to comply with the New Environmental Regulation. Will have suitable tonnage compressor for maintain temperature with lights on. Will have hermetically sealed condensing unit compressor coupled with Evaporation coil and condenser, safe guarded by time delay circuit. Cabinet shall be supplied with air-cooled condensing unit with extended compressor life and close temperature control. Cooling system will be split type to place condenser unit in a ventilated area to avoid hot air in growth chamber. Cooled air shall be delivered in such a way to reduce or eliminate condensation within media dishes and to provide maximum uniformity In different research vessels. This may be through silent and durable fan motors or through any kind of advanced air diffusers. Air Cooled Condenser with solenoid & LP to pass hot gas to the chamber for uniformity & long life of compressor for continuous usage. Phenolic coating for cooling & condensing coils (All weather proof).

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Cabinet Construction & Insulation :

MOC of the Chamber will be: Double walled Chamber with Inner of stainless steel 304 grade & outer of GI duly pre painted PUF Insulation in between two walls.

- (i) Flooring: 2 mm aluminum chequer plates.
- (ii) The unit will be made of double walled leak proof metal door with lock, with a provision of opening door from inside.
- (iii) Forced air circulation for uniform temperature.

Insulation of Walls, ceiling and floor : 60-80mm thick puff panels with puff in-place density of minimum of 1kg per cubic foot. Exterior metal surface of insulation puff panels or its equivalent shall be of minimum 0.5mm gauge stainless steel 304 Grade. Interior metal surface of insulation puff panels or its equivalent shall be of minimum 0.5mm gauge stainless steel 304 Grade. Exterior and interior metal surface shall not have metal-to- metal bonding.

Doors : Flush type doors of metal surfaces (as per above specification of metal) with proper puff insulation of above mentioned standard. Doors shall have magnetic snap-in perimeter gasket or its equivalent, self-closing cam lift gravity hinges or its equivalent, a posi-seal door closure or its equivalent. Door shall have key lockable latch handle. Doorjamb shall be made fiberglass reinforced plastic or any other suitable material compatible with constructed door.

Safety Features :

2 minute compressor "on" delay timer to safeguard the compressor. Compressors overload relay protector. Electronic low water level cut off device to cut off the supply to boiler heater in case of low water level. Safety Temp. Controller. MCB for mains.

- (i) Unit will be provided with safety devices for temperature and humidity overshoot in case of malfunction.
- (ii) Built-in temp. Deviation, audio/visual alarms. Safety thermostat for over shooting of temp. Safety circuit to cut off the whole system.
- (iii) OLP (Overload Protector) & Time delay Circuit for safety of compressors.
- (iv) HRC fuses for compressors, Heaters & Mains.
- (v) Interior safety release knob for door.
- (vi) Hooter with switch inside (Alarm).

Certification :

ISO 9001:2015 Certified Co. D&B registered & CE mark product.

ISO 14001:2015 & WHO-GMP

ISO 45001:2018 & ISO/IEC 17025: 2017

NSIC & MSME registered / ROHS Compliance / UL Compliance

Calibration & validation certificates traceable to NABL / ERTL accredited labs.

Air Circulation :

The new walk in Humidity Chamber is provided with best air circulation to give better temperature uniformity this is achieved by using one set of motor & blower in baffle wall Compartment to push treated air in working chamber. This system gives better than 1 deg c. temperature uniformity in working chamber, evaporator, heaters & steam injection system is from back side, behind baffle wall, the air circulation blower is also fitted in this compartment only. This arrangement helps to mix steam and air together and pass well mixed air inside the working chamber. Due to above system the temperature and humidity (R.H.) in complete chamber almost remains equal.

Temp. & Humidity Range :

+10°C to +50°C , **Resolution** : 0.1°C

Temp. Fluctuation : $\pm 0.2^{\circ}\text{C}$, **Temp. Uniformity** : $\pm 1^{\circ}\text{C}$

Humidity Range : 40% to 95% RH , **Resolution** : 0.1%

Accuracy : $\pm 1\%\text{R.H}$, **Humidity Gradient** : $\sim \pm 3\%$

Trays & Racks :

Removable SS perforated trays are provided, adjustable and will slide out for easy clean up. Assembled Stainless Steel racks to accommodate trays.

Illumunation : water & moisture proof lights.

Heating / Humidification & Dehumidification :

Custom built Stainless Steel long lasting tubular heaters are used as heating element. The Stainless Steel fins ensure better heat transfer. Will consist of humidifier tank fitted with boiler heaters, and give alarm if fault occurs or Ultrasonic Humidification System. Water reservoir tank will be connected to the humidifier. De-humidification coils are installed below the cooling coils for lower humidity.

Documentation :

To comply with the documentation requirements, we provide IQ, OQ & PQ protocols to be executed before taking the chamber in to for regular use, and support the supply with the following documents with the detail operational and service manual.

Standard Operating Procedure (SOP)

Operational Manual for Controller

IQ,PQ,OQ protocols certificate.

Calibration certificate of all controlling modules with traceability. Certificate of MOC.

Test Report of chamber prior to supply with mapping certificate. wiring diagram for ease of service maintenance.

Due to continuous development & improvements in design, we reserve the right to change the specification without notice.