



# WALK IN FREEZER

## [ FLAME PROOF SPARK FREE CHAMBER ]

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

Model No : SRL / WIDF-12



### Construction : [Fire Proof Panels]

**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** : 100-120mm thick puff panels with puff in-place density of minimum of 1kg per cubic foot or its equivalent. Insulation with expanded polystyrene or any equivalent material having R factor of minimum 34. Insulation material shall maintain its dimensional stability in an operating temperature range of 5°C to +60°C Insulation puff.

**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.

### Trays & Racks :

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

### Power Supply :

Single phase 230V AC, 50 Hz / Three phase 440V AC, 50 Hz.

### Features :

Spark free Interior & Exterior. Safety feature with alarms.

Flame proof parts : Motors / HMI / Light Fitting / Control Panel / Sensors.

Fire System : Automatic Start Function / AV Alarms/Hooters / Flame & smoke detection sensors.

Complete with validation & Test Certificates.

### Air Circulation :

The 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. Uniform forced air circulate across the shelf via air diffusers on the top wall. Uniform horizontal or vertical airflow shall be provided for maintaining uniform temp.

### 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.

### Temp. Range :

-25°C

Accuracy :  $\pm 0.2^\circ\text{C}$ , Uniformity :  $\pm 1^\circ\text{C}$ , Resolution :  $0.1^\circ\text{C}$

All chamber meet the ICH Q1A guidelines for testing including :

Long Term : -25°C.

Intermediate : -25°C.

Accelerated : -25°C.

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## Refrigeration system : (Air Cooled)

**Emerson / Bitzer /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).

## Safety Features :

In case of fire inside the chamber, inert gas will be purged. Automatic start function.

Flame & smoke detection sensors installed inside the walk in chamber. No risk of personal Injury.

Faster than other extinguishing systems using natural gases. Extinguishing storage system. Electrical non-conducting.

Best Environmental protection by HFCs.

No clean up required after discharge.

Modular design using multiplex extinguishing agent storage containers.

Other walk in chamber also available in Flameproof.

Unit will be provided with safety devices for temperature and humidity overshoot in case of malfunction.

Built-in temp. Deviation, audio/visual alarms. Safety thermostat for over shooting of temp. Safety circuit to cut off the whole system.

Interior safety release knob for door.

Hooter with switch inside (Alarm).

## Certification :

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

ISO 14001:2015 & WHO-GMP

NSIC & MSME registered

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

## Controller :

**Standard PID:** 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 Control system with touch screen display & HMI for data Storage, data logger reading & audit trail, Door access & SMS records, Email alert. Data Logger 1 temp + 1 RH. Data Logger with LCD display window capable to store non volatile data memory up to 5000 readings with audit trail facility complies 21 CFR Part 11. Change over to stand by system automatically as per schedule or on detecting fault with current system Temp. & Humidity overshoot and under shoot protection Mobile Alarm system, Door Access, system setting reset , Graph, SMS, Email alert, etc.

## Stability Data Management Software 21 CFR Part 11 Compliance :

21 CFR part 11 Compliance.

Online & Offline Data representation in Tabular as well as Graphical Form.

Separate display formats for Real time Data & Acquired Data for single or multiple chambers.

Mean Kinetic Value (MKT) as per USP 24 NP 19 - Daily, Weekly, Monthly.

## Validation :

With 8 Temp. & 8 RH point scanner with sensor printer interface & Data storage facility, 24 hrs with load & 24 hrs w/o load, 8 hrs power failure test, 15 mins door opening test for one condition only.

## 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.