

# ULTRA THERMO SCIENTIFIC



**Complete  
Environmental  
and Testing  
Solutions**

# Environment Simulation

- Hot Test Chamber
- Cold Test Chamber
- Humidity Test Chamber
- Cyclic Chamber
- Climatic Test Chamber
- Environmental Test Chamber
- Walk in Chamber
- Thermal Shock Chamber

## Custom Built Systems

- Freezer Cabinet
- Chiller Plant
- Oil, Coolant & Water Bath



# Environment Safety

- Acoustic Control
- Noise Booth
- Acoustic Door
- Sound Proofing



# Biotechnology and Laboratory Application

Freezer Cabinet : 4°C to -80°C

Cold Room : 4°C

Freezer Room: -10°C to -40°C

Incubator Room: 5°C To 60°C

Environmental Room:

0°C to 50°C

Ultra-Low Freezer Room:

-10°C to -80°C

Chromatography Cabinet:

2°C to 4°C



Pharmaceutical Laboratory Rooms

# Company - Overveiw

ULTRA THERMO SCIENTIFIC, ESTABLISHED IN 2002, STARTED AS A SUBCONTRACTING COMPANY MANUFACTURING SPECIAL PURPOSE CHAMBERS TO SIMULATE HOT, COLD, HUMIDITY, THERMAL SHOCK, WALK IN CHAMBER AND VIBRO CHAMBER, UNDER GUIDANCE FROM M/s. CLIVE HURLEY, UK.

IT BECAME A SEPARATE PROFIT CENTRE HEAD IN 2006.

HAVE MANUFACTURED AND SUPPLIED MORE THAN 180 SPECIAL PURPOSE SIMULATION CHAMBERS BETWEEN 2006 TILL 2012.

PROMOTED BY YOUNG AND DEDICATED TEAM WITH RICH EXPERIENCE IN THE FIELD.

STATE OF ART MANUFACTURING FACILITY AT THIRUMUDIVAKKAM SIDCO INDUSTRIAL ESTATE, CHENNAI.

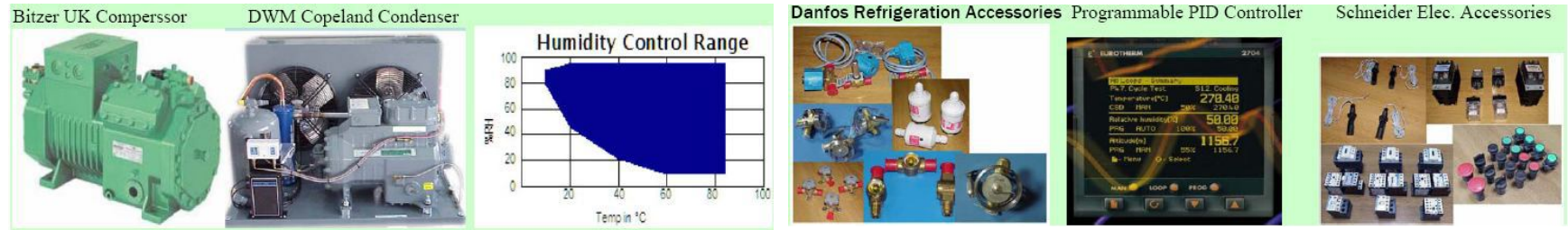


## DESIGN BRIEF

- Leading-edge technology
- Service Proven
- Maintenance friendly
- Highest possible quality
- Reliable and Durable
- Best fit and finish
- Economical to run
- Environmental Friendly
- Modular construction for ultimate flexibility



# Critical Sub Assemblies



**Inner Cabinet :** 16SWG, SS304/316 Sheets are used

**Fabrication :** Hi precision CNC press brake & turret punch used to achieve Intricate shape, size and contour

**Use of Ajax** make pop rivets for reliable joining of SS sheets

**Use of TIG & Spot welding** gives better strength and leak proof enclosure.

**NC controlled** brazing machine is used to achieve consistent quality of leak proof joints.



# Refrigeration Sub-assemblies

Usage of following **Danfoss – Denmark** Make refrigeration controls make our chambers reliable & dependable



- Solenoid Valves
- Expansion Valves
- Dryers
- Sight Glasses
- Hand Shutoff Valves
- Vibration Eliminator
- Crank Case pressure regulator

**High Cycle Time & Zero Down Time**



# Instrumentation of our Chambers

## Graphical Controller

(Eurotherm - UK)

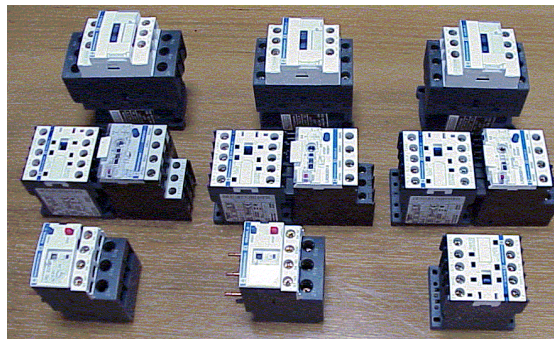
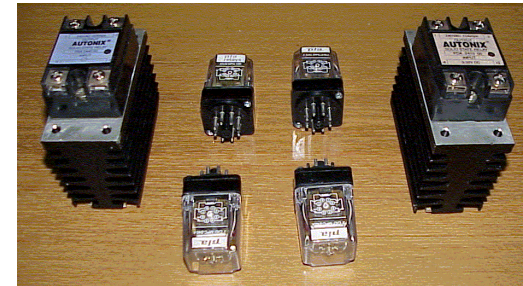


### *Salient Features*

- Two Loop PID Programmable Controller
- High stability control
- Cascade Control
- 0.1% Accuracy
- 500 programs steps
- iTool program editor software
- Control over LAN
- Modbus Digital Communications
- OPC Link to LabView

# Controls & Panel of our Chambers

Usage of Schneider Electric - USA Make switchgears & indicators make our chambers reliable & safe to operate



**Safety for decades...**

# Interior & Exterior of our Chambers



- Interior  
16 SWG Satin Finish Stainless Steel,  
304 Grade
- Exterior  
16 SWG MS Steel Fabricated and  
Powder Coated
- Vaccumised 5 pane toughened glass  
glazed viewing window is surrounded by  
Tracer Heaters for clear visibility
- Spring loaded hinges & latches in bright  
chrome plated finish
- Silicone foam Door Gasket
- Integrated Control Panel





#### Product Features

Internal Volume	125Ltrs to 2000Ltrs
Temperature Ramp	-65degC to 180degC Up to 5degC/min average 20% to 98% RH
Fabrication	CNC Fabrication
Exterior Finish	SS304 / MS Powder Coated
Inner Finish	SS304
Viewing Window	5 Pane, Vacuumised , with Strip Heaters
Controller	Eurotherm High Performance PID Controller
Port Holes	Holes with Silicone Closures
Interface	RS232/485



#### Product Features

Environment Simulation	Hot Zone : Ambient to 200degC Cold Zone : Ambient to -70degC
Basket Volume	Up to 210Ltrs
Fabrication	CNC Fabrication
Exterior Finish	SS304 / MS Powder Coated
Inner Finish	SS304
Viewing Window	5 Pane, Vacuumised , with Strip Heaters
Controller	Eurotherm High Performance PID Controller
Interface	RS232/485



### Product Features

Internal Dimensions	As per Customer Specification
Temperature Ramp	-40degC to 180degC Up to 2degC/min average
Fabrication	20% to 95% RH CNC Fabrication
Exterior Finish	SS304 / MS Powder Coated
Inner Finish	SS304 / SS316
Viewing Window	5 Pane, Vacuumised , with Strip Heaters
Controller	Eurotherm High Performance PID Controller
Port Holes	75mm dia Access Port Holes with Silicone Closures
Interface	RS232 PC Interface with Configuration software
Door Assembly	Single or Double Door





Product Features	
Internal Dimensions	Up to 1000Ltrs
Temperature Ramp	-70degC to 180degC Up to 5degC/min average
Fabrication	20% to 98% RH CNC Fabrication
Exterior Finish	SS304 / MS Powder Coated
Inner Finish	SS304
Viewing Window	5 Pane, Vacuumised , with Strip Heaters
Controller	Eurotherm High Performance PID Controller
Port Holes	Holes with Silicone Closures
Interface	RS232/485

# Custom Built Special Chambers

1. Dust Chamber
2. Rain Chamber

# Rain Test Chamber



- Specially designed for Simulating Rain Environment as per IS and JIS Standards
- Can be modified for other internal / international standard requirements
- Complete CNC Fabrication gives perfect fit and finish
- Inner box is fabricated using SS304, 1.2mm thick Material, completely TIG Welded for 100% Water Proof
- Fixed Sample rotation and Arm rotation to suit IS and JIS Standard.

# Rain Test Chamber



- 5 Pane Viewing Window with Viewing Light
- Drain, Rerouted to Water Reservoir (200Ltrs) for continuous test duty
- Silicone beading for the Door assembly
- Water Spray Nozzle positioned as per JIS and IS Standard
- Table Dia 400mm, Height : 250mm adjustable
- 17/10 RPM Table rotation as per JIS and IS standard
- 23 RPM ARM Rotation to suit JIS Standard
- Port Hole : 75mm dia with Silicone Closure
- Door interlock
- 2 HP Kirloskar / Grundfoss Water circulation Pump to produce up to 4bar discharge pressure with flow rate up to 40 LPM
- Concealed Non Corrosive Pipe Line with suitable bypass and pressure regulators
- Pressure gauge and Water Flow Meter to monitor and set the pressure and LPM
- Hour meter

# Rain Test as per JIS D 203



- A nozzle shaft 40mm dia is fixed at an angle of 45 degree at the top center of the panel.
- It contains one rain simulation arm and one Spray Nozzle arm.
- Rain Simulation Arm : 700mm length, 18mmdia, with 0.4mm dia. heads at 15 - 17mm gap
- Spray nozzle arm : 400mm length.
- The arms are made of SS 304. They are at right angles to each other.
- Arms are connected to nozzle shaft, which in turn is connected to a motor. The arms can be made to rotate at 23 RPM complying JIS requirement.
- Suitable glands are provided in the nozzle shaft for connection to water line.
- Table rotation at 17 RPM



# Rain Test as per IS 9000 Part XV1



Four Nozzles as per IS standard are fixed at an angle of 45deg at the top 4 corners of the test space

Four Nozzles are placed at the centre of each four sides.

Table speed at 10RPM

Water Line Pressure 2bar

During the operations of all nozzles the combined flow rate will be 7.5LPM



# Safety Features and Facilities

- Single phase preventer
- Individual MCB's and OLR's for Pump and Motor
- Flame proof wiring
- Door Interlock
- RYB Indication
- Earth Link
- Kirloskar / Grundfos Pump ( 50LPM, 4bar )
- Window Wiper
- Timer with alarm
- Access Port hole 75mm diameter with silicone closure
- On off switch for Pump, Motors, Viewing light
- Shutoff valves for nozzles
- Water drain and recirculation facility
- Bye Pass and Pressure regulators

# User list

