Stability Chamber (Environment Test Chamber)

Humid it, Warm it & Stabilize it for Intensive Research

- Drug and Drug Substance Testing
- Plant & Vegetable Testing
- Electronic Chips & Components Testing
- Paint Testing
- Cement testing
- Chemical Testing

Elegant & Reliable

EiE INSTRUMENTS PVT. LTD.

www.eieinstruments.com
**Technical Specifications**

- **Temp. Measurement**: By PID Controller.
- **Rh Measurement**: By capacitance type Rh sensor.
- **Temperature Range**: -10 °C to 70 °C
- **Temperature Accuracy**: ±0.5 °C
- **Humidity Range**: 35 % RH to 95 % RH
- **Humidity Accuracy**: ± 2 % RH

**Safety Features**

- High temperature safety cut off
- Low water level boiler cut off
- Electrical overload cut off
- Time delay for compressor switch ON
- Electrical circuit breaker

**Construction Details**

- CE Certified.
- Double wall construction.
- Interior fabricated from high grade stainless steel (S.S.304).
- Exterior body made of Mild steel-which is duly powder coated in attractive shades
- 70mm PUF/ fiberboard insulation to prevent thermal loss.
- Forced air circulation through quiet running blower vertically down and re circulated throughout the chamber for uniform temperature and humidity.
- Full size polycarbonate sheet inner door to inspect samples without affecting the chamber temperature.
- Properties of polycarbonate sheet door (Unbreakable, Un-scratchable, High temperature resistant, Robust, Air tight and Transparent).
- Outer double walled metal door with sponge - type silicon gasket for air-tight sealing.
- Non condensing steam injection type humidity system with stand by heater.
- Electromagnetic switch for controlling the wet heater from burning off if water level is not adequate. Float valve provided to control water level in the boiler tank.
- Electrical wiring as per CE Compliances.
- Chamber illumination is accomplished by Fluorescent light with door switch.
- Cord wire duly tested and inspected with stress factor as per CE standard.
- Electric Motor located at back side of unit, which is protected with safety cover to avoid accident.
- Standard motor of reputed companies - such as CG, GODREJ or GE Make.
- User friendly and tactfully designed chamber door and locking mechanism.
- Aesthetic outer appearance and high quality
- Unit mounted on castor wheels for easy movement.

**Heating & Cooling System**

Long lasting SS tubular heaters used as heating element. The stainless steel fins ensure better heat transfer. Cooling is accomplished by Hermetically sealed compressor CFC free compressor (134 A gas) coupled with evaporation coil and condenser.

**Trays for samples**

- Removable perforated trays are part (made of S.S. wire mesh) of the standard supply.
- The trays of the Humidity cabinet will be manufactured from strong Stainless steel rods - strong enough to with-stand heavy load of test specimens which should be equally distributed among trays.
- Such trays will also facilitate better air circulation.
- The distance between trays will be 15-20 centimeters.

**Selection of Humidity Chamber**

<table>
<thead>
<tr>
<th>WORKING CHAMBERS (W X D X H (cm))</th>
<th>OVERALL DIMENSION (W X D X H (cm))</th>
<th>CAPACITY (LITERS)</th>
<th>NOS. OF TRAYS</th>
<th>NET WEIGHTS IN KG</th>
<th>SHIPPING WEIGHT KG</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 X 45 X 45</td>
<td>66 X 74 X 119</td>
<td>92.00</td>
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<td>115.00</td>
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<td>60 X 60 X 60</td>
<td>81 X 84 X 135</td>
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<td>150.00</td>
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<tr>
<td>60 X 60 X 90</td>
<td>81 X 84 X 165</td>
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**Construction Details**

- Designed as per ICH guidelines to meet, WHO and USFDA requirement
- Fulfills storage conditions of 25° C - 60% RH, 40° C - 75% RH, 30° C - 65% RH, 25° C - 40% RH, 30° C - 35% RH
- Temperature Accuracy: ± 1.0° C
- Temperature resolution: 0.1° C
- Humidity Range: 30% RH to 80% RH,
- Humidity Fluctuation: Maximum 3% RH
- Chamber Illumination: With 2 or 4 LED lights for lesser power consumption
- Compressor Watts: 1.5 KW
- Dry Heater Watts: 2.0 KW
- Wet heater watts: 3.0 KW
- Overall Power consumption: 2.5 KW Per phase (For 3 - phase connection)
- Power consumption: 7.0 KW (For single phase connection)
- Capacitance type Humidity sensor enables direct display of RH and temperature
- (ASI - PLC) Application Specific Integrated Programmable Logic Controller with Touch screen HMI for precise control of temperature and humidity parameters - fully protected with password
- Colour graphic HMI System
- Auto change over to standby systems through PLC - Change over from Main set to Redundant Set and Vice Versa
- Multipurpose Temperature and Humidity logger with printout facility
- In-built data logger for selected number of channels (4, 8, 12, 16, 32) within the LCD colour Graphic controller
- ASIC system with HMI having capacity of inbuilt storage upto 2 GB - 38,00000 Storage readings (Nearly unlimited storage) - this is the controller storage capacity
- 21 CFR compliance software - part 11 USFDA guidelines
- 10 - 20 different Humidity chambers can be connected to EIE - 21 CFR Compliance software
- Highly ergonomic door handle with unique key lock
- Built up with 80 mm Puff Insulation for maximum thermal protection.

**PLC hardware configuration**

1) Analog inputs: 4 (Universal)
2) Analog outputs: 2 (mA / V)
3) Digital inputs: 12 (Contact closure)
4) Digital Output: 12 (12V/ 40mA short circuit protected Pulse output)
5) Serial Port (HMI): One RS485 half duplex Serial Port for HMI connectivity
6) Serial Port (PC): One RS485 half duplex Serial Port for PC connectivity or Ethernet: 10/100T-Base Ethernet port for PC connectivity
7) Power Supply: 24V / 1A DC

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Salient Features of EIE - LCD Smart Graphic Programmable Logic Controller (ASI - PLC) with HMI

- **Type**: Multi channel Programmable Logic controller
- **Enclosure**: Open frame flush mount type
- **Panel cut-out size**: 140 x 80 x 100 mm (W x H x D)
- **Display**: 7” Graphics LCD display (HMI)
- **LCD Type**: Colour TFT Touch Screen (Colour HMI)
- **Power consumption**: 12 VDC / 15Watts
- **Integrated 4/8/16/32 channels data logger Within PLC for thorough mapping of chamber**

- Resistive Touch Panel for Scrolling Screens and Setting Parameter Values
- An operator can store and operate multi-user profile
- Software calibration with encrypted password
- Company Name & Logo on welcome screen
- User adjustable Date & Time settings
- Password protected entry levels for Operator, Supervisor etc.
- Two independent PID loops for Temperature and Humidity Control
- Generates Alarm if chamber Temperature and/or % RH value cross user defined High/Low Limits
- Cuts off system operation in case of gadget failures

- Intelligent control for door opening detection
- Auto resume after power failure feature
- Monitor Low Water Level status for alerting user through Alarm
- Facilitates automatic water filling system
- Facilitates auto change over from main refrigeration system to standby refrigeration system and from main heating system to standby heating system
- Checks and displays gadget health for both the redundant sets on home screen, thereby eliminating the erroneous performance
- Generates Process Value & Event Status Records, duly date/time stamped, and store in non-volatile flash memory

- Soft touch on screen Help Menu
- In-built memory for Storing Process Data Records such as Temperature, Humidity, Time etc
- RS - 485 / RS-232 Communication Port for Remote Data Access via Host PC
- Audio Buzzer for Alarm Annunciation
- Provide easy transfer of stored records, in CSV format, to Pen-Drive for direct reading and processing through Excel Sheet
- Improved reliability, accuracy and control for all processing applications
- Following Self-Diagnostics Messages will be displayed On-Screen
  1) Sensor opens
  2) Low water level
  3) Door open
  4) Main set active
  5) Gadget Health OK
  6) Temperature out of the range
  7) Rh out of the range
Salient Features

- Multi Chamber data - Acquisition Software
- Generates graphical analysis of DATA as per - 21 CFR Compliance guidelines
- File encryption Facility
- Secure login facility
- Password protected. System access is controlled by the system supervisor
- Limit system access
- Limit module access
- Password expiration
- Bilateral user ID and password identification
- Access failure lockout
- System access logs
- System audit trail report
- System Input / Output logs
- Mean kinetic temperature calculation
- Maintains log of user activities like users logged in, login/logout time, and changes made by the user in software settings Audit Trail Reports.
- Ensure Gap-free Records
- Schedule Reports via Email
- Meet Tough Standards
- View Environments in Real-Time
- Flexible Alarm Management
- Consistent Alarm Acknowledgements
- Highly Secure & Temper proof
- Protection From Data Loss

EIE - 106 (RWHMI) Walk-in Stability Chamber

Selection of Walk-in Chamber

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<tr>
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<tbody>
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<td>2.16 X 1.52 X 2.16</td>
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