

# Environmental Chamber

## NSW-152-HC

### CLIMATIC CHAMBER / THERMAL CYCLING CHAMBER/ DAMP HEAT CYCLING CHAMBER /CONDITIONING CHAMBER

#### APPLICATION

NSW India climatic chambers are a great choice for cyclic low, high temperature and humidity tests. Built with the highest quality and reliability, this chamber can meet the most stringent testing needs of various international standards such as ASTM, IEC, MIL, DIN, etc.

NSW climatic chamber is designed for simulating, monitoring to control environment conditions. These chambers are double walled and modular in construction, easy to assemble at site. Size of chamber can be made as per customer requirement. Air circulation is made to create uniform temperature under RH inside.

NSW climatic chamber is used to carry out various climatic tests such as condensation free temperature cyclic, hot storage /cold storage test at different temperature which may be fixed or variable.

#### CALIBRATION / VALIDATION

- Temperature sensor probe calibration with traceability to ERTL
- Temperature controller calibration with traceability to ERTL

#### USES:

- Determination of di-electric strength, insulation tests of electrical components.
- To use as stability chamber in the pharmaceutical industries

#### TEMPERATURE & HUMIDITY

- **Performance range for Temperature Testing**
- Temperature Range: -30/-40/-70°C/-80°C /-90°C to +120°C /+150°C +180°C/+200°C
- Temperature fluctuation in Time  $\pm 0.5^{\circ}\text{C}$
- Rate of Heating Min  $1^{\circ}\text{C}/\text{min}$  to  $10^{\circ}\text{C}/\text{min}$
- Rate of Cooling Min  $1^{\circ}\text{C}/\text{min}$  to  $10^{\circ}\text{C}/\text{min}$
- **Performance range for Humidity Testing**
- Temperature Range:  $10^{\circ}\text{C}$  to  $+95^{\circ}\text{C}$
- Temperature fluctuation  $\pm 0.5^{\circ}\text{C}$
- Humidity range 10% to 98% R.H.
- Humidity deviation  $\pm 3\%$
- Dew point for Humidity tests  $-3^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$

#### CONTROLSYSTEM AND ITS PROGRAMMING

##### Control, Data acquisition and Monitoring (minimum requirements)

- Digital 32 Bit measuring and control system 4.3/5/7/10" or larger Size Color Touch Panel which have inbuilt controller for operation, with/without the need of PC
- Touch Panel: Color touch panel for operation
- The display shall provide the Information set and actual values of temperature and relative humidity in graphical form and numerical form.
- The temperature of the chamber shall be monitored by a temperature-sensing device suitably located in its working space. Provision for continuous display of set value and actual value of Temperature, Humidity and graphical representation of Temperature and Humidity with respect to time
- USB and Ethernet Interface
- Program memory programs-
- Segments- Program controllers start parameters for programs: immediately, delayed, real time, pause.
- Password protection- Yes
- Provision for selection of manual and automatic modes
- Ethernet port for connection to a remote PC for programming and data logging



# Environmental Chamber

## CONSTRUCTION

**Interior:** The inner chamber shall be constructed using AISI grade of stainless steel which is Corrosion Resistant. This shall be polished with a suitable finish. The entire test space is TIG welded and reinforced.

**Exterior:** The exterior of the chamber shall be constructed of AISI grade welded galvanized steel chassis, with galvanized steel panels and access doors

**Doors:** Single door with door limit switches: Door shall have made using same material and thickness as of chamber with Limit Switch. Hinged on the left side, lockable, optimum contact pressure, one-handed operation with fog free heated viewing window.

**LOCK:** Lock on right hand side of chamber mandatory to meet building installation requirement.

Observation Window- Multilayer Observation Window of. Observation Window with internal heaters to avoid condensation formation on the Window

**INSULATION-** The chamber shall have double wall type construction with minimum 125 mm insulation thickness (glass wool/puff) to take care of heat loss from the workspace and avoid condensation / hot spots on exterior wall

**GASKET:** Double layer silicon gasket shall be provided for proper sealing of the door with chamber.

**CASTER WHEELS:** lockable non-metallic heavy duty castor wheels of sufficient weight carrying capacity shall be mounted for easy movement of the chamber on floor

**Illumination Lamp:** Chamber shall be provided with illumination lamp for the working space

Test Specimen protection: High and Low temperature limit controller which can be adjusted digitally (specimen protection with separate sensor) according to EN 60519-2 (1993)

**Measurement sensors;** PT 100 Platinum Temperature Sensor. Climatic Psychrometric humidity measurement with automatically wetted wet bulb temperature sensor

**REFRIGERATION UNIT:** Air-cooled /Water –cooled refrigeration unit

**ACCESS PORT:** 50mm/100mm/Φ 125 mm/150mm/200mm

## SIZE INSIDE CHAMBER (STAINLESS STEEL 304 QLTY)

MODEL	SIZE (MM)			LTRS	RATING
	W	D	H		
NSW-152-HC-1	455	455	710	147	4.0 KW
NSW-152-HC-2	600	550	750	250	4.0 KW
NSW-152-HC-3	605	605	910	335	5.0 KW
NSW-152-HC-4	600	600	1200	450	5.0 KW
NSW-152-HC-A	600	650	1350	540	5.0 KW
NSW-152-HC-B	750	800	1000	600	6.0 KW
NSW-152-HC-C	800	800	1200	800	6.0 KW
NSW-152-HC-D	950	1000	1000	950	7.0 KW
NSW-152-HC-11	1000	1000	1000	1000	7.0 KW
NSW-152-HC-12	800	800	1800	1210	7.0 KW
NSW-152-HC-13	1000	1000	1300	1300	7.0 KW
NSW-152-HC-14	1000	1000	1500	1500	7.0 KW
NSW-152-HC-15	1600	800	1570	2000	7.0 KW

## OPTIONAL:

LCD Touch Screen display graphical profile, HMI/ PLC Controller with PC interface and serial communication port (RS-232/485) to cost extra.

## VALIDATION

IQ, OQ, PQ and DQ documentation and protocols shall be provided with equipment.

Documentation shall be given after supply & Installation.

Performance Qualification with Temperature Mapping.

The performance Validation Test consists of one cycle at any one temperature point for an 8-hour period.