



NSW-152-CATH CUVATH TESTER (COMBINED UV ALTITUDE TEMPERATURE HUMIDITY TESTER)



Narang Scientific Works Pvt. Ltd. is the leading manufacturer with expertise's in design and engineering and end to end range of solutions and a penchant for customer service. NSW provides best-in class technology for customers worldwide.

The NSW India UV Ozone Environmental Test Chamber with Altitude are the ideal pair for controlled material testing, function tests, ageing tests, or climate tests on composites, concrete, plastics, or electronic components in material technology, the automotive and aerospace industries, and electronics due to their quick, precise, and energy-efficient temperature changes in the range of -70°C to +50°C,

NSW UV Ozone Environmental Test Chamber with Altitude are 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 inside.

WHO GMP
compliant company



Certified



NARANG SCIENTIFIC WORKS PVT. LTD.

(Manufacturers & Exporters)

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NSW UV Ozone Environmental Test Chamber with Altitude are used to carry out various Environmental and Ozone tests such as condensation free temperature cyclic, hot storage /cold storage test at different temperature which may be fixed or variable.

DETAILED DESCRIPTION

Chamber Type UV Ozone Environmental Test Chamber with Altitude.

Construction: Standard chambers are made with stainless steel inner chamber; while exterior cabinet is made of powder coated GI sheet. The steel frame is nicely welded and firmly jointed to ensure you a rugged machine. High density PUF insulation is filled in the gap between inner and external walls. Heavy duty caster wheels are fitted at bottom for easy mobility of the temperature cycling chamber.

Door: The door is also insulated and fitted with imported latch. A silicone gasket is fitted on the door for excellent sealing. A frost-free observation glass window is also provided on the door.

Heater: Only branded SS tubular air heaters are used in our hot and cold chambers to generate heat. These heaters provide rapid heating with long service life

CONTROL SYSTEM AND ITS PROGRAMMING

Control, Data acquisition and Monitoring (minimum requirements)

Digital 32 Bit measuring and control system 7" 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 information on the set and actual values of temperature 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, and graphical representation of Temperature with respect to time

Built-in Error diagnostic System to know about information on operating times and possible operating failures

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USB and EthernetInterface

Program memory programs- 10

No of Segment in each Prog.: 20

Segments- Program controllers start parameters for programs: immediately, delayed, real time, pause.

Loops- special control algorithms defined according to test tasks.

Program cycles 250 (nested)

Password protection- Yes

Limit value monitoring system- max. 9999

Provision for selection of manual and automatic modes

Ethernet port for connection to a remote PC for programming and data logging

SOFTWARE & HARDWARE INTERFACE

ESS Climatic Test Chamber in remote mode, set customized thermal cycling profiles, record/store temperature graph on host computer.

Provisions to program the chamber and power ON/OFF the chamber via PC.

Interface: Ethernet/USB/RS-232/422 port, for direct connection & data logging

CONSTRUCTION

UV Ozone Environmental Test Chamber with Altitude

Interior: The inner chamber shall be constructed using Stain less steel sheet 18 SWG, 304 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 18 SWG GI Steel, powder coated, heat and corrosion resistant chassis, with galvanized steel panels and access doors.

Doors: Single door with door limit switches:

Full opening single swing front single door equipped with Chromium plated hinges and tight sealing high temperature silicon rubber gasket

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 shall be provided with internal heaters to avoid condensation formation on the Window

Shelves 2no of adjustable shelves provided along with the chamber with minimum loading capacity of 25-80 Kg each

Test space loading- Capacity for Load 50 kg Maximum Load Per Shelf Maximum load: 150 kg on test space floor The Chamber shall operate with an ambient temperature of no more than 45°C.

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INSULATION- Insulation shall be made of high-density, low K- factor glass wool & ceramic wool combination. Low thermal conductivity breaker used to seal the insulation to eliminate heat transfer between the inner tank and outer body

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

Measurement sensors; PT 100 Platinum Temperature Sensor.

FAN MOTORS AND AIR CIRCULATION:

Fan motor shall be required. Fan motors shall be 3 phase induction motor with single jointless long shaft made of S.S. properly balanced to avoid any noise and vibration during operation
S.S Axial fans shall be used. Only S.S. Nut / bolt shall be used to mount fan/blower on motor shaft.
Sufficient air circulation shall be provided to achieve specified temperature gradient.
Air shall be sucked by the fan from the workspace, flown down to bottom and entering to workspace.
Proper ducting for air flow passes over heater and cooling coil for uniform distribution of air in workspace.

DRY HEATING SYSTEM:

Sealed Inconel heaters properly insulated to withstand high and low temperatures. The system is protected from overheating when the temperature exceeds a predefined limit. Interlocks provided to prevent operation of heating system when there is no air circulation in the test space.

REFRIGERATION UNIT: Air-cooled refrigeration unit

Two stage (cascade) refrigeration system using refrigerant R-404a (for High stage) and R-23 (for Low stage), Air cooled condenser, cascade condenser and compressors (semi-sealed).
Air-Cooled, Refrigerant- environmentally friendly & non-CFC based Refrigeration unit

ACCESS PORTS: Access Port: 50/75/100/125/150 mm on Left Side

Safety

a) Safety thermostat

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- b) Low/high pressure cutouts c) Safety Alarm, Tower Lamp
- d) Door Limit Switch e) Overload Trip & Earth Leakage Trip for complete Chamber.
- f) Single Phasing Trip in case of a phase failure
- g) High phase-to-phase voltage variation or phase sequence change for three phase system.
- h) MCB's/MPCB'S for Heaters, Motors, Compressors.
- i) Overload Trip for Heaters, Motors & Compressors.
- j) Separate over Temperature Cut-off for Heaters.
- k) Heater Power supply: 3/N/PE AC 380/400V $\pm 10\%$, 50Hz

BASIC OF DESIGN

MODEL	SIZE(MM) W D H	LTRS	RATING
NSW-152-CATHUV-1	455 x 455 x 710	147	4.0 KW
NSW-152- CATHUV-2	600 x 550 x 750	250	4.0 KW
NSW-152- CATHUV-3	605 x 605 x 910	335	5.0 KW
NSW-152- CATHUV-4	600 x 600 x 1200	450	5.0 KW
NSW-152- CATHUV-5	600 x 650 x 1350	540	5.0 KW
NSW-152- CATHUV-6	750 x 800 x 1000	600	6.0 KW
NSW-152- CATHUV-7	800 x 800 x 1200	800	6.0 KW
NSW-152- CATHUV-8	950 x 1000 x 1000	950	7.0 KW
NSW-152- CATHUV-9	1000 x 1000 x 1000	1000	7.0 KW
NSW-152- CATHUV-10	800 x 800 x 1800	1210	7.0 KW
NSW-152- CATHUV-11	1000 x 1000 x 1300	1300	7.0 KW
NSW-152- CATHUV-12	1000 x 1000 x 1500	1500	7.0 KW
NSW-152- CATHUV-13	1600 x 800 x 1570	2000	7.0 KW
Brand	NSW INDIA		
Temperature range	-30/-40/-70°C/-80°C /-90°C to +120°C /+150°C +180°C/+200°C//+250°C		
Rate of Heating	1°C/min to 15°C/min		
Rate of Cooling	1°C/min to 15°C/min		
Altitude Simulation Range	Sea Level to 20 km equivalent altitude		
Pressure Display Resolution	0.1 mbar		
Chamber Leak Rate	Less than 1 mbar/hour		
Temperature Control Resolution	1°C		
Temperature Tolerance	$\pm 1^\circ\text{C}$		
Humidity Range	20% to 98% RH (if applicable)		
Material of Construction	SS 304, 2 mm thickness		

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Internal Finish	Mirror Finish
External Finish	Brushed Finish
Door Type	Airtight
Door Gasket	Ozone-resistant Silicone Gasket
Viewing Window	UV-blocking Polycarbonate with Shutter
Fan Type	Ozone-resistant Axial Fan
Fan Capacity	150–200 CFM
Ozone Range	0–100 ppm
Ozone Adjustment Step	10 ppm
Ozone Accuracy	±2 ppm
Ozone Generation Method	Corona Discharge + UV-C Lamps (185 nm)
Ozone Generator Type	Corona Discharge Type
Ozone Generator Capacity	10–20 g/hr
Ozone Generator Construction	Ceramic Dielectric, SS Body
UV Source	UV-B: 313 nm (280–315 nm)
UV Lamps	185 nm for Ozone Generation and 254 nm for Sterilization
UV Lamp Material	Quartz Glass
Irradiance Power	0–4 W/m ² Adjustable
Number of Lamps	01 Set Installed + 4 Sets Spare
Sensor Type	Electrochemical
Sensor Range	0–200 ppm
Sensor Output	Analog 4–20 mA
Sensor Accuracy	±2% FS
Controller	PLC with Analog Inputs and Digital Outputs
HMI	7" Touch Screen
HMI Functions	Set Point Entry, Alarm Display, History Log
Dry Air System	Twin-stage Silica Gel + Activated Carbon
Dew Point	<-40°C
Ozone Destruct Unit	MnO ₂ Catalytic or Thermal Type
Exhaust Port	Provided
Electrical Supply	230V AC, 50 Hz
Electrical Panel Protection	MCBs, ELCBs, Surge Protection
Safety Features	Emergency Stop, Over-Ozone Alarm, Interlocked Door Switch

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