



NSW-152-DC Dust Test Chamber



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 Dust Test Chamber** –is a high-performance environmental simulation system engineered to meet the stringent

requirements of **IEC 60529 standards** for **IP5X (Dust Protected)** and **IP6X (Dust Tight)** testing.

Designed for advanced research laboratories such as IITs, R&D centers, and industrial quality assurance facilities, the DTC-1 ensures **precise dust simulation, uniform particle distribution, and accurate negative pressure control**, making it ideal for testing enclosures, electrical components, automotive parts, and electronic devices.

Capacity & Structural Compliance

The chamber is engineered to meet strict dimensional, structural, and logistical requirements:

- **Robust Construction:** Ensures high stability without exceeding building load limits
- **Unobstructed Test Area:** Maximizes usable testing space

Advanced Dust Simulation System

Uniform Dust Distribution

- High-efficiency **centrifugal blower with speed control**
- Ensures **homogeneous dust suspension** across entire chamber volume
- Eliminates dead zones for accurate testing

NARANG SCIENTIFIC WORKS PVT. LTD.

(Manufacturers & Exporters)

Address: GI-111, Mayapuri Industrial Area, Phase-II, New Delhi-64

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Fax: 91-11-28112608

Web: www.nsw-india.com

WHO GMP
compliant company



Dust Flow Optimization

- **Integrated dust pre-heating system**
- **Hopper vibration mechanism** prevents clumping
- Ensures continuous and uniform dust fall and circulation

Closed-Loop Circulation

- Fully enclosed system maintaining **constant dust concentration**
- Prevents environmental contamination

Standard-Compliant Filtration

- Built-in **50–75 micron sieve**
- Fully compliant with IEC 60529 Talcum powder specifications

IP6X Vacuum System (Dust-Tight Testing)

The chamber includes a precision-engineered vacuum system for accurate IP6X testing:

- **Two-Stage Ultra-Low Vacuum Pump**
- Maintains stable vacuum for long-duration testing
- **Vacuum Flow Meter with Regulator**
- Ensures precise airflow monitoring and adjustment
- **Extraction Rate:** 40–60 volumes/hour (IEC compliant)
- **Specimen Connectivity:** Flexible hose with dedicated internal port

Control & Automation System

Advanced HMI + PLC Control

- 7" Color Touch Screen Interface
- PLC-based automation for high accuracy
- Real-time parameter monitoring and control

Programmable Test Profiles

- 20 Programs × 20 Segments each
- Enables complex testing cycles (dust agitation + settling)

Data Management

- 4 GB Flash Memory + 512 MB RAM
- Real-Time Clock (RTC) for data logging
- USB port for data export

Remote Monitoring

- Integrated **Web Server & VNC Support**
- Ethernet connectivity for remote access via PC/mobile

User Interface & Security

- **Display:** 7" TFT, 800 × 480 resolution, 64K colors
- **Touch Type:** Resistive (glove-friendly operation)
- **Protection:** IP66-rated front panel
- **Security:** Multi-level password protection
- **Multi-language Interface**

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Construction & Build Quality

Exterior

- 2 mm thick **CRCS (Cold Rolled Carbon Steel)**
- High-quality **powder-coated finish**
- Corrosion-resistant and aesthetically superior

Interior

- **18 SWG Stainless Steel (SS)**
- Smooth brushed finish for durability and easy cleaning
- Resistant to abrasive dust media

Dust Circulation Design

- Specialized **hopper-shaped bottom**
- Ensures continuous dust recirculation and uniform density

Operational Convenience

- **Dust Replacement Port:** Easy refill and removal without dismantling
- **Observation Window:** Tempered glass with manual wiper
- **Port Hole:** 65 mm diameter for cables/sensors
- **Adjustable SS Shelf:** Rod-type design for unobstructed airflow

Electrical & Safety Features

Comprehensive Protection System

- MPCB & MCB for all components
- Phase reversal & single phasing protection
- Over-voltage & under-voltage protection

Signal Protection

- EMI shielding for stable PLC and sensor operation

Power & Utility Requirements

- **Power Supply:** 3 Phase, 415 VAC $\pm 10\%$, 50 Hz
- **Connected Load:** Approx. 4 kW
- **Energy Efficient Design**

BASIC OF DESIGN

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External Construction	2 mm CRCS with powder coating
Internal Construction	18 SWG Stainless Steel
Dust Type	Talcum Powder (as per IEC)
Particle Size Control	50–75 Micron Sieve
Dust Circulation	Centrifugal Blower with speed control
Dust Flow System	Hopper + Vibration + Pre-heating
Vacuum System	Two-stage vacuum pump
Vacuum Rate	40–60 volumes/hour
Control System	PLC with 7" Color Touch HMI
Display Resolution	800 × 480 (WVGA)
Memory	4 GB Flash, 512 MB RAM
Programs Capacity	20 Programs × 20 Segments
Connectivity	USB, Ethernet, VNC, Web Server
Observation Window	Tempered glass with wiper
Port Hole	65 mm diameter
Shelf	Adjustable SS rod-type
Safety Protection	MPCB, MCB, voltage & phase protection
Power Supply	3 Phase, 415 VAC ±10%, 50 Hz
Connected Load	~4 kW
Weight	≤ 2400 kg
Compliance	IP5X & IP6X

MODEL	SIZE(MM) W D H	LTRS
NSW-152-DTC-A	455 x 455 x 710	147
NSW-152-DTC-B	600 x 550 x 750	250
NSW-152-DTC-C	605 x 605 x 910	335
NSW-152-DTC-D	600 x 600 x 1200	450
NSW-152-DTC-E	600 x 650 x 1350	540
NSW-152-DTC-F	750 x 800 x 1000	600

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MODEL	SIZE(MM) W D H	LTRS
NSW-152-DTC-G	800 x 800 x 1200	800
NSW-152- BTC-H	950 x 1000 x 1000	950
NSW-152-DTC-1	1000 x 1000 x 1000	1000
NSW-152-DTC-2	800 x 800 x 1800	1210
NSW-152-DTC-4	1000 x 1000 x 1300	1300
NSW-152-DTC-5	1000 x 1000 x 1500	1500
NSW-152-DTC-6	1600 x 800 x 1570	2000

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