

MERIDIAN

気候シミュレーションテスト

Environmental Testing Chambers & Systems



meridianclimatetest.com

INTRODUCTION



ABOUT US

MERIDIAN specialise in supplying climatic & environmental testing chambers to serve the research & development, scientific and laboratorial industries that requires QA / QC process in their production line.

Thanks to our clients' response and requests, MERIDIAN began its production of temperature & humidity chambers since the beginning of 2019 as an innovative move to **provide climate test chambers** to **South East Asia** and the world.

Other than that MERIDIAN also provides **ISO/IEC 17025** certified calibration services, technical support and rentals for the temperature & humidity chamber.



“Helping engineers worldwide to develop safer, more reliable materials and components.”

WHY CHOOSE US?

With over 20 years of experience in environmental simulation testing, MERIDIAN's engineers and designers can **produce customised testing chambers according to your test requirements**. Our chambers are built with robust materials and components that are reliable and proven quality imported from Germany, France, U.S.A. and Japan. We also comply to the International and National Standards, including, but no limited to; ISO, GB, IEC, ASTM, JIS, DIN and BS.

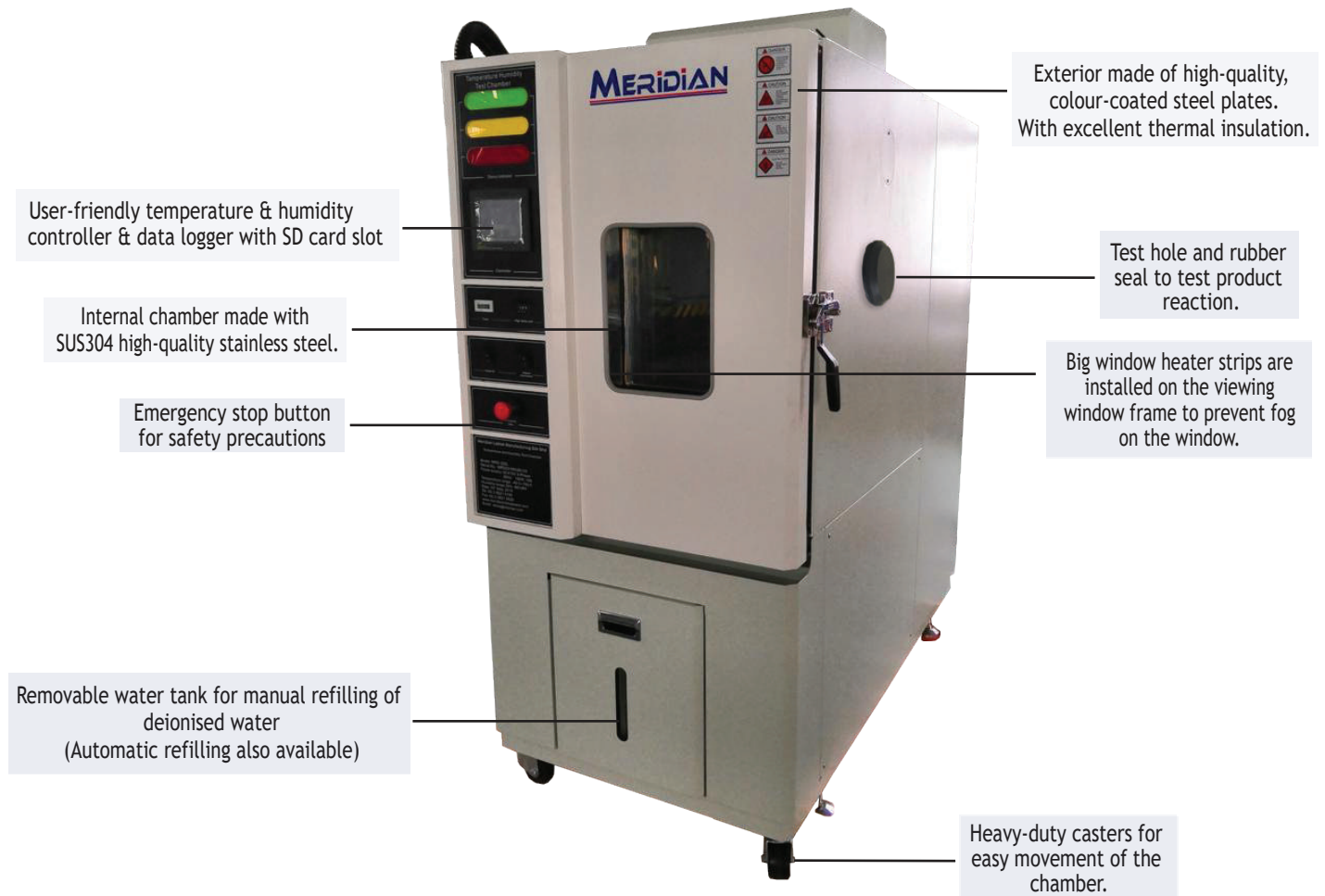
MERIDIAN testing chambers can **simulate natural environmental effects** e.g. temperature, altitude, humidity, etc. to **test various materials' reactions towards heat, cool, dry, wet** and other climatic **endurances** for the QA / QC sector in various industries. While able to provide accurate test results in short and long interval time periods.

DID YOU KNOW?

Environmental testing allows manufacturers to **discover potential flaws** or defects in their test sample or material.

Thus providing ideas on how to **improve the products' quality** to perfection.

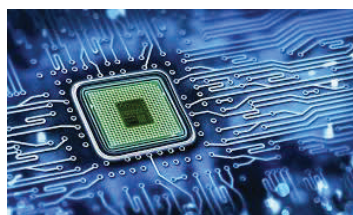
PRODUCT OVERVIEW



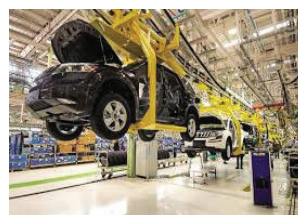
INDUSTRIAL APPLICATION



ELECTRONICS



SEMICONDUCTOR



AUTOMOTIVE



METAL & ALLOYS



AEROSPACE



PLASTICS



MEDICAL



PLASTIC & RUBBER

PRODUCT COMPONENTS

NO.	COMPONENTS	PRODUCTION ORIGIN	REMARKS
1.	Temperature & Humidity Chambers	TEM 1500 produced in Korea	
2.	Compressor	 Tecumseh (France)	
3.	Oil Separator	 USA, ALCO, AC&R or ESK (Germany)	
4.	Pressure Switch	 Danfoss (Denmark)	
5.	Dry Filter	 Danfoss (Denmark)	
6.	Expansion Valve	 Danfoss (Denmark)	
7.	Magnetic Valve	 Castal (Italy)	
8.	Wire Protection Switch	 Schneider	
9.	A/C Contactor	 Schneider	

PRODUCT DETAILS

FLOOR TYPE TEMPERATURE & HUMIDITY CHAMBER



Temperature Humidity Test Chamber, is an environmental chamber that has a conditioning unit that simulates temperature & humidity environments. It is widely used for medical devices, pharmaceuticals, automobiles components, electronics, etc.



Model	MRD-TH-150	MRD-TH-225	MRD-TH-408	MRD-TH-800	MRD-TH-1000
Internal Capacity (L)	150	225	408	800	1000
Internal Dimensions (mm) W*D*H	500 x 500 x 600	600 x 500 x 750	800 x 600 x 850	1,000 x 800 x 1,000	1,000 x 1,000 x 1,000
External Dimensions (mm) W*D*H	750 x 1,500 x 1,720	850 x 1,500 x 1,870	1,050 x 1,600 x 1,970	1,250 x 1,800 x 2,120	1,250 x 2,000 x 2,120

BENCH TOP TEMPERATURE & HUMIDITY CHAMBERS



Model	MRD-TH-40	MRD-TH-100	MRD-TH-64
Internal Capacity (L)	40	100	64
Internal Dimensions (mm) W*D*H	300 x 300 x 400	400 x 500 x 500	400 x 400 x 400
External Dimensions (mm) W*D*H	540 x 1,200 x 900	640 x 1,400 x 1,000	640 x 1,300 x 900

PRODUCT DETAILS

TEMPERATURE, HUMIDITY & VIBRATION TEST CHAMBER

Vibration Test Chamber is an environmental chamber with the capability of producing temperature & humidity conditions with a working vibration table. This is used to improve product reliability and durability by studying how manufactured products or raw materials react towards environmental and climatic exposure.

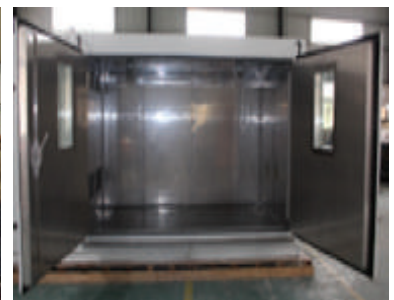


Model	MRD-THS-512	MRD-THS-1000
Internal Capacity (L)	512	1000
Internal Dimensions (mm) W*D*H	800 x 800 x 800	1,000 x 1,000 x 1,000
External Dimensions (mm) W*D*H	Customisable upon request	

WALK-IN TEMPERATURE & HUMIDITY CHAMBER



This **Walk-in Test Chamber** can simulate a wide range of temperature & humidity conditioning environments with the addition of handling larger test components. Widely used for automobiles, IT Equipment or any large item.



Model	MRD-WTH-20,000	*We can customise the walk-in chamber according to specific requirement of application and dimensions.
Internal Capacity (L) W*D*H	Approx. 20m ³	
Internal Dimensions (mm) W*D*H	2,500 x 2,400 x 3,400	

TECHNICAL PARAMETERS

TEMPERATURE & HUMIDITY CHAMBER

PERFORMANCE	
Temperature Range	-20°C / -40°C / -70°C ~ 180°C (customisable upon request)
Temp. Fluctuation	±0.5°C
Temp Deviation	≤ +2°C
Humidity Range	20% RH ~ 98% RH (Lowest 10% RH with Additional Air Dryer)
Humi Fluctuation	±3.0% RH (>75% RH)
Humi Deviation	±5.0%RH (≤75% RH)
Heating Time	≤60mins
Cooling Time	Standard: 1°C/min Fast Change Rate: 3°C/min, 5°C/min, 15°C/min. (Customizable According to Request)
Control Method	Balanced Temperature & Humidity Control Method
MATERIAL	
External	High Quality Colour Coated Metal Sheet
Internal	High Quality Stainless Steel SUS304
Insulation	Hard Urethane Foam + Glass Wool
AIR CIRCULATION CHANNEL	
Heater	Nichrome Electronic Heater. Heater Control Method: PID + SSR Contactless Control
Fan	Centrifugal Fan
Cooling Method	Mechanical Single Stage Refrigeration System, Air Cooled System (For -40°C Above) Cascade Refrigeration System, Air Cooled System (For -70°C)
Compressor	Hermitically Sealed Compressor
Refrigerant	R404A (For -40°C Above) / R404A/R23 (For -70°C)
CONTROLS	
Display	5.7" or 7" colour programmable touchscreen controller
Running Method	Program Running, Fix Running
Setting Method	Touchscreen
Program Capacity	120 patterns. Max. segments: 999 segments; Max. per pattern: 99 times repeat
Display Resolution	Temp: 0.1°C; Time: 0.1 min; Humidity: 0.1% RH
Input	RTD 100
WATER SUPPLY	
Water Supply Method	Water Pump
Water Quality	Deionised water or distilled water, resistance: 500Ωm
Auto Feeding	Available. Feeding water pressure: 0.2 ~ 0.4 MPa
Power Supply	AC 220V (±10%) Single phase +E, 50Hz or AC 380V (±10%) (50 ± 0.5) Hz. 3 Phase +N +E AC 220V (±10%)
Accessories	Test hole: 1 pc (Φ50 or Φ100), specimen holder: 2 sets, power supply cable: 1 pc
Safety Devices	Leakage breaker, emergency stop button, overheat protector with fan and compressor, over-pressure protection compressor, phase error alarm, low water protection

OTHER PRODUCT

AGEING TEST OVEN (INDUSTRIAL OVEN)



Industrial Oven, are specialise equipment that can produce high temperature controlled to simulate different heat conditions for different products testing.

Model no: L-OV series
Internal capacity: 216L, 1000L
Temperature range:
Type 200: RT+10°c~ 200°c
Type 250: RT+10°c~ +250°c
Type 300: RT+10°c ~+300°c

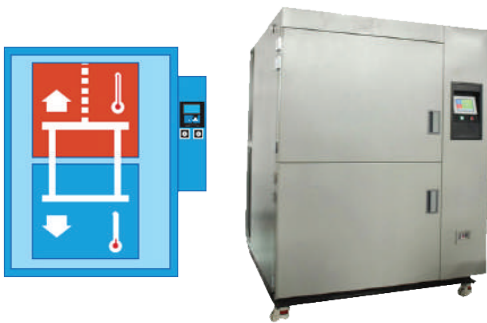
WALK-IN INDUSTRIAL OVEN



Walk-in Industrial Oven is a drying oven and powder coating oven, it can simulate temperature up to 200°c for large components reliable testing.

Model no:L-WOV series
Internal capacity:2m3 to 50m3
Temperature range:
RT+10°c~ 200°c
Controller:Single-point temperature controller, precise PID control.

THERMAL SHOCK TEST CHAMBER -2 ZONE



Thermal Shock Test Chambers are used to test the capaility of material structure or composite materials to withstand the continuous environment changes between extremely high and low temperature during a short time.

Model no:L-TS2 series
Internal capacity:50L,100L,252L, 1000L
Thermal shock temperature range:+60°c~150°c
Pre-heating temperature range:+60°c~200°c
Pre-cooling temperature range:+20°c~-70°c

THERMAL SHOCK TEST CHAMBER -3 ZONE



Model no:L-TS3 series
Internal capacity:50L to 252L
Thermal shock temperature range:-60°c~150°c
Pre-heating temperature range:+60°c~200°c
Pre-cooling temperature range:+60°c~-70°c

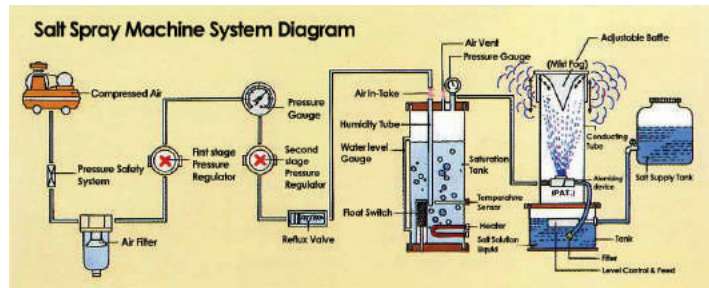
OTHER PRODUCT

SALT SPRAY TEST CHAMBER



Model no:L-SP series
Internal capacity:
108L, 270L, 450L, 1000L
Temperature range:
RT+10°C~ 55°C

Salt Spray Test Chamber are developed and manufactured for testing the corrosion resistance of metal surface finishing, such as paint, rust-preventive oil and treatment agents which are exposed to a fog of salt solution.



ALTITUDE, HYPOBARIC, LOW PRESSURE TEST CHAMBER



Altitude Test Chamber combines with temperature and altitude environments for simultaneous environmental testing.

Model no:L-AT series
Internal capacity:1000L
Temperature range:-70°C~180°C
Pressure range: 101 kPa~1.0 kPa

SAND & DUST TEST CHAMBER



Sand & Dust Test Chamber simulates the dust from the environment to test the enclosure anti-dust ability. It is applicable for lightings, low-voltage electronic compliances, communication devices, instruments, household etc.

Model no:L-DT series
Internal capacity:1000L
Temperature range:
RT+10°C~ 80°C
Controller: Singer-point temperature controller, precise PID control

RAIN & SPRAY TEST CHAMBER



Rain & Spray Test Chamber can simulate rain, water spray, dripping water during storage, transit or operation. It helps to determine the effectiveness of protective covers, cases and seals, etc.

Model no: L-CR series
Internal capacity:500L,1000L
Temperature range: RT+10°C~ 80°C

Accelerated Weathering UV Chamber



MERIDIAN UV chamber can test the effect of sunlight (UV radiation), temperature and humidity on product quality. Usually applied on non-metal materials (plastics, paints, organic coatings).

Model no:MRD-UV series
Internal Dimension :
450 x 1170 x 500
Temperature range:
RT +10°C ~ 70°C(light cycle:
45-80°C; condensation cycle:
40-60°C)

OTHER PRODUCT

MERIDIAN VIBRATION & DROP TEST PRODUCT

Vertical Electromagnetic Vibration Test System



3-Axis Electromagnetic Vibration Test System



Dedicated to high quality, performance, reliability, precision, accuracy, easy operation, and consistency with the test platform for a variety of test specification.

Sweep range:2-4000Hz
Max Displacement: 25/50mm(p-p)
Max Acceleration:0-33/100G

Economic Vibration Test System



Economic Vibration Test System is suitable for laboratory and production line for vibration testing and process testing of the specimen in vertical state.

Model no: MVB 60S series
Sweep range:15-60Hz
Max Displacement: 2.5mm(p-p)
Max Acceleration:14 G
Size of Table:600mm x 500mm
Dimension of Shaker:560mm x 610mm
x 315mm(L x W x H)

Mechanical Vibration Testing System



Mechanical vibration test machine can simulate transportation vibration test and is suitable for electronic and electrical products, parts and components.

Model no:MRV3000 series
Rate peak force: 600kgf
Dimension of platform:
500w x 600Dmm
Max weight tested: 130kg
Frequency range: 5-100Hz
Max acceleration(g): 0-11G(peak)
Max. Rated travel(pk-pk): 0-3.0mm
Testing mode: Random, Sine, Shock
Control type: Closed loop

CUSTOMER REFERENCE

150L Programmable Temperature & Humidity Chamber
 150L Stainless Steel Exterior Temperature & Humidity Chamber



400L Programmable Temperature & Humidity Chamber



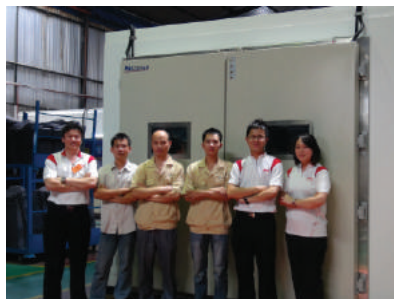
270L Salt Spray Machine



800L Temperature & Humidity with infra-red lamp Chamber



Walk-in Temperature and Humidity Chamber



MERIDIAN UV Accelerated Weathering Chamber



CUSTOMER SERVED



FLEXTRONICS



PHILIPS



Volkswagen



SIEMENS

HONDA
The Power of Dreams



HITACHI
Inspire the Next



➤ Environmental Testing Equipment

- Altitude Test Chamber
- Industrial Oven Ageing Test Oven
- Salt Spray Test Chamber
- Temperature Humidity Test Chamber
- Temperature Humidity Vibration Test Chamber
- Thermal Shock Test Chamber
- Weathering Simulation Test Chamber
- Vibration & Drop Test System

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