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RESOTECH- RAIN CHAMBER

MAKE:-RESOTECH

MODEL NO. RESOTECH-SUNFLIX

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RESONANCE AUTOMATION AND MACHINES

MANUFACTURERS & SUPPLERS

SPECIAL PURPOSE MACHINE, MATERIAL TESTING MACHINE, LEAKAGE TESTING MACHINE, PACKIGING TESTING MACHINE, ENVIRONMENTAL TEST CHAMBER, ASSY. LINE EQUIPMENT, SOLUTION FOR ELECTRONIC AUTOMATION AND PRODUCT DEVELOPMENT, COMPUTERIZED CONTROL MACHINE , PLC HMI SCADA VISUAL BASIC SOFTWARE DEVELOPMENT SOLUTION AND OTHER SERVICES.

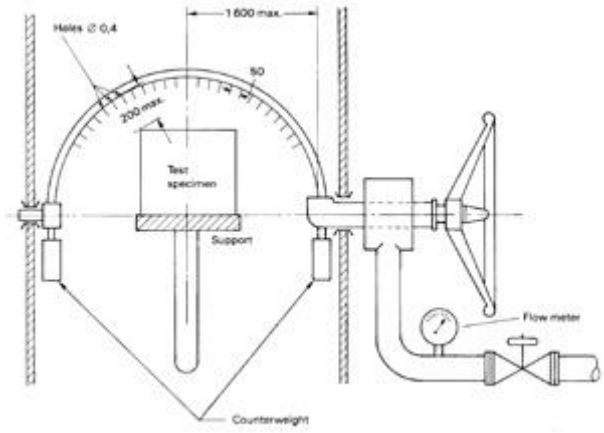
Rain Test Chamber

Want to find a good rain test chamber supplier ? Need the rain test chamber price for your testing samples ? Your company has just developed a new product but unsure about its features and functions. If it's the case with you, now it's is your task to invest in a rain test chamber to test the product.

If you need the rain test chamber specification, You can inquiry to us ! We also have some experience on rain test chamber for vehicle parts test. The developed vehicle parts needs to be tested at various raining conditions in order to be sure about its reliability and quality. The biggest reason of conducting this test is to get a clear idea whether product is ready to be launched in market or not.

Rain Test Chamber is designed according with the standards of IEC 60529-2001; GB 4208-93; GB10485 (Enclosure protection level). It is mainly used for electronic products to do the waterproof test. Such us mobile phones parts, LED, lighting & signal devices, automotive lamp and exterior parts testing work.

Water pump for rain test chambers uses highly pressure stainless steel pump, ensure water pressure and flow of the test cycle, the pump is installed in the side of the IP test device, and both ends of the inlet and outlet to set up the joint, easy to replace and repair. Water tank can be disassembled, The corresponding joint or hose connection is arranged in the water pipe connection.



● Rain test chambers with water pressure and flow rate adjustable. The IP X3, X4 rain test chamber is suitable for external lighting & signal devices & automotive lamp shell protection test.

● Unique sprinkler can stably control the rain quantity and pressure. Pipe's Hole Size: The number of holes 25 pcs; Water Supply Pipe ： ¢ 20mm; Water Flow ：≥1T/h

● There has a custom design solution with France Tecumseh Cooling System, and makes the rain test chamber can makes the testing samples' temperature rising from 4C~5C (Cold Testing) to RT-85°C (Hot Testing)

● Inner case's material is imported steel plates, Shell is made of #304 stainless steel. Water tank uses SUS304 stainless steel, which was installed on side of test devices. The capacity of tank could meet test water.

● Resotech rain test chamber applies for rain spray test for varous types of products. Standard: IEC60529; GB/T 16422.38, ASTM/ISO/ ROHS/GB Certification

Application: Rain testing chambers applied to test the shell's waterproof effect of electronics, automobile and communication, using rainfall simulation to test the product's waterproof performance and assess the product's waterproof performance's loss classification.

● IP X1: Protected against falling water equivalent to 3-5mm rainfall per minute for a duration of 10 minutes. Unit is placed in its normal operating position. IP X2: Protected against falling water when tilted up to 15 degrees – Same as IPX-1 but unit is tested in 4 fixed positions – tilted 15 degrees in each direction from normal operating position.

● IP X3: Protected against spraying water – Water spraying up to 60 degrees from vertical at 10 liters/min at a pressure of 80-100kN/m2 for 5 min. IP X4: Protected against splashing water – Same as IPX-3 but water is sprayed at all angles.

● IP X5: Protected against water jets – Water projected at all angles through a 6.3mm nozzle at a flow rate of 12.5 liters/min at a pressure of 30kN/m2 for 3 minutes from a distance of 3 meters. IP X6: Protected against heavy seas – Water projected at all angles through a 12.5mm nozzle at a flow rate of 100 liters/min at a pressure of 100kN/m2 for 3 minutes from a distance of 3 meters.

● IP X7: Protected against water immersion – Immersion for 30 minutes at a depth of 1 meter. IP X8: Protected against water submersion – The rain spray test chamber is suitable for continual submersion in water under conditions which are identified by the manufacturer.

RESOTECH makes rain and spray testing easier by offering a standard chamber capable of published and OEM proprietary test methods.

The standardized design can be configured for the rain/spray tests you need, eliminating the guesswork in buying a chamber. The system is based on the IP and SAE specification requirements used for electronics, enclosures, and automotive parts.

Our Design

Our system uses multiple control solenoids to vary the water's spray volume/pressure. A holding tank prepares the water to the desired temperature if required. A pump ensures the water is delivered in the proper pressure range. The spray is activated via a programmable controller that sets the test mode and its desired parameters.

Automotive standards JIS D 0203, SAE J575

The SAE specification J2245 is modeled after the JIS D0203. Details about the nozzles, rotating spray arms, and product table are also included. Additionally, drip and car wash tests are also specified. This test standard features spray arms with adjustable pressure/volume output.

- **Heavy splash/shower** S1,S2 Spray room temperature water with 40 nozzles
- **Light spray/rain** R1, R2 Spray room temperature water with two nozzles

Examples of OEM automotive manufacturers' requirements

- Heat the sample to a temperature above boiling, then spray with cold water for about two minutes. Repeat cycle.
- Heat the sample to boiling temperature, then spray with room temperature water for about fifteen minutes. Repeat cycle.

IP Code / IEC Standard 60529 Ingress Protection

- Dripping water (IP 1 and 2)
- Oscillating splash/spray with 'halo' spray arm (IP 3 and 4)
- Ten-foot water jet (IP 5 and 6)
- Car-wash-style water jets at 80°C (IP 9X)
- Rotating test table (required for several tests)

The following resotech rain chamber video demonstrates water spray testing methods that comply with IEC standard 60529 (Ingress Protection or IP/IPX).

Features for Rain & Spray Test Chambers

- Stationary product shelf (a rotating shelf is optional)
- Water pressure regulators, gauges, and flow meters
- Special high-volume floor drain system to rapidly drain water out of the chamber
- Viewing window with wiper

Applicable test methods

- IP Code / IEC standard 60529 "Ingress Protection"
- JSA JIS (Japanese Industrial Standard) D 0203 "Method of Moisture, Rain and Spray Test for Automobile Parts"
- SAE (Society of Automotive Engineers) J2245 "Recommended Practice for Splash and Spray Evaluation"
- SAE J575 "Test Methods and Equipment for Lighting Devices and Components"

Optional/additional test capabilities:

- Temperature/humidity controlled chamber: Includes -20 to 150°C and 20 to 95%RH capabilities
- Water recirculation: Allows re-use of the treated rain water

- Water conditioning: Allows the water to be cooled (5 to 20°C) prior to spray
- High pressure spray: Adds capability to meet car wash test requirement
- Drip grid: Adds capability to meet drip test requirement
- Rotating table: Rotates the sample for full exposure to spray

Model Description	WE-LY- 500C	WE-LY- 1000C
Internal Dimension WxHxD (mm)	800*800*800	1000*1000*1000
External Dimension WxHxD (mm)	1400*950*1710	1600*1150*1910
Sprya Nozzle	Φ0.4mm, Φ0.5mm	Φ0.5mm, Φ0.8mm
Rotating Table	Diameter 500mm	Diameter 600mm
Table Height	400 mm, Samples Load: 5 Kgs	400 mm, Max Load: 10 Kgs
Gross Weight (Kgs)	205 Kgs	285 Kgs
Voltage (Power)	AC 1Ψ 220V 50Hz	AC 3Ψ 380V 60Hz
Rain of Pipe-Swing Test	IP x3 IP x4 Swing Pipe: RT~+28°C	Flow:0.07L/min Per Nozzle
Swing Pipe	Radius 300mm	Radius 500mm
Water Flow Speed	0.05~0.07L/min	0.05~0.08L/min
Rotating Speed of Rotating-Plate	1~5 RPM /Adjustable	1~5 RPM /Adjustable
Test Standard	JIS, ISO, IEC60529, DIN40050,	GB2423, GB4208 Standard

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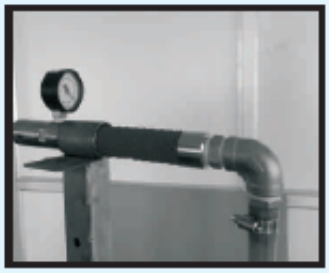
OSCILLATING TUBE *Test*

JET *Water Test*



JIS *Nozzle Test*

DRIP *Test*

SHOWER *Test*

UDC 629.113.01/.06:620.193.19

JIS

JAPANESE INDUSTRIAL STANDARD

Method of moisture, rain and spray test for automobile parts

JIS D 0203–1994

Translated and Published

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Japanese Standards Association

Printed in Japan

In the event of any doubt arising,
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Japanese Standards Association
4-1-24, Akasaka, Minato-ku,
Tokyo, JAPAN 107
TEL. 03-3583-8002
FAX. 03-3583-0462

Errata are also provided to subscribers of JIS (English edition) in *Monthly Information*.

UDC 629. 113. 01/. 06: 620. 193. 19

JAPANESE INDUSTRIAL STANDARD J I S

Method of moisture, rain and spray test for automobile parts

D 0203-1994

1. Scope This Japanese Industrial Standard specifies the methods of moisture resistance test and waterproof tests for automobile parts (hereafter referred to as "parts"), with the exception of the following tests:

Table 2

Symbol of test	Water pressure at rain or spray nozzle (gauge pressure) MPa	Dimension of rain or spray nozzle mm	Number of rain or spray nozzles	Water flow rate *l*/min (min.)	Water temperature °C	Moisture condition	Temperature difference(1) between the sample and water °C	Test time	Test procedures
M1	—	—	—	—	Approx. 32	Atmosphere of air, droplet and water vapor mixture	—	8 h	Rotate a sample around the horizontal axis at rate of 1.5 min^{-1}.
M2	—	—	—	—	Approx. 60		—	1 h	—
R1	0.01	See Fig. 1	2	1.9	Ordinary temperature	—	—	10 min	See Remarks 1.
R2	0.03	See Fig. 1	2	3.2	Ordinary temperature	—	—	10 min	See Remarks 1.
S1	0.10	ϕ1.2	40	24.5	Ordinary temperature	—	—	30 min	See Remarks 1.
S2	0.30	ϕ1.2	40	39.2	Ordinary temperature	—	—	1 h	See Remarks 1.
D1	—	—	—	—	See Remarks 2.	—	—	5 min	Submerge a sample into water as far as its upper surface.
D2	—	—	—	—	—	—	Approx. 30	10 min	Submerge a sample into water to a depth of 100 mm from its upper surface.
D3	—	—	—	—	—	—	Approx. 50	10 min	Submerge a sample into water to a depth of 100 mm from its upper surface.

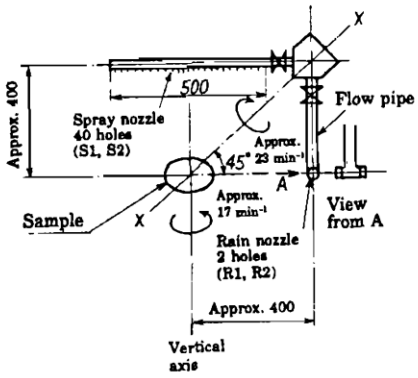
Note (1) Temperature difference means that water temperature is higher than that of the sample.

Remarks 1. With regard to the rain test and spray test, the samples shall be mounted at a distance of approximately 400 mm from the flow pipe having rain nozzle or spray nozzle as shown in the following Fig. 1. And then, the flow pipe shall be rotated around the axis *X*-*X* at the rate of approximately 23 min^{-1}.

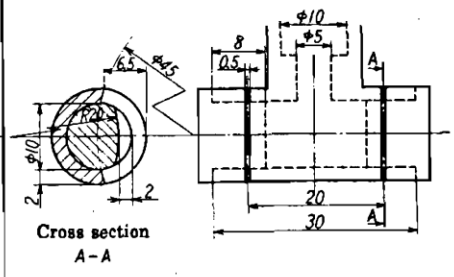
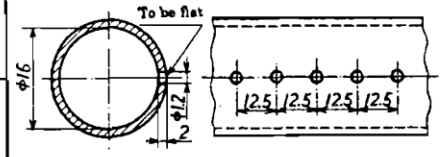
Besides, the samples shall be rotated around the vertical axis at the rate of approximately 17 min^{-1}. However, this procedure of rotating the samples may be omitted by agreement between the purchaser and supplier.

3. Testing method Using prescribed test equipment, install the sample in normal operating condition and conduct tests on conditions specified in Table 2 to examine humidity resistance, waterproof, drainage or change in overall function.

Fig. 1



Unit: mm

Designation	Shape and dimension of rain or spray nozzle
R1	
R2	
S1	
S2	

Remarks 2. In the case of dip test D1, the water temperature shall be lower than at least 10°C, as compared with the temperature of the sample.

3. In the case of moisture test, a sealed case shall be used.

4. In case where it is necessary, test may be repeated a number of times as agreed upon by the purchaser and supplier, based on the cycle of the test time specified in Table 2.

5. In the case of ones having air vents or drain holes in its structure, tests may be carried out with holes closed, if necessary.

D 0203-1994
Edition 2

Japanese Text

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