

WVTR-W3 Water Vapor Transmission Rate Tester

Brief Introduction

WVTR-W3 Water Vapor Transmission Rate Tester is based on the cup method, professional, high Efficiency and intelligent WVTR Test System, and is professionally applicable to the water vapor transmission rate test of plastic films, composite films, sheets and other materials used in medical and construction industry. By testing the water vapor transmission rate, the technical index of the materials could be controlled to meet the requirements for production.



Technical Features

Advanced Technology

- ◆ Support dual test modes of desiccant method and water method
- ◆ Equipped with high-resolution imported balance, which significantly improves the sensitivity and stability of system testing
- ◆ Using a new generation of circular structure test cavity design, making the temperature and humidity distribution in the test cavity more uniform
- ◆ Wide range and high-precision of automatic temperature and humidity control to support various combinations of non-standard test conditions
- ◆ Standard air velocity to prevent the humidity difference spread which ensures the accuracy of the test
- ◆ Independent research and development standard periodically weighing method and auto zero before each weighing guarantee the accuracy and uniformity of the testing

data

- ◆ Equipped with fast access calibration ports for temperature and humidity which is convenient to the user
- ◆ Reference film or standard weight for fast and accurate calibration
- ◆ The precise mechanical structure design not only ensures the ultra-high precision of the system, but also greatly improves the detection efficiency

Advanced Configuration

- ◆ 11.6-inch PAD with intelligent data processing functions, providing users with a comfortable and smooth operating experience
- ◆ Windows-based operation interface, convenient for user operation and fast learning
- ◆ The whole test process is automatically recorded, and the process data can be reproduced
- ◆ Powerful curve chart analysis function, convenient for comparison test and analysis
- ◆ Support multi-format storage of test data, convenient for data import and export
- ◆ Powerful functions such as window display, curve overlay pair analysis, test report customization, raw data export, printing, seamless connection with Office software, etc.
- ◆ Equipped with data traceability, which can realize functions such as multi-level authority management, audit trail, electronic signature, etc., which meets the requirements of GMP (optional)
- ◆ Provide professional customization services to meet the individual needs of users in fixtures, software, etc.
- ◆ Free software upgrade service for life

Test Principle

Under a certain test temperature, a constant humidity difference is generated between two sides of the test specimen. The water vapor permeates through the specimen and into the dry side. By measuring the weight changes of the test dish in different time, water vapor transmission rate and other parameters can be obtained.

Applications

Basic Applications	Films	Plastic films, plastic composite films, paper-plastic composite films, geomembranes, coextruded films, aluminized films, aluminum foils, aluminum foil composite films and many other film materials
	Sheeting	Engineering plastics, rubber, waterproof building materials and thermal insulation materials, e.g. PP, PVC, PVDC and nylon
	Textiles and Nonwovens	Textiles and non-woven materials
	Paper and Paper Board	Paper and paper board
Extended	Inverted Cup	Mount film or sheeting in test dish, cover upper

Applications	Method	surface of specimen with distilled water, and make the lower side in certain humidity. Generate a constant humidity difference between two sides; water vapor permeates through specimen and measure weight changes in different time to obtain the water vapor transmission rate. NOTE: inverted cups are required
	Artificial skin	Artificial skin needs a certain degree of water permeability to ensure good breathing performance after implantation in humans or animals. This system can be used to test the moisture permeability of artificial skin
	cosmetic	moisturizing properties of cosmetics (such as facial masks, wound dressings)
	Medical supplies and accessories	medical supplies and auxiliary materials, such as water vapor transmission rate test of plasters, sterile wound care masks, beauty masks, scar stickers, etc.
	Solar Back-sheets	solar back-sheets and OLED packaging materials
	LCD Monitor Films	LCD monitor films
	Paint Film	Water resistance test of various paint films
	Biodegradable film	Water resistance test of various biodegradable films, such as starch-based packaging films, etc.

Technical Specifications

Item	WVTR-W3
Test Range	0.1 ~ 10,000 g/m ² ·24h (water method) 0.1 ~ 10,000 g/m ² ·24h (desiccant Method)
Number of Specimens	1 ~ 3 (Data are independent)
Resolution of WVTR	0.01 g/m ² ·24h
Resolution of Balance	0.0001 g (Customizable)

Test Temperature	15 °C ~ 55 °C ±0.5°C (standard)
Test Humidity	10%RH ~ 98%RH ±2%RH (Standard 90%RH)
Air Velocity	0.5 ~ 2.5 m/s (customization is available)
Specimen Thickness	≤3 mm (customization is available)
Test Area	33 cm ² X 3
Specimen Size	Φ74 mm
Gas Supply	Air
Gas Supply Pressure	0.6 MPa
Port Size	Φ6 mm PU tubing
Power Supply	220VAC 50Hz / 120VAC 60Hz
Instrument Dimension	660 mm (L) x 480 mm (W) x 525 mm (H)
Net Weight	70 kg

Standards

GB 1037, GB/T 16928, ASTM E96, ASTM D1653, YY/T0471, TAPPI T464, ISO 2528, DIN 53122-1, JIS Z0208, YBB 00092003

Configuration

Standard Configuration	Instrument, Professional Software, Test Dishes, Desiccant Tube, Automatic Moisture Filter, Standard Weight, Round Sample Cutter, Communication Cable and Valve Set
Optional Parts	Reference Film, Air compressor and Desiccant

Note: 1.The gas supply port of the instrument is Φ6 mm PU Tubing;
2. Customers will need to prepare for gas supply and distilled water.

Technical specifications are subject to change without further notice. Please visit our website at www.horizontester.com for latest information.