

PERME® W3/031 Water Vapor Transmission Rate Tester

Professional, High-end and Intelligent WVTR Tester

Professional

This instrument is based on the cup method, and is professionally applicable to the water vapor transmission rate test of film specimens. It is equipped with three individual test dishes and the testing process is completely automatic and conforms to international standards.



- Standard periodically weighing method and auto zero before each weighing guarantee the accuracy and uniformity of the testing data
- Wide range and high-precision of automatic temperature and humidity control to support various combinations of non-standard test conditions
- Standard air velocity enables constant humidity difference between two sides of test dishes
- Convenient fast-access calibration ports for temperature and humidity
- Reference film or standard weight for fast and accurate calibration

High-end

W3/031 system adopts Labthink's latest patent-design mechanical structure to get precision test data during weighing process. It also utilizes the embedded computer control system that provides a better performance than traditional single chip system.

- Mechanical Weighing System ensures accurate and stable test data
- Embedded computer control system provides safer and more reliable data management as well as test operation
- The system can be easily operated by a standard LCD monitor, a keyboard and a mouse; without requiring a PC
- The instrument is equipped with four USB ports and dual Internet ports for convenient input, output, and data transfer

Intelligent

The instrument is equipped with the latest operating software, with user-friendly operating interface and intelligent data management functions. It also supports Lystem™ Lab Data Sharing System, which ensures uniform management of test results and test reports.

- Intelligent reminding of sensor calibration
- Convenient Embedded help document
- English or Chinese operating language
- Multi-level account control for better data management and protection
- Saves detailed data of every test and provides various patterns of test reports
- One time value input and the system automatically gives data comparison after each test
- Calibration data recovery function to reduce mistaken operation affects
- Supports Lystem™ Lab Data Sharing System for better data management

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.

This test instrument conforms to the following standards:

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

Applications

This instrument is applicable to the determination of water vapor transmission rate of:

Basic Applications	Films	Including plastic films, plastic composite films, paper-plastic composite films, geomembranes, coextruded films, aluminized films, aluminum foils, aluminum foil composite films, breathable waterproof films and many others
	Sheeting	Including engineering plastics, rubber, waterproof building materials and thermal insulation materials, e.g. PP, PVC, PVDC and nylon
	Paper and Paper Board	Including paper and paper board
	Textiles and Nonwovens	Including textiles and nonwovens
Extended Applications	Inverted Cup Method	Mount film or sheeting in test dish, cover upper 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
	Solar Back-sheets	Including solar back-sheets and OLED packaging materials
	LCD Monitor Films	Including LCD monitor films
	Aseptic Wound Protecting Films and Face Masks	Including aseptic wound protecting films, face masks and protective clothing materials

Technical Specifications

Specifications	Film Test
Test Range	0.1 ~ 10,000 g/m ² ·24h (standard)
Number of Specimens	1~3 with independent test results
Accuracy	0.01 g/m ² ·24h
Resolution	0.0001g

Temperature Range	15 °C ~ 55 °C (standard)
Temperature Accuracy	±0.1 °C (standard)
Humidity Range	10% RH ~ 98% RH
Humidity Accuracy	±1% RH
Air Velocity	0.5 ~ 2.5 m/s (customization available)
Test Area	33 cm ²
Specimen Thickness	≤ 3 mm (customization available)
Specimen Size	Φ74 mm
Test Chamber Size	27 L
Gas Supply	Air
Gas Supply Pressure	0.6 MPa
Port Size	Φ4 mm PU Tubing
Instrument Dimension	580 mm (L) x 680 mm (W) x 470 mm (H)
Power Supply	AC (85 ~ 264)V (47 ~ 63)Hz
Net Weight	83 kg

Configurations

Standard Configurations	Mainframe, LCD Monitor, Keyboard, Mouse, Test Dishes, Desiccant Tube, Automatic Moisture Filter, Standard Weight, Round Sample Cutter, Valve Set and Professional Software.
Optional Parts	Reference Film, Air compressor, Desiccant, Printer (compatible with PCL3) and Lystem™ Lab Data Sharing System.
Note	1. The gas supply port of the instrument is Φ4 mm PU tubing; 2. Customers will need to prepare for gas supply and distilled water.

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