PERME® W3/030 Water Vapor Transmission Rate Tester

W3/030 Water Vapor Transmission Rate Tester is based on the cup method, 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.

Professional Technology

- Standard periodically weighing method and auto zero before each weighing guarantee the accuracy and uniformity of the testing data
- 3 specimens could be tested simultaneously and the test dishes are lifted and lowered by the gas cylinder which ensures the reliability of the test
- Standard air velocity to prevent the humidity difference spread which ensures the accuracy of the test
- Wide range and high-precision of automatic temperature and humidity control to support various combinations of non-standard test conditions
- Equipped with fast access calibration ports for temperature and humidity which is convenient to the users
- Wide range power input is available
- Universal RS232 communication port is convenient for the data export and transmission
- Reference film or standard weight for fast and accurate calibration
- Supports Lystem™ Lab Data Sharing System for uniform and systematic 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 water-proof films and many other film materials
	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 Protection 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
Accuracy	0.01 g/m^2·24h
Resolution	0.001g
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 is available)
Test Area	33 cm^2 x 3
Specimen Thickness	≤ 3 mm (customization is available)
Specimen Size	Φ74 mm
Test Chamber Size	15 L
Gas Supply	Air
Gas Supply Pressure	0.6 MPa
Port Size	Φ4 mm PU Tubing
Instrument Dimension	695 mm (L) x 555 mm (W) x 390 mm (H)
Power Supply	220VAC 50Hz / 120VAC 60Hz
Net Weight	76 kg

Configurations

Standard Configurations	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 Φ4 mm PU tubing;
	2. Customers will need to prepare for gas supply and distilled water.