

WATER VAPOR TRANSMISSION RATE



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

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

Basic applications	
Films	Including plastic films, plastic composite films, paper-plastic composite films, geomembranes, coextruded films, aluminized films, aluminum foils, aluminum composite films, breathable water-proof films and many other film materials
Sheeting	Including engineering plastics, rubber, building materials and many others, e.g. PP, PVC and PVDC
Paper and Paper Board	Including paper and paper board, e.g. aluminum foil paper for cigarette packages and Tetra Pak materials
Textiles and nonwovens	Including textiles and non-woven materials, e.g. waterproof breathable fabric, non-woven fabric for diapers and hygienic products

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
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

Test range	0.1 ~ 10,000 g/m ² ·24h (standard)
Number of specimen	1 ~ 3 with independent test results
Test accuracy	0.01 g/m ² ·24h
Resolution	0.0001 g
Temperature range	15 °C ~ 55 °C (Standard)
Temperature accuracy	±0.1 °C (Standard)
Humidity Range	10%RH ~ 98%RH (standard is 90%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 is available for other thickness)
Specimen size	Ø74mm
Volume of test chamber	27L
Gas supply	Air
Gas supply pressure	0.6 MPa
Port Size	Ø 4 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 4 mm PU tubing; 2. Customers will need to prepare for gas supply and distilled water