

# 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 high resolution sensor, whose test resolution is 0.0001g. The sensor also provides excellent test sensitivity

- 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
- Automatic reset before weighing ensures accurate weighing data
- Gas cylinder lifting structure design and periodically weighing method to reduce system errors
- Convenient fast-access calibration ports for temperature and humidity
- Reference film or standard weight for fast and accurate calibration

## High efficiency

W3/060 system adopts the precision design of round dish rack which is equipped with 6 test dishes and supports 6 different specimens to test individually at one operation. It can be also connected with 9 satellite bases together to accomplish up to 60 tests at the same time.

- Precision design with high test efficiency and ultra-high system accuracy
- 6 distinct or equivalent specimens can be tested individually with independent test results at one operation
- The system can be easily connected to a maximum of 10 instruments to accomplish up to 60 tests at the same time

## 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
Artificial Skin	Artificial skin has to meet standard requirements for water vapor transmission rate to ensure better breath performance. This instrument can be used to test water vapor permeability of artificial skin
Medical Products and Accessories	Including plasters, aseptic wound protecting films, face masks and scar sticks
Solar Back-Sheets	Including solar back-sheets
LCD Monitor Films	Including LCD monitor films
Paint Films	Test water vapor permeability of various sorts of paint films
Cosmetics	Test water vapor permeability of cosmetics
Biodegradable Films	Test water vapor permeability of various sorts of biodegradable films, e.g. starch-based packaging films

## TECHNICAL SPECIFICATIONS

Test range	0.1 ~ 10,000 g/m <sup>2</sup> ·24h (standard)
Number of specimen	1 ~ 6 with independent test results
Test accuracy	0.01 g/m <sup>2</sup> ·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 <sup>2</sup>
Specimen Thickness	≤ 3 mm (customization is available for other thickness)
Specimen size	Ø74mm
Volume of test chamber	35L
Gas supply	Air
Gas supply pressure	0.6 MPa
Port Size	Ø 6 mm PU Tubing
Instrument dimension	660 mm (L) x 480 mm (W) x 525 mm (H)
Power Supply	AC220V 50Hz
Net weight	70 kg

## CONFIGURATIONS

Standard configurations	Mainframe, Professional Software, Test Dishes, Desiccant Tube, Automatic Moisture Filter, Calibration Weight, Communication Cable, Round Sample Cutter and Valve Set
Optional Parts	Satellite Base, Reference Film, Air compressor and Desiccant
Note	1. The gas supply port of the instrument is 6 mm PU tubing; 2. Customers will need to prepare for gas supply and distilled water.