PERME® W3/062 Water Vapor Transmission Rate Test System

Professional, High Efficiency and Intelligent WVTR Test System

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 0.1g/m2 • 24h. The sensor also provides excellent test sensitivity.

- Both water method and desiccant method can be used
- 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

W3/062 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

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.

- Based on the user-friendly Windows operating interface for easy operation
- Saves test data in different formats for convenient data transfer
- Intelligent historical data searching, comparing, analyzing and printing functions
- Supports Lystem™ Lab Data Sharing System for uniform and systematic management of test results and test reports

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. The humidity of the test chamber for water method is lower, while the humidity of the test chamber for desiccant method is higher.

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 and building materials, 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	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

Specifications	Film Test
Test Range	0.1 ~ 10,000 g/m^2·24h (Water Method)
	0.1 ~ 2,500 g/m^2·24h (Desiccant Method)
Number of Specimens	1~6 with independent test results
Accuracy	0.01 g/m^2·24h
Resolution	0.001 g (Customization Available)
Temperature Range	15 °C~ 55 °C (standard)
Temperature Accuracy	±0.1 °C (standard)
Humidity Range	Water Method: 90%RH~ 70%RH [Note1]

	Desiccant Method: 10%RH~98%RH[Note2]
Humidity Accuracy	±1%RH
Air Velocity	0.5~ 2.5 m/s (Customization Available)
Specimen Thickness	≤ 3 mm (Customization Available)
Test Area	33 cm^2
Specimen Size	Φ74 mm
Test Chamber Size	45 L
Gas Supply	Air
Gas Supply Pressure	0.6 MPa
Port Size	Φ6 mm PU tubing
Instrument Dimension	660 mm (L) x 580 mm (W) x 580 mm (H)
Power Supply	220VAC 50Hz / 120VAC 60Hz
Net Weight	80 kg

Note1: Herein the "Humidity" means the humidity difference between the two sides of the film specimen. The humidity in the test chamber is 10%~30%RH accordingly.

Note2: Herein the "Humidity" means the humidity difference between the two sides of the film specimen. The humidity in the test chamber is 10%RH-98%RH when the temperature is 15 to 40 °C, 10%RH-90%RH when the temperature is 45 °C, 10%RH-80%RH when the temperature is 50 °C, 10%RH-70%RH when the temperature is 55 °C.

Configurations

Standard Configurations	Instrument, Computer, Professional Software, Test Dishes, Desiccant Tube, Humidity Generator, Calibration Weight, Communication Cable, 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 Φ6 mm PU tubing; 2. Customers will need to prepare for gas supply and distilled water.

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