

WVTR-2101 **Water Vapor Permeability Tester**



Application

WVTR-2101 is based on the infrared sensor method and available for the water vapor permeability test of flexible films, sheeting and packages. It can test 3 specimens in one operation with independent results.

Films:

Plastic films, aluminum foil, aluminized films, plastic composite films, paper-plastic composite films, coextruded films, aluminum foil composite films and many others.

Packages:

Plastic, rubber, paper, paper-plastic composite, glass and metal packages, e.g. red wine bottles, blister, various plastic bottles, Coke bottles, peanut oil packages, Tetra Pak materials, vacuum bags, metal three-piece cans, plastic packages for cosmetic, soft tubes for toothpaste, jelly and yogurt cups.

Features

- Infrared sensor method
- Patent technology
- Film and package test
- 3 specimens test simultaneously and independently

- One-button test, test automatically in whole process
- Multiple test modes optional
- Data curves display
- Computer control
- Digital flow adjustment
- 3 Chambers with 3 temperature sensors
- Environment temperature and humidity sensor inside
- Chambers water bath technology
- Unit based on embedded system, 24bit Δ - Σ AD
- Pressure, ppm water sensor and temperature overload protection
- Traceable reference film calibration
- Supports DSM system (DSM, lab data management system)

Principles

Film:

The specimen is clamped between the upper and lower chamber, the upper chamber is purged by high humidity nitrogen stream, and the other side of specimen, lower chamber is purged by a stream of dry nitrogen, due to the effect of water concentration gradient at two sides of the specimen, water molecules will permeate through the specimen into the dry nitrogen side, penetrated water molecules will be carried to the infrared sensor which generates the proportional signal, so water vapor transmission rate will be obtained by calculating the sensor signal.

Package:

The package is mounted on the lower chamber, the outside of the package is specified relative humidity, the inside of the package is purged by a dry nitrogen stream, water vapor will permeate through the wall into the inside of the package, penetrated water molecules will be carried to the infrared sensor which generates the proportional signal, so water vapor transmission rate will be obtained by calculating the sensor signal.

Technical indexes

Test range:

Film: 0.005-42 g/m²·24h (Standard)

0.05-1000 g/m²·24h (Optional)

Resolution: 0.001 g/m²·24h

Package: (optional)

0.0001~0.3 g/pkg·d

Resolution: 0.00001g/pkg·d

Specimen amount: 3 specimens, independent

Temperature range: 5C – 95C

Temperature accuracy: ±0.1C

Humidity range: 0%RH,35%RH-90%RH,100%RH, standard condition 90%RH

Humidity accuracy: ±1%RH

Test area: 50cm²

Specimen size:

Film: size: ≥150mm * 94mm

Thickness: less 5mm

Package:

Max size: D120mm * 400mm

Carrier gas: 99.999% Nitrogen

Carrier flow: 0~200 ml/min

Gas interface: 1/8inch

Power supply: AC 220V 50Hz

Dimension: 730 mm * 590 mm * 350mm

Net weight: 56kg

Standard

ISO 15106-3, GB/T 21529, DIN 53122-2, YBB 00092003

Configuration

Delivery: Main unit, computer, W-TRANS software, temperature controller, tank regulator, PCIE card, communication cable, sample cutter, vacuum grease.

Optional: Package fixtures, reference film, vacuum grease, sample cutter, DSM system.

Note: Specifications are subject to change without prior notice.