

# W401 2.0 Water Vapor Permeability Analyzer- Infrared method



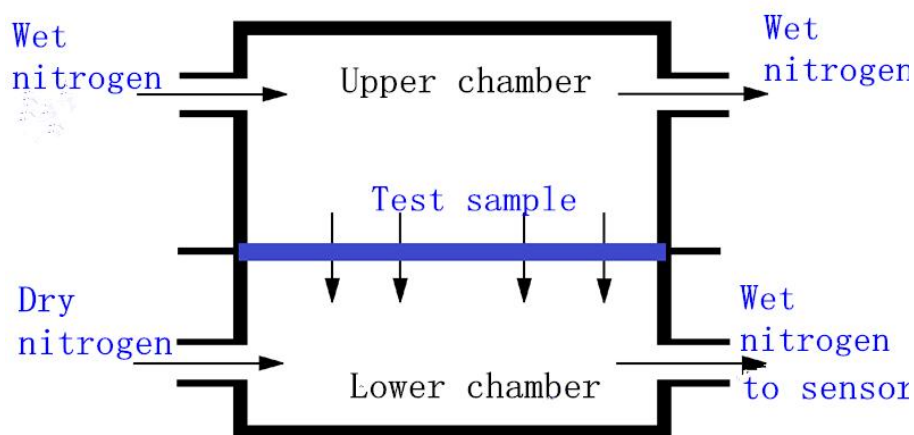
## Introduction

W401 2.0 Water Vapor Permeability Analyzer is designed and manufactured according to GB/T 26253 standard, based on the test principle of infrared moisture analysis sensor, used to test the water vapor transmission rate (amount) of samples under certain conditions, and is often used for evaluating Barrier properties of packaging materials.

W401 2.0 is a high-precision instrument that upgrades the overall technology and appearance of the W401 series, with a resolution of up to 0.0001 g/(m<sup>2</sup>·24h). Suitable for plastic film, composite film, sheet, metal foil and other sheet samples; customizable fixtures are suitable for packaging containers, such as bottles, bags, bowls and other packaging items. It can also be applied to samples such as solar backplanes, LCD screen films, and medical patches.

## Test principle

The W401 2.0 Water Vapor Permeability Analyzer uses the principle of infrared method. The pre-treated sample is fixed in the middle of the test chamber, and the test chamber is divided into high humidity side and low wet side. Compressed air flows on one side of the film and dry nitrogen (carrier gas) flows at a fixed flow rate on the other side. Due to the presence of a humidity gradient, water vapor penetrates from the high-humidity side to the low-humidity side, and the water vapor through the sample is carried to the infrared sensor by flowing dry nitrogen. Parameters such as the water vapor transmittance of the sample are obtained from the electrical signal output by the sensor.



## Working principle diagram

**Standard**

ASTM F1249, BS EN ISO 15106-2, JIS K7129, GB/T 26253, YBB 00092003

**Specification**

Item	Technical parameters
Test range	0.002~100 g/(m <sup>2</sup> ·24h)
Test precision	0.0001 g/(m <sup>2</sup> ·24h)
Temperature	15~45°C
Temperature accuracy	±0.1°C
Humidity range	(5~90)%RH, 100%RH
Humidity	±2%RH
Test area	50.24 cm <sup>2</sup>
Sample size	Φ100 mm
Sample thickness	≤3 mm
Number of sample	1 Piece
Carrier gas	99.999% N <sub>2</sub> (user provide)
Carrier pressure	≥0.1 MPa
Carrier gas flow	5~100 mL/min
Pneumatic pressure	≥0.3 MPa
Power	450 W
Power supply	AC 220 V, 50 Hz



## Features

### ◆ **Patented core technology, efficient and accurate testing**

High-precision original imported infrared sensor, high sensitivity, with ultra-high stability and ultra-low failure rate, resolution of 0.001 g / (m<sup>2</sup> · 24h).

New pneumatic control system, automatic fixture one-button lock sample, convenient and labor-saving, superior sealing performance.

### ◆ **Precise control of temperature and humidity**

Temperature control; the use of international advanced electromagnetic temperature control technology, automatic control of temperature rise and fall, temperature control accuracy of 0.1 °C.

Humidity control: dual airflow (dry and wet) humidity control, stable humidity, high precision, and humidity accurate to ±2%RH.

### ◆ **Meet the needs of high-throughput, wide range and high-applicability testing**

Equipped with a single chamber, which is small and flexible, and the test efficiency is high.

Measuring range of 0.002~500 g/(m<sup>2</sup>·24h), wide range, to meet the test needs of high, medium and low barrier materials, plus suitable accessories, can measure the water vapor transmission of bottles, bags, bowls and other containers.

### ◆ **Excellent shape, convenient control, real-time visualization of curves**

The host is embedded with a 11.6-inch high-resolution color LCD screen, which has a clear view, sensitive control and easy to operate.

The instrument is fully automatic operation, one-button test, automatic judgment, automatic shutdown.

Real-time display of transmission - time, temperature - time, humidity - time, flow - time, voltage - time five sets of curves, curves support preview hidden function.

### ◆ **Intelligent operating system, global certification**

Self-developed intelligent operating system, modular illustration, fashion color matching, humanized setting, intuitive and convenient operation.



According to GMP appendix computer system design, test process parameters are flexibly set to meet different standard requirements.

With the function of audit trail (log trace, test trace) to meet the needs of data traceability. System operation permissions can be set at different levels.

Intelligent statistical analysis, support multiple data standard deviation analysis. At the same time, the system can be expanded, such as access to the laboratory LIMS system.

Personalized test reports are set on demand, support a variety of formats of data output, support electronic signature function, online submission of audit report function.

Global strength certification, can be set in Both Chinese and English languages as needed.

#### ◆ **Offline or in-line detection**

The instrument comes with its own operating system, which can be tested independently from the computer, and the data is automatically processed. The instrument is equipped with a computer interface, and can also be connected to a computer for online testing.

#### ◆ **Professional calibration service, accurate and reliable data**

Our company has approved and issued by the "General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China": water vapor transmission rate, "National Standard Material Classification Certificate" and "People's Republic of China Manufacturing Measuring Instrument License", the standard number (GBW (E)130543 / GBW(E)130544). The instrument is calibrated and verified by the national standard material independently developed to ensure the accuracy, versatility and authority of the test data.

#### ◆ **Laboratory intelligent IoT platform**

The instrument can be connected to the IoT platform to achieve digital network management.






Remotely log in to the IoT platform and authorize access to the instrument software interface, which can realize functions such as managing experimental data and remotely diagnosing and solving faults.

Customers can download the required instrument materials, documents, and operation



videos on the platform.

## Application

	<p>Film</p>	<p>Water vapor transmittance test of various plastic films (PP/PET/PE/PVC/BOPP/PP, etc.), plastic composite films, paper-plastic composite films, metal composite films, coextruded films, aluminized films, degradable packaging films (PLA/PBAT/PBS, etc.) and other film-like materials.</p>
	<p>Sheet</p>	<p>Water vapor transmittance test of solid pharmaceutical hard sheets (PP/PVC/PTP, etc.), metal composite sheets, rubber sheets and other flakes.</p>
	<p>Paper, cardboard and its composites</p>	<p>Water vapor transmittance test of coated paper, silicone paper, cigarette bag aluminized paper, paper aluminum-plastic composite sheet and other paper and cardboard.</p>
	<p>Medicinal patches</p>	<p>Water vapor transmission performance test of medical plasters</p>
	<p>Package</p>	<p>Customizable fixtures can be extended to packages such as pharmaceutical polyethylene bottles, sealed bags, pharmaceutical ointment tubes, infusion hoses, plastic trays, etc.</p>



## Factory configuration

Standard configuration	Power cord, communication line, sample cutter, sealing grease, ferrule connector, standard membrane, hexagon socket wrench, syringe, sealing ring, syringe sealing ring, fork wrench, cross screwdriver, mouse, metal trachea.
Optional	Computer, calibration certificate, air compressor
Remark	<ol style="list-style-type: none"> <li>1. Standard laboratory environment;</li> <li>2. Power requirements: 220 V regulated power supply, one socket with three holes and three switches;</li> <li>3. Computer requirements: standard configuration (Windows 10, with a nine-pin serial port);</li> <li>4. Other accessories: a bottle of 40 liters of nitrogen (purity 99.999% or more) for calibration, other gases are customized;</li> <li>5. Drying dish (all samples need to be dehydrated and degassed for 24 hours);</li> <li>6. Distilled water or purified water;</li> <li>7. Air compressor.</li> </ol>

Note: Guangzhou Biaoji has always been committed to the innovation and improvement of product performance and function. For this reason, product technical specifications and appearance will also be changed accordingly. The above situation will not be notified. The company reserves the right of modification and final interpretation.





## Service Commitment

- ◆ Free packaging inspection technical support.
- ◆ One-year warranty for instrument, free software upgrade service, and lifetime free technical support.
- ◆ Free to the factory to train the operation of the instrument, qualified people issued graduation certificates, free accommodation and food.
- ◆ Instrument “trade-in” policy and provision of backup instruments in case of failure.
- ◆ There is a testing center (CNAS L8185) to provide incoming sample testing and sample data comparison services.
- ◆ Set up a Reference Standards Development Center to provide calibration services.

## Company Introduction

Guangzhou Biaoji Packaging Equipment Co., Ltd. was established in 2002 and located in Guangzhou Economic Development Zone. It is a company integrating R&D, production and sales of packaging testing instruments, packaging equipment, modified atmosphere preservation equipment and other products, as well as providing third-party testing and standard material proficiency testing. It is committed to providing comprehensive, professional and high-quality products and technical services for packaging, food, medicine, testing and other industries.

Write industry standards with quality, and become the leader and leader in the field of global packaging testing. The 80,000-mile journey is sailing, and Guangzhou Biaoji will escort you!





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Website QR code



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