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Testing instruments

W401 2.0 WaterVapor Transmission Rate Tester

Infrared Method

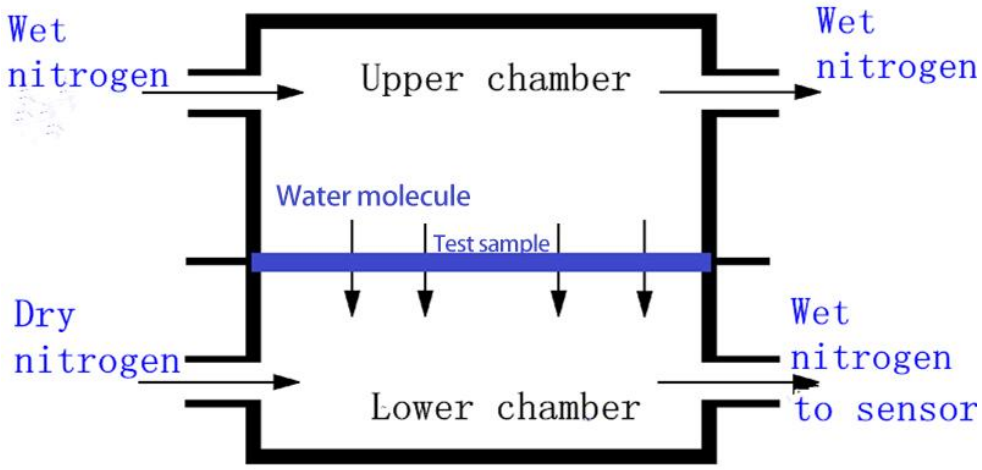
Packaging Testing Industry Leader
https://www.gbpitester.com/

Introduction

AUTO W401 2.0 water vapor transmission rate tester is designed and manufactured according to GB/T 26253 and ASTM F1249 standards, based on the testing principle of infrared method, it provides wide range and high efficiency water vapor transmission rate test for high, medium and low barrier materials is suitable for water vapor transmission performance testing of films, sheets, paper, packaging and other related materials in the fields of food, medicine, medical equipment, daily chemistry, photovoltaic electronics, etc. It is an ideal configuration instrument for off-line or on-line testing of the barrier properties of packaging materials for production units in the packaging industry.

Test principle

AUTO W401 2.0 water vapor transmission rate tester adopts the principle of infrared method. Fix the pre-treated sample in the middle of the test chamber, divide the test chamber into a high-humidity side and a low-humidity side, the humidified nitrogen flows on one side of the film, and the dry nitrogen (carrier gas) flows at a fixed flow rate on the other side, in the presence of a humidity gradient, water vapor will permeate from the high-humidity side to the low-humidity side, and the water vapor that passes through the sample is carried to the infrared sensor by the flowing dry nitrogen, and the water vapor transmission rate (and other parameters) of the sample is obtained by 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^2·24h)
Test precision	0.0001 g/(m^2·24h)
Temperature	15～45℃
Temperature accuracy	±0.1℃
Humidity range	(5～90）%RH，100%RH
Humidity	±1%RH
Test area	50.24 cm^2
Sample size	Φ100 mm
Sample thickness	≤3 mm
Number of sample	1 Piece
Carrier gas	99.999% N_2（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 0.0001 g/(m^2·24h).

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 semiconductor stabilizer automatically controls the temperature, and the temperature control accuracy is 0.1 ℃.

Humidity control: dual airflow (dry and wet) humidity control, stable humidity, high precision, and humidity accurate to ±1%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 g/(m^2·24h), 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**

We develop intelligent operating system by ourselves, with modular graphics, flexible setting of test process parameters, intuitive and convenient operation.

Designed according to the GMP appendix "Computerized System", it has the function of

auditing and tracking, and multi-level permission settings for users can meet the requirements of the pharmaceutical industry for data traceability.

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.

◆ **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. Remote authorization to log in to the IoT platform can realize these functions such as managing experimental data, remote diagnosis and troubleshooting etc.

Customers can download the required instrument materials, documents, and operation videos on the platform.

Application

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

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	1. Standard laboratory environment; 2. Power requirements: 220 V regulated power supply, one socket with three holes and three switches;

	3. Computer requirements: standard configuration (Windows 10, with a nine-pin serial port); 4. Other accessories: a bottle of 40 liters of nitrogen (purity 99.999% or more) for calibration, other gases are customized; 5. Drying dish (all samples need to be dehydrated and degassed for 24 hours); 6. Distilled water or purified water; 7. Air compressor.

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.

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Testing instruments

Infrared Method Water Vapor Permeability Analyzer W413 2.0

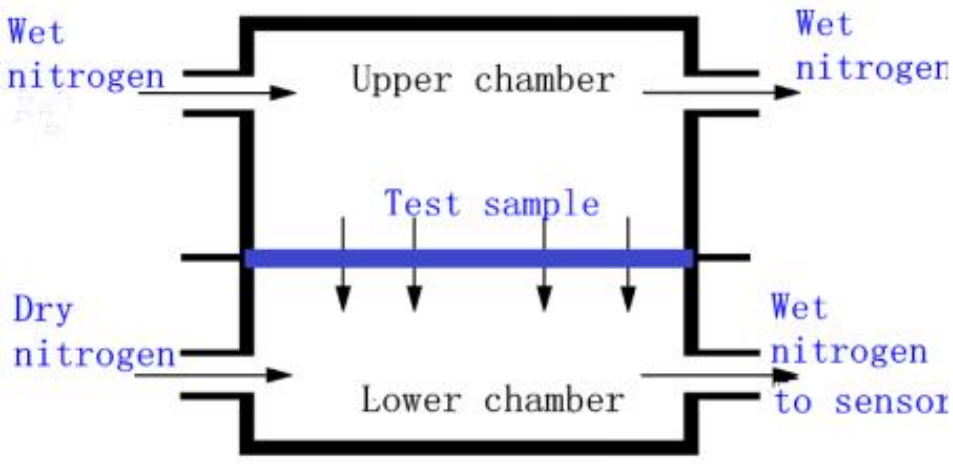
Packaging Testing Industry Leader
https://www.gbpitester.com/

Product introduction

W413 2.0 Infrared Water Vapor Transmission Rate Tester is a high-end precision packaging material testing instrument developed by Guangzhou Biaoji R&D team based on ASTM and GB standard requirements and market demand. It is used to test the water vapor transmission rate of samples under set temperature and humidity conditions. rate (amount). It is suitable for the water vapor transmission performance test of films, sheets, paper, packaging parts and various materials in the fields of food, medicine, medical equipment, daily chemicals, photovoltaic electronics, etc. Ideal configuration instrument for material barrier properties.

Test principle

W413 2.0 water vapor transmission rate analyzer adopts 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 a high-humidity side and a low-humidity side. The compressed air flows on one side of the film, and the dry nitrogen (carrier gas) flows at a fixed rate on the other side. Due to the existence of the humidity gradient, the water vapor will permeate from the high humidity side to the low humidity side, and the water vapor passing through the sample is carried to the infrared sensor by the flowing dry nitrogen, and the water vapor permeability of the sample is obtained by the electrical signal output by the sensor parameters such as overrun.



Schematic diagram of infrared method

Standards

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

Technical parameters

Item	Technical parameters
Test range	0.002~200 g/(m^2·24h)（film and sheet）
Test precision	0.0001 g/(m^2·24h)（film and sheet）
Temperature range	15~45℃（15~60℃ optional）
Temperature accuracy	±0.1℃
Humidity range	(5～90）%RH，100%RH
Humidity accuracy	±2%RH
Test area	50.24 cm^2（with additional adapting piece and be small as 0.785 cm^2 ）
Sample size	Φ100 mm
Sample thickness	≤3 mm
Number of test sample	3Pieces
Carrier gas	99.999% N_2（user provide）
Carrier gas pressure	≥0.1 MPa
Carrier gas flow	5~100 mL/min
Pneumatic pressure	⩾0.3 MPa
Gas supply port	1/8 inch metal pipe
Instrument size	700 mm×630 mm×400 mm
Weight	60 kg
Power	750 W
Power supply	AC 220 V，50 Hz (110V as requested)

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 0.0001 g/(m^2·24h).

The new pneumatic pneumatic control system, the automatic clamp one-button locking the sample, is convenient and labor-saving, and has excellent sealing performance.

◆ Precise control of temperature and humidity

Temperature control: The semiconductor stabilizer automatically controls the temperature, and the temperature control accuracy is 0.1 ℃.

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

◆ Meet the test requirements of high throughput, wide range and high applicability

The instrument is equipped with 3 chambers with independent data, which can meet the needs of high-throughput testing with high testing efficiency.

The measuring range is 0.002~200g/(m2·24h), and the measuring range is wide, which can meet the testing requirements of high, medium and low barrier materials. With the addition of suitable accessories, it can measure the water vapor transmission rate of containers such as bottles, bags, and bowls.

◆ Excellent appearance, convenient control, real-time visualization of curves

The host is embedded with a 11.6-inch high-resolution color touch screen, with clear view, sensitive touch and easy operation.

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

Real-time display of five sets of curves of transmittance-time, temperature-time,

humidity-time, flow-time, voltage-time, and the curve supports preview and hide function.

◆ **Intelligent operating system, global certification**

We develop intelligent operating system by ourselves, with modular graphics, flexible setting of test process parameters, intuitive and convenient operation.

Designed according to the GMP appendix "Computerized System", it has the function of auditing and tracking, and multi-level permission settings for users can meet the requirements of the pharmaceutical industry for data traceability.

Personalized test reports can be set as needed, and data output forms in multiple formats are supported.

◆ **Offline or online 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 Grading Certificate" and "People's Republic of China Manufacturing Measuring Instrument License", the standard object 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.

◆ **Lab intelligent IoT platform**

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

Remote authorization to log in to the IoT platform can realize these functions such as managing experimental data, remote diagnosis and troubleshooting etc.

Customers can download the required instrument information, documents, and operation videos on the platform by themselves.

Application field

	Films	Water vapor transmittance test of various plastic films (PP / PET / PE / PVC / BOPP / CPP, etc.), plastic composite films, paper plastic composite films, metal composite films, co-extrusion films, aluminum films, degradable packaging films (PLA / PBAT / PBS, etc.)
	Sheet	Water vapor transmission rate test of solid pharmaceutical hard sheet (PP/PVC/PTP, etc.), metal composite sheet, rubber sheet and other sheet materials
	Paper, cardboard and their composites	Water vapor transmission rate test of paper and cardboard such as coated paper, silicone paper, aluminum paper for cigarette packs, paper-aluminum-plastic composite sheet, etc.
	Medicinal patch	Water vapor transmission performance test of medical plasters
	Package	Customized fixtures can be extended to packaging parts, such as the water vapor transmission rate of medical polyethylene bottles, sealed bags, medical ointment tubes, infusion hoses, plastic trays, etc.

Configuration List

The standard configuration	Power cord, communication line, sample cutter, sealing grease, ferrule connector, standard film, hexagon socket wrench, syringe, sealing ring, syringe sealing ring, fork wrench, cross screwdriver, mouse, metal trachea

Purchase	Computer, measurement certificate, air compressor
Note	1.Standard laboratory environment; 2.Power requirements: 220V regulated power supply, one three-hole three-position switch socket; 3.Computer requirements: standard configuration (Windows10, with a nine-pin serial port); 4.Other accessories: a bottle of 40 liters of nitrogen (purity 99.999% or more) for calibration, other gases are customized; 5.Drying dish (all samples need to be dehydrated and degassed for 24 hours); 6.Distilled or purified water; 7.Air compressor

Note: GBPI is always committed to product innovation and improved performance, so accordingly product technical specifications are subject to change without notice. GBPI reserves the right to amend and the final power of 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.

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Testing instruments

W301 2.0
Water Vapor Permeability Analyzer
Gravimetric Method

Packaging Testing Industry Leader
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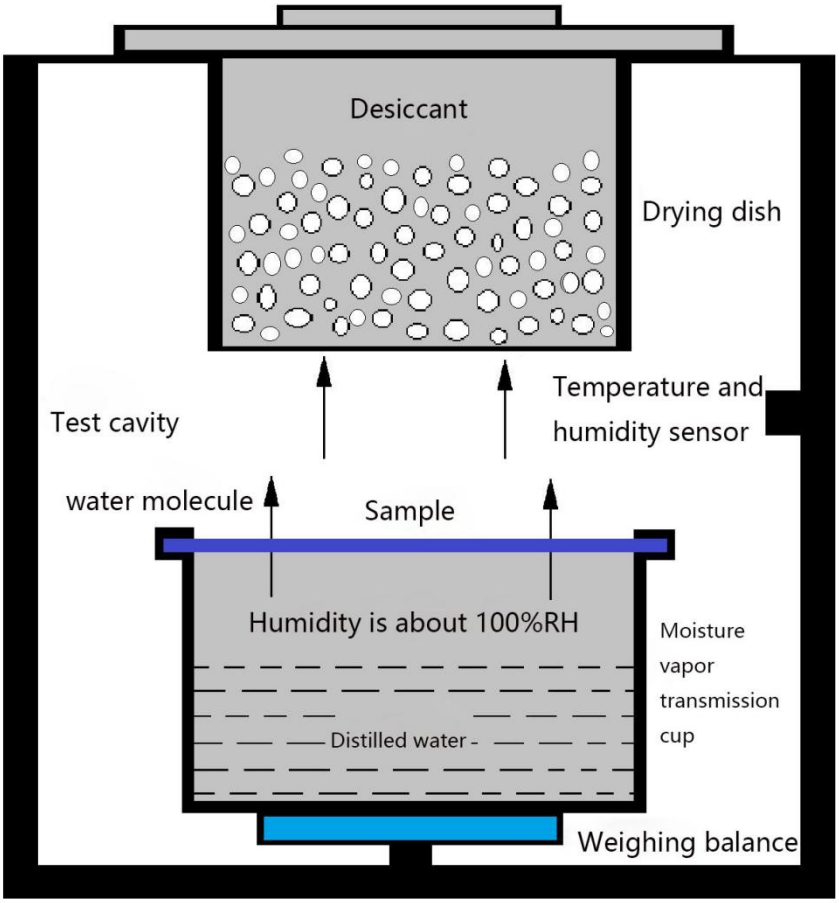
Introduction

W301 2.0 WVTR is based on the test principle of the gravimetric method (weight loss), and is developed, designed and manufactured in accordance with GB/T 1037, ASTM E96 and other standards. It is suitable for the water vapor transmission performance test of films, sheets, paper, packaging and related materials in the fields of food, medicine, medical equipment, daily chemicals, photovoltaic electronics, etc. It provides high, medium and low water vapor barrier materials Wide-range, high-efficiency water vapor transmission rate detection.

Test principle

Add distilled water to the dry and clean moisture-permeable cup, seal the moisture-permeable cup with a pre-treated sample and place it in the test chamber.

By controlling the temperature and humidity, the distilled water in the moisture-permeable cup is evaporated, and the evaporated water vapor passes through the film The drying device absorbs and measures the weight of distilled water in the moisture permeable cup with time to obtain parameters such as the moisture permeability of the sample.



Working principle diagram

Standard

GB/T 1037、GB/T 16928、ASTM E96/E96M、ASTM D1653、TAPPI T464、ISO 2528、DIN 53122-1、JIS Z0208、YBB 00092003

Specification

Item	Technical parameters
Test range	0.1~10000 g/(m^2·24h)
Test precision	0.0001 g/(m2·24h)
Temperature range	15~55℃
Temperature	±0.1℃
Humidity range	≤10%RH

Item	Technical parameters
Humidity accuracy	±2%RH
Test area	50.24 cm^2
Sample size	Φ90 mm
Sample thickness	≤3mm
Number of sample	1 piece
Power	450 W
Power supply	AC 220 V，50 Hz
Size	380mm*545mm*315mm

Features

◆ **High precision load cell**

The instrument is equipped with a high-precision weighing sensor, with high weighing efficiency, stable performance, and a resolution of 0.0001 g/(m2・24h).

Temperature control： The semiconductor stabilizer automatically controls the temperature, and the temperature control accuracy is 0.1 ℃.

◆ **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 0.1~10000 g/(m^2·24h), 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**

With exquisite 3D printed shell, smooth lines, the instrument is fashionable and beautiful.

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 four sets of curves, curves support preview hidden function.

◆ **Intelligent operating system, global certification**

We develop intelligent operating system by ourselves, with modular graphics, flexible setting of test process parameters, intuitive and convenient operation.

Designed according to the GMP appendix "Computerized System", it has the function of auditing and tracking, and multi-level permission settings for users can meet the requirements of the pharmaceutical industry for data traceability.

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.

◆ **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. Remote authorization to log in to the IoT platform can realize these functions such as managing experimental data, remote diagnosis and troubleshooting etc.

Customers can download the required instrument materials, documents, and operation videos on the platform.

Application

	Film	Water vapor transmittance test of various plastic films (PP/PET/PE/PVC/BOPP/CPP, 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.

	Sheet	Water vapor transmittance test of solid pharmaceutical hard sheets (PP/PVC/PTP, etc.), metal composite sheets, rubber sheets and other flakes.
	Paper, cardboard and its composites	Water vapor transmittance test of coated paper, silicone paper, cigarette bag aluminized paper, paper aluminum-plastic composite sheet and other paper and cardboard.
	Medicinal patches	Water vapor transmission performance test of medical plasters
	Package	Customizable fixtures can be extended to packages such as pharmaceutical polyethylene bottles, sealed bags, pharmaceutical ointment tubes, infusion hoses, plastic trays, etc.

Factory configuration

Standard configuration	Power cord, weighing pan + syringe, moisture permeable cup, sampler, sealing grease, standard weight, 4A molecular sieve, serial port cable, Allen wrench, mouse, 125μm standard film, wire and aviation socket welding components, Phillips screwdriver
Optional	Computer, calibration certificate

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

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Testing instruments

W303 2.0

Water Vapor Permeability Analyzer

Gravimetric Method

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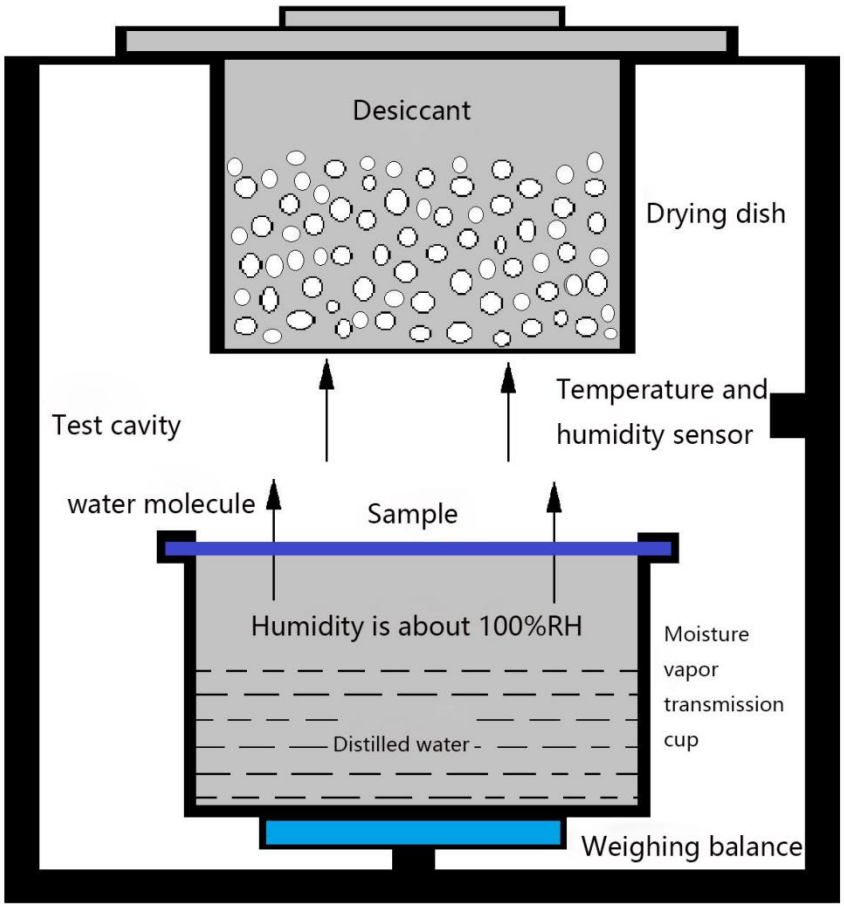
Product introduction

The W303 WVTR tester is designed and produced based on the test principle of weight method (weight reduction) and as per the standards of GB/T 1037 and ASTM E96, etc. It is suitable to measure the water permeability performance of film, sheets, papers, packagings and other related materials in the industries of food, pharmaceutical, medical equipment, daily chemicals, Photovoltaic electronics, etc, providing wide range and high efficiency water vapor transmittance detection for high, medium and low water vapor barrier materials.

Test principal

Adding distilled water to a dry, clean test dish, put the test dish sealed by pre-processed sampl into the test chamber, by controlling temperature and humidity, make the distilled water in the test dish evaporate, the evaporated water vapor is absorbed by the drying device through the film, by measuring decreasing weight change of distilled water in the test dish over time, obtain the parameters of water vapor permeability of the sample, etc.



Working principle diagram

Weight loss principle diagram

Standards

GB/T 1037、GB/T 16928、ASTM E96/E96M、ASTM D1653、TAPPI T464、ISO 2528、DIN 53122-1、JIS Z0208、YBB 00092003

Technical Parameters

Item	Technical parameters
Test range	0.1~10000 g/(m2·24h)
Test precision	0.0001 g/(m2·24h)
Temperature range	15~55℃

Item	Technical parameters
Temperature accuracy	±0.1℃
Humidity range	⩽10%RH
Humidity accuracy	±2%RH
Test area	50.24 cm2
Sample size	Φ90 mm
Sample thickness	≤3mm
Number of test sample	3 pieces
Power	1300 W
Power supply	AC 220 V，50 Hz

Product Features

◆ High precision load cell

The instrument is equipped with high-precision weighing sensor, which is with high weighing efficiency, stable performance, resolution up to 0.0001 g/(m2 · 24h).

Temperature control ： The semiconductor stabilizer automatically controls the temperature, and the temperature control accuracy is 0.1 ℃.

◆ Meeting the test requirements of high throughput, wide range and high applicability

The instrument is equipped with 3 chambers with independent data, which can meet the requirements of high throughput testing and testing efficiency is high.

Wide measuring range 0.1~10000 g/(m2 · 24h) meets the testing demand of high, medium and low barrier materials. By using customized fixtures also can measure the water vapor transmission of bottles, bags, bowls and other packaging parts.

◆ Outstanding shape, easy operation, real time visual curve

The product is designed from the Angle of ergonomics and technical aesthetics，Exquisite 3D printed shell, smooth lines, beautiful fashion, novel and unique.

Automatic operation, one key test, automatic judgment, automatic shutdown.

Real-time display four groups of curves of transmittance - time, temperature - time, humidity - time, weight - time, curves support preview hiding function.

◆ Intelligent operating system, global certification

We develop intelligent operating system by ourselves, with modular graphics, flexible setting of test process parameters, intuitive and convenient operation.

Designed according to the GMP appendix "Computerized System", it has the function of auditing and tracking, and multi-level permission settings for users can meet the requirements of the pharmaceutical industry for data traceability.

Personalized test report can be set as required, supporting multiple formats of data output. Support electronic signature, online submission of audit report function.

◆ Professional calibration service, data is accurate and reliable

Our company has "National Standard Material Grading Certificate" and "Manufacturing Measuring Instrument License of the People's Republic of China" for water vapor transmission rate analyzer issued by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China, The reference material no is GBW(E)130543 / GBW(E)130544. The instrument is calibrated and verified by national standard materials developed independently to ensure the accuracy, versatility and authority of the test data.

◆ Laboratory intelligent IoT platform

The instrument can be connected to IoT platfor, achieve digital network management.

Remote authorization to log in to the IoT platform can realize these functions such as managing experimental data, remote diagnosis and troubleshooting etc.

Customers can download the required instrument information, documents and operation

videos on the platform.

Application

	Film	Water vapor permeability tests of membrane materials such as All kinds of plastic film (PP/PET/PE/PVC/BOPP/CPP, etc.), plastic composite film, paper-plastic composite film, metal composite film, co-extrusion film, aluminum plating film, degradable packaging film (PLA/PBAT/PBS, etc.), etc.
	Sheet	Water vapor permeability tests of solid pharmaceutical hard sheet (PP/PVC/PTP, etc.), metal composite sheet, rubber sheet and other sheet materials.
	Paper, paperboard and composite materials	Water vapor permeability tests of Coated paper, silicone paper, cigarette aluminized paper, paper aluminum-plastic composite sheet, paper board.
	Medicinal patches	Water vapor permeability tests of medical plaster for treatment.
	Package	Customizable fixtures can be extended to packages such as pharmaceutical polyethylene bottles, sealed bags, pharmaceutical ointment tubes, infusion hoses, plastic trays, etc.

Factory configuration

Standard configuration	Power cord, Scale + syringe, wet cup, sampler, Sealing grease, standard weights, 4A molecular sieve, Serial cable, Hex Wrenches, mouse, 125μm

	standard film, wire and aviation socket welding kit, cross screwdriver.
Optional	Computer, calibration certificate

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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.

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Testing instruments

Coulometric Sensor Method Oxygen Permeability Analyzer Y110 2.0

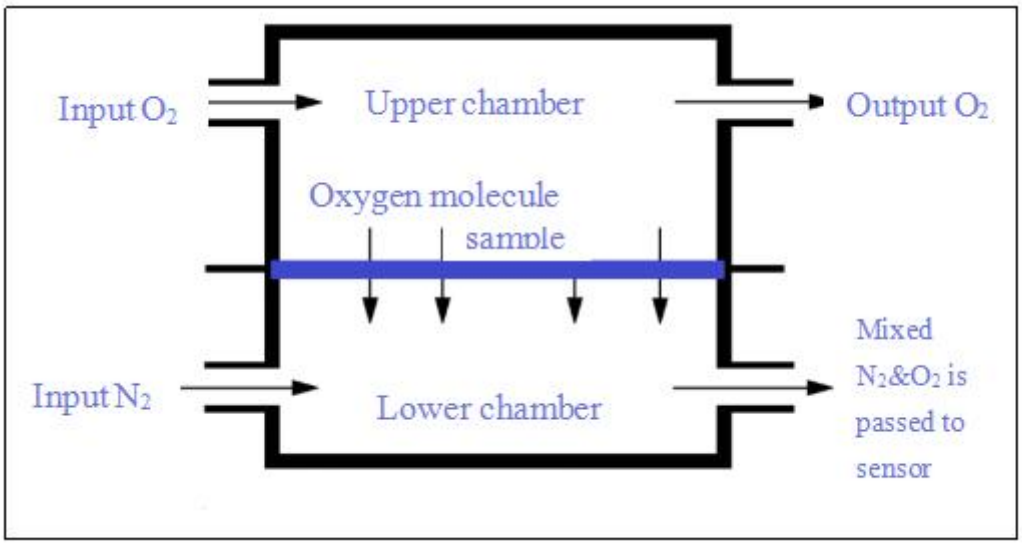
Packaging Testing Industry Leader
https://www.gbpitester.com/

Introduction

This product is based on the test principle of coulometric oxygen sensor, and is designed and manufactured with reference to GB/T 19789, ASTM D3985 and other standards. Adopting high-precision imported oxygen sensor, this tester has high test accuracy. It is suitable for the oxygen permeability test of films, sheets, papers, packages and related materials in the fields of food, medicine, medical devices, daily chemicals, photovoltaic electronics, etc. It provides high-efficiency oxygen transmission rate detection for a wide range of high, medium and low oxygen barrier materials.

Test principle

Y110 2.0 Oxygen Transmission Rate Tester adopts the principle of coulometric sensor method. The pre-treated sample is fixed in the middle of the test chamber, high-purity oxygen flows in the upper chamber of the film, high-purity nitrogen (carrier gas) flows in the lower chamber, oxygen molecules diffuse through the film into nitrogen on the other side, and carried to the sensor by the flowing nitrogen. And the oxygen transmission rate is calculated by analyzing the oxygen concentration measured by the sensor.



Schematic diagram for Coulometric sensor method

Standard

ASTM D3985, ASTM F2622, ASTM F1927, ASTM F1037, ISO 15105-2, JIS K-7126-B, DIN 53380-3, GB/T 19789, YBB 00082003

Specification

Item	Technical Parameters
Test range	0.01~1000 cm3/(m2 · 24h · 0.1MPa) (up to 260000 cm^3/(m2 · 24h · 0.1MPa) can be measured through the mask)
Repeatability	0.01 or 2%, whichever is larger
Resolution	0.0001 $cm^3/(m^2 \cdot 24h \cdot 0.1MPa)$
Temperature control range	15~45℃
Temperature control accuracy	±0.1℃
Humidity range	0%RH，5~90%RH，100%RH
Humidity Control Accuracy	±2%RH
Permeable area	50.24 cm^2 (custom fittings, down to 0.785 cm2)
Sample size	Φ100 mm
Sample thickness	≤3 mm
Sample quantity	1piece

Item	Technical Parameters
Carrier gas flow	5~100 mL/min
Carrier gas pressure	≥0.1 MPa
Pneumatic pressure	⩾0.3 MPa
Dimensions	380 mm×620mm×385 mm
Power	450 W
Power supply	AC 220 V，50 Hz

Features

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

High-precision imported oxygen sensor with high sensitivity, ultra-high stability and ultra-low failure rate, with a resolution of 0.0001 cm3/(m2 · 24h · 0.1MPa).

The new pneumatic air circuit control system, the automatic fixture clamps the sample, which is convenient and labor-saving, and has excellent sealing performance.

◆ **Automatic temperature and humidity precision control**

Temperature control: bi-directional automatic temperature control of the semiconductor refrigeration chip, the temperature control accuracy is higher, up to 0.1 ℃.

Humidity control: automatic humidity control with double airflow humidity method, stable humidity, high precision, accurate humidity to ±2%RH.

◆ **Meet the test requirements of wide range and high applicability**

The instrument is equipped with a single cavity, which is compact and flexible, saving space.

The test range is wide, and the test lower limit is as low as 0.01 cm3/(m2 24 h 0.1 MPa),

which can meet the test requirements of high, medium and low barrier materials. With the addition of adapter accessories, it can measure the oxygen transmission rate of bottles, bags, bowls and other containers .

◆ **Excellent appearance, convenient operation, real-time visualization curve**

The product is designed from the perspective of ergonomics and technical aesthetics, with exquisite 3D printed shell and lines

Smooth, stylish and beautiful, novel and unique.

The host is embedded with an 11.6-inch high-resolution color touch screen with clear views, sensitive touch and easy operation.

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

Real-time display of six sets of curves including permeation-time, temperature-time, humidity-time, nitrogen flow-time, oxygen flow-time, and concentration-time. The curves support preview and hide functions.

◆ **Intelligent operating system, global certification**

Self-developed intelligent operating system, modular icons, stylish color matching, humanized settings, intuitive and convenient operation.

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

With audit trail (log trace, test trace) function, it can meet the needs of data traceability. Different levels of system operation authority can be set.

Personalized test reports can be set on demand, data output in multiple formats, electronic signatures, and online submission of audit reports are supported.

◆ **Offline or online detection**

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

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

Our company has the gas transmission rate "National Standard Substance Grading Certificate" approved and issued by the "General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China", the reference material number (GBW(E) 130497 / GBW(E) 130498); The national reference material is used to calibrate and test the instrument to ensure the accuracy, versatility and authority of the test data.

◆ **Laboratory Intelligent IoT Platform**

The instrument can be connected to the Internet of Things platform to realize network digital management.

Remote authorization to log in to the IoT platform can realize functions such as managing experimental data, remotely diagnosing and solving faults.

Customers can download the required instrument information, documents, and operation videos on the platform by themselves.

Application

	Film	Oxygen transmission rate test of various plastic films (PP/PET/PE/PVC/BOPP/CPP, etc.), plastic composite films, paper-plastic composite films, metal composite films, co-extrusion films, aluminized films, degradable packaging films (PLA/PBAT/PBS, etc.) and other film-like materials.
	Sheet	Oxygen transmission rate test of solid pharmaceutical hard sheets (PP/PVC/PTP, etc.), metal composite sheets, rubber sheets and other flakes.
	Paper, cardboard and its composites	Oxygen transmission rate test of coated paper, silicone paper, cigarette bag aluminized paper, paper aluminum-plastic composite sheet and other paper and cardboard.

	Medicinal patches	Oxygen transmission rate test of medical plasters
	Hygiene products	Oxygen transmission rate test of sanitary products such as sanitary napkins and panty liners
	Packaging	Wine bottles, Coke bottles, peanut oil barrels, Tetra Pak packaging, vacuum packaging bags, three-piece cans, cosmetic packaging, toothpaste tubes, jelly cups, yogurt cups, etc. Plastic, rubber, paper, paper-plastic composite, glass, metal bottles Oxygen transmission rate test of bags, cans, boxes and barrels.
	Package closure	Oxygen transmission performance test of various package closures
	Solar backplane	Oxygen transmission performance test of solar backsheet
	Pipes	Oxygen permeability test of pipes made of various materials

Factory configuration

Standard configuration	Power line, communication line, sample cutter, sealing grease, metal air tube, terminal ferrule joint, terminal ferrule joint, reference material, special wrench, syringe, sealing ring, fork wrench, Phillips screwdriver, mouse
Optional	Computer, measurement certificate
User provide	1. Standard laboratory environment; 2. Power requirements: 220V regulated power supply with three holes and three positions with a switch socket; 3. Computer requirements: standard configuration (Windows10, with a nine-pin serial port); 4. One bottle of oxygen, the purity must be above 99.999%, with a pressure reducing valve, and the output range is 0-0.4 Mpa; 5. One bottle of nitrogen, the purity must be above 99.999%, with a pressure reducing valve, the output range is 0-0.4 Mpa.

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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

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Testing instruments

Coulometric Sensor Method Oxygen Permeability Analyzer Y310 2.0

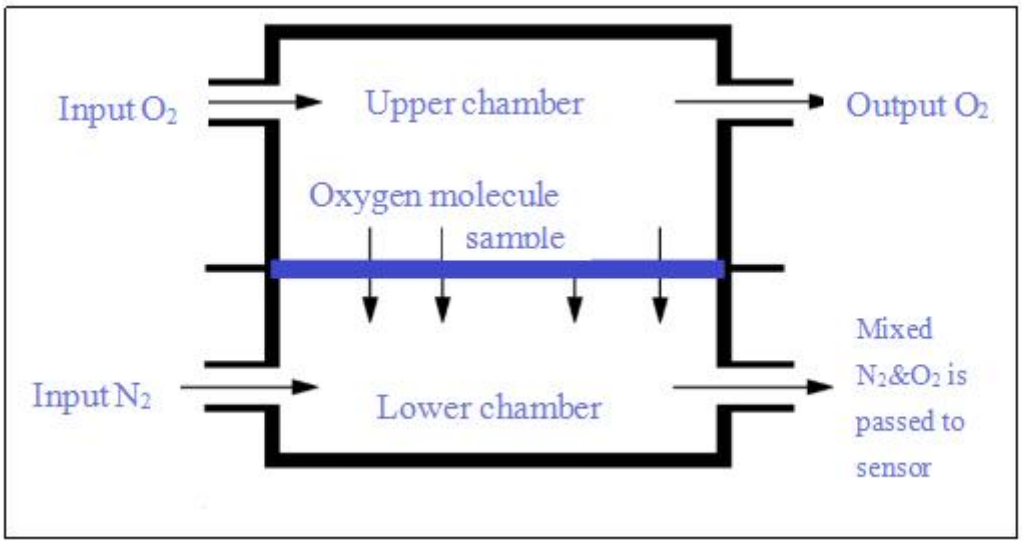
Packaging Testing Industry Leader
https://www.gbpitester.com/

Introduction

This product is designed and manufactured based on the coulometric sensor method and conforms to GB/T 19789, ASTM D3985, etc. This instrument provides wide-range, high-efficiency oxygen transmission rate detection for high, medium and low oxygen barrier materials. Y310 2.0 is applicable to the determination of oxygen permeability of plastic films, sheeting, paper, and other packaging materials used in food, pharmaceutical, medical apparatus, consumer products, photovoltaic and electronic industries, etc.

Test Principle

Y310 2.0 Oxygen Permeability Analyzer is designed and manufactured based on the coulometric sensor method. The pre-conditioned specimen is clamped in the test cell, oxygen or air flows on one side of the specimen while a stream of high purity nitrogen flows on the other side. Oxygen molecules permeate through the specimen into the nitrogen side and are carried to the coulometric sensor. The sensor analyzes the oxygen concentration and calculates the oxygen transmission rate.



Schematic diagram for Coulometric sensor method

Standard

GB/T 19789, YBB 00082003, ASTM D3985, ASTM F2622, ASTM F1927, ASTM F1307, ISO 15105-2, DIN 53380-3, JIS K-7126-B

Technical Parameter

Item	Technical parameter
Test range	0.01~1000 $cm^3/(m^2 \cdot 24h \cdot 0.1MPa)$ (can be measured through the clamp, max to 260000 $cm^3/(m^2 \cdot 24h \cdot 0.1MPa)$)
Repeatability	0.01 or 2%, whichever is greater
Resolution	0.001 $cm^3/(m^2 \cdot 24h \cdot 0.1MPa)$
Temperature control range	15~45℃
Temperature control accuracy	±0.1℃
Humidity control range	0%RH，5～90%RH，100%RH
Humidity control accuracy	±2%RH
Permeable area	50.24 cm^2（custom fittings, min to 0.785 cm^2）
Sample size	Φ100 mm
Sample thickness	≤3 mm
Sample quantity	3 pcs
Carrier gas pressure	≥0.1 MPa
Carrier gas flow	5~100 mL/min
Pneumatic pressure	≥0.3 MPa
Dimension	700mm*655mm*390mm

Item	Technical parameter
Power	750 W
Power supply	AC 220 V，50 Hz

Product Features

◆ **Patent core technology, high efficient and accurate testing**

High-precision imported oxygen sensor with high sensitivity, ultra-high stability and ultra-low failure rate, with a resolution of 0.001 cm3/(m2 · 24h · 0.1MPa).

The new pneumatic air circuit control system, the automatic fixture clamps the sample, which is convenient and labor-saving, and has excellent sealing performance.

◆ **Precise control of temperature and humidity**

Temperature control: bi-directional automatic temperature control of the semiconductor refrigeration chip, the temperature control accuracy is higher, up to 0.1 ℃.

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

◆ **Meet the test requirements of high throughput, wide range and high applicability**

The instrument is equipped with 3 chambers with independent data, which can meet the needs of high-throughput testing and high testing efficiency.

The test range is wide, and the test lower limit is as low as 0.01 cm3/(m2 24 h 0.1 MPa), which can meet the test requirements of high, medium and low barrier materials. With the addition of adapter accessories, it can measure the oxygen transmission rate of bottles, bags, bowls and other containers.

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

The host is embedded with an 11.6-inch high-resolution color touch screen with clear views, sensitive touch and easy operation.

Exquisite 3D printed shell, smooth lines, fashionable and beautiful, novel and unique.

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

Real-time display of six sets of curves including permeation-time, temperature-time, humidity-time, nitrogen flow-time, oxygen flow-time, and concentration-time. The curves support preview and hide functions.

◆ **Smart operating system, global certification**

We develop intelligent operating system by ourselves, with modular graphics, flexible setting of test process parameters, intuitive and convenient operation.

Designed according to the GMP appendix "Computerized System", it has the function of auditing and tracking, and multi-level permission settings for users can meet the requirements of the pharmaceutical industry for data traceability.

Personalized test reports can be set on demand, support data output in multiple formats, support electronic signature functions, and submit audit reports online.

◆ **Offline or online 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**

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◆ **Lab Intelligent IoT Platform**

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

Remote authorization to log in to the IoT platform can realize these functions such as managing experimental data, remote diagnosis and troubleshooting etc.

Customers can download the required instrument information, documents, and operation videos on the platform by themselves.

Application field

	film	Various plastic films (PP/PET/PE/PVC/BOPP/CPP, etc.), plastic composite films, paper-plastic composite films, metal composite films, co-extrusion films, aluminized films, degradable packaging films (PLA/PBAT/PBS) etc.)
	sheet	Oxygen transmission rate test of solid pharmaceutical hard sheet (PP/PVC/PTP, etc.), metal composite sheet, rubber sheet and other sheet materials
	Medicinal stickers, warm stickers	Oxygen permeability test of medical plaster therapy patch, warm patch, dysmenorrhea patch and other patches
	hygiene products	Oxygen transmission rate test for sanitary napkins, pads and other sanitary products
	Paper, cardboard and their	Oxygen transmission rate test of paper and cardboard such as coated paper, carbon paper, silicone paper, aluminized paper,

	composites	paper-aluminum-plastic composite sheet, etc.
	package	Wine bottles, cola bottles, peanut oil barrels, Tetra Pak packaging, vacuum packaging bags, three-piece cans, cosmetic packaging, toothpaste tubes, jelly cups, yogurt cups and other plastic, rubber, paper, paper-plastic composite, glass, metal bottles , Oxygen transmission rate test of bags, cans, boxes, barrels
	package cover	Oxygen permeation performance testing of various package closures
	solar back sheet	Oxygen transmission performance test of solar back sheet
	pipe	Oxygen permeability test of pipes of various materials such as PPR pipes

Factory configuration

Standard configuration	Power cord, communication line, sample cutter, sealing grease, metal gas pipe, terminal ferrule, reference material, special wrench, syringe, sealing ring, fork wrench, Phillips screwdriver, mouse

Optional parts	Computer, calibration certificate
User-provided	1. Standard laboratory environment; 2. Power requirements: 220V regulated power supply with three holes and three sockets with a switch; 3. Computer requirements: standard configuration (Windows10, with a nine-pin serial port); 4. One bottle of oxygen, the purity must be above 99.999%, with pressure reducing valve, the output range is 0-0.4 Mpa; 5. One bottle of nitrogen, the purity must be above 99.999%, with pressure reducing valve, the output range is 0-0.4 Mpa

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After-sales Commitment

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- Free training of instrument operation at the factory, a graduation certificate will be issued to those who pass, and board and lodging will be provided free of charge.
- Instrument "trade-in" policy, as well as provision of backup instruments in case of failure.
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