

# Coulometric Sensor Method Oxygen Permeability Analyzer Y110 2.0

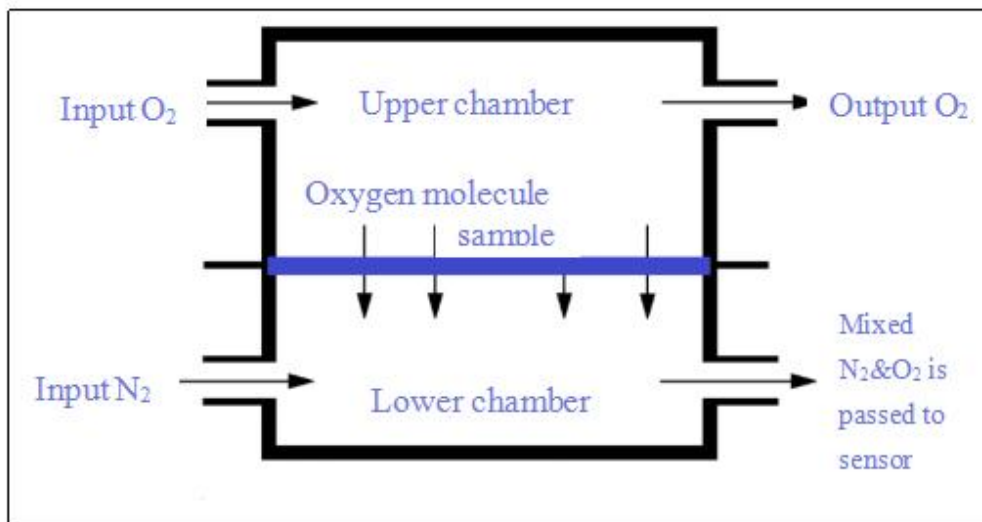


## Introduction

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, GB/T 1038.2, YBB 00082003

## Specification

Item	Technical Parameters
Test range	0.01~1000 cm <sup>3</sup> /(m <sup>2</sup> · 24h · 0.1MPa)
Repeatability	0.01 or 2%, whichever is larger
Resolution	0.0001 cm <sup>3</sup> /(m <sup>2</sup> ·24h·0.1MPa)
Temperature control range	15~45°C
Temperature control accuracy	±0.1°C
Humidity range	0%RH, 5~90%RH, 100%RH
Humidity Control Accuracy	±2%RH
Permeable area	50.24 cm <sup>2</sup> (custom fittings, down to 0.785 cm <sup>2</sup> )
Sample size	Φ100 mm
Sample thickness	≤3 mm
Sample quantity	1 piece
Carrier gas flow	5~100 mL/min
Carrier gas pressure	≥0.1 MPa
Pneumatic pressure	≥0.3 MPa
Dimensions	380 mm×620mm×385 mm
Weight	35 kg
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  $0.0001 \text{ cm}^3/(\text{m}^2 \cdot 24\text{h} \cdot 0.1\text{MPa})$ .

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  $0.1 \text{ }^\circ\text{C}$ .

Humidity control: automatic humidity control with double airflow humidity method, stable humidity, high precision, accurate humidity to  $\pm 2\% \text{RH}$ .

### ◆ 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  $0.01 \text{ cm}^3/(\text{m}^2 \cdot 24 \text{ h} \cdot 0.1 \text{ MPa})$ , 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 Reference Material 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

	<p>Film</p>	<p>Oxygen transmission rate test of various plastic films (PP/PET/PE/PVC/BOPP/PP, 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.</p>
	<p>Sheet</p>	<p>Oxygen transmission rate 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>Oxygen transmission rate 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>Oxygen transmission rate test of medical plasters</p>
	<p>Hygiene products</p>	<p>Oxygen transmission rate test of sanitary products such as sanitary napkins and panty liners</p>
	<p>Packaging</p>	<p>Wine bottles, Coke bottles, peanut oil barrels, Tetra Pak packaging, vacuum packaging bags, three-piece cans, cosmetic packaging, toothpaste</p>

		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 back-sheet
	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	<ol style="list-style-type: none"><li>1. Standard laboratory environment;</li><li>2. Power requirements: 220V regulated power supply with three holes and three positions with a switch socket;</li><li>3. Computer requirements: standard configuration (Windows10, with a 64-bit system);</li><li>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;</li><li>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.</li></ol>
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Note: GBPI 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. GBPI 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 reference 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 GBPI will escort you!



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