

C206H Oxygen Transmission Rate Test System is designed and manufactured based on the coulometric sensor method and conforms to ASTM D3985. This instrument can be used to measure the oxygen transmission rate of barrier materials with high and medium barrier properties with high accuracy and high efficiency. C206H 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.



Features ^{note1}

Coulometric Sensor

- Equipped with Labthink latest technology ppb-level coulometric sensor features a wider test range.
- Designed conforming to ASTM D3985, intrinsic standard and no calibration is required.
- Ultra-long service life which three times that of traditional oxygen coulometric sensor.
- Embedded with over-range warning and automatic protection function.

Accurate data

- Brand new dome design test chamber and 360° air circulation constant temperature technology ensures better temperature stability.
- The test chamber is equipped with a high-precision humidity sensor to monitor and record humidity changes in real time.
- The control of air flow, temperature and relative humidity is automated to realize higher accuracy.

High Efficiency

- Six independent test cells with a standard area of 50cm², three times the number of test cells in traditional oxygen permeability testing instruments.
- Six specimens can be tested simultaneously under the same testing condition, delivering independent test result.
- Within the same time duration, the number of tested specimens is increased from 2 to 6.
- Automatic specimen clamping saves time and effort. The clamping force is consistent, resulting in better air tightness.



Intelligent control

- 12" touch-screen tablet powered by Windows™ 10 operating system makes the operation simpler and more convenient.
- Automatic test mode requires only inputting temperature and humidity, one click start, the test is fully automated
- Intelligent test chamber hood automatically opens and closes with sound and light alert.

Safe and reliable

- System security -- Built-in Labthink's unique high-end industrial computer prevents system failures caused by computer viruses, ensures operational reliability and data storage security.
- Operation safety-- Equipped with intelligent optics sensors which give sound and light alert to ensure safe operation.
- Performance reliability—the instrument adopts components of global renowned brands, to ensure stable and reliable performance.

Space saving

- The width of the instrument is only 1/3 of the traditional six-cell instrument, saving space for a laboratory.

Powerful functions

- Professional test mode provides flexible and diverse control options to meet various needs of scientific research.
- The system provides oxygen transmission rate curve, oxygen transmission coefficient curve, temperature curve, and humidity curve.
- Ultra-wide test range to meet the barrier test of various materials (customize).
- Ultra-wide temperature range to meet the barrier test under different extreme temperatures (optional).
- The gas purifier independently developed by Labthink can remove trace oxygen in nitrogen and provide oxygen-free carrier gas (optional).

Test principle

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 and other factors.

Standards

ASTM D3985、ASTM F1307、ASTM F1927、GB/T 19789、GB/T 31354、DIN 53380-3、JIS K7126-2-B、YBB 00082003-2015

Applications

Applications	Films	Oxygen transmission rate test of various plastic films, paper-plastic composite films, coextruded films, aluminized films, aluminum foils, aluminum foil composite films, glass fiber aluminum foil composite films and many others
	Sheets	Oxygen transmission rate test of PP, PVC and PVDC sheets, metal foils, rubber pads, silicon wafers and other sheet materials

Technical specifications

Table 1: Test parameters^{note2}

	Parameters/Model	C206H
Test range	cc/(m²·day) (Standard area 50cm²)	0.02~200
	cc/(m²·day) (Standard area 50cm²)	0.02~400000 (Customize)
	cc/(m²·day) (MASK area5cm²)	0.2~2000 (Optional)
	cc/(m²·day) (MASK area1cm²)	1~10000 (Optional)
Resolution	cc/(m²·day)	0.0001
Repeatability	cc/(m²·day)	0.02or 1%, take the greater
Test Temperature	℃	15~50
		5~60 (Optional)
Temperature fluctuation	℃	±0.15
Test Humidity	%RH (Within standard test temperature range)	0%, 5~90%±2%
Additional Functions	GP-01 Gas Purifier	Optional
	DataShield™ ^{note3}	Optional
	GMP Computer System requirement	Optional
	CFR21Part11	Optional



Table 2: Technical specifications

Test Cell	6Cells
Specimen Size	4.6" x 4.6" (11.7cm×11.7cm)
Specimen Thickness	≤120 Mil (3mm)
Standard Test Area	50cm ²
Gas supply	99.999%Nitrogen、99.5%Oxygen (Outside of supply scope)
Gas Pressure	≥40.6 PSI / 280 kPa
Port Size	1/8"Metal tube
Instrument Dimension	23.6" H x 19.2" W x 25.9" D (60cm× 49cm× 66cm)
Power Supply	120VAC±10% 60Hz / 220VAC±10% 50Hz (one of two)
Net Weight	220Lbs (100kg)

Table 3: Product Configuration

Standard Configuration	Instrument mainframe, tablet, sampler, vacuum grease, Φ6 mm PU tubing
Optional Parts	GP-01 Gas Purifier, Air compressor, CFR21Part11, GMP Computer System requirement, DataShield™ note3
Note	The gas supply port of the instrument is Φ6 mm PU tubing (pressure≥79.7 PSI/ 550kPa) , customers need to prepare gas supply.

Note 1: The described product functions are subject to the specification in "Technical Parameters"

Note 2: The parameters in the table are measured in Labthink laboratory by professional operators according to the requirements and conditions stipulated in laboratory environmental standards.

Note 3: DataShield™ provides safe and reliable data application support. Multiple Labthink instruments can share one single DataShield™ system which can be configured as required.

✧ Labthink is always committed to the innovation and improvement of product performance and functions. For this reason, product technical specifications are subject to changes without further notification. Labthink reserves the right of modification and final interpretation.

