

C301B Water Vapor Transmission Rate Test System is designed and manufactured based on infrared sensor method and conforms to the requirements of ASTM F1249 and ISO 15106-2. This instrument can be used to measure the water vapor transmission rate of barrier materials with high and medium moisture barrier properties with a wide testing range and high testing efficiency. C301B is applicable to determination of water vapor permeability of plastic films, sheeting, paper, packages and other relative packaging materials in food, pharmaceutical, medical apparatus, consumer goods, photovoltaic and electronic industries, etc.



Features^{note1}

- Equipped with Labthink patented infrared sensor, conforming to ASTM F1249, non-consumable type with ultra-long service life.
- Support temperature control to satisfy tests under different conditions
- Built-in high-quality stainless steel test cell with better sealing performance
- Imported manual isolation valve and flow regulator are adopted for better sealing performance and lower failure rate
- Industrial computer appearance design, small size and fast cooling
- Reference film is provided for quick calibration
- The system adopts single-chip microcomputer control and can run independently
- The test report can be exported in common formats such as EXCEL and PDF
- Support micro printer, automatically print test data (optional)
- Equipped with RS232 data interface, which can be connected to computer software for curve analysis, data storage, report printing, etc. (optional)

Test principle

The pre-conditioned specimen is clamped in the test cell, nitrogen with stable relative humidity flows on one side of the specimen while a stream of dry nitrogen flows on the other side. Due to the humidity difference, water vapor permeates

through the specimen from the high humidity side into the low humidity side, and is carried to the infrared sensor by the dry nitrogen flow. By analyzing the electrical signals generated by the water vapor, the sensor calculates the water vapor concentration and the water vapor transmission rate.

Standards

ASTM F1249、ISO 15106-2、GB/T 26253、JIS K7129、YBB00092003-2015

Applications

Applications	Films	Water vapor 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	Water vapor 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		C301B
Test range	g/(m² day) (Standard area 50cm²)	0.1~40
Resolution	g/(m² day)	0.1
Test temperature	℃	15~50
Temperature resolution	℃	0.1
Temperature fluctuation	℃	±0.5
Test humidity^{note3}	%RH	4%RH~100%RH±2% (Saturated salt solution)
Temperature fluctuation	GMP Computer System requirement	Optional

Table 2: Technical specifications

Test Cell	1 Cell
Specimen Size	3.8" x 3.8" (9.7cm×9.7cm)
Specimen Thickness	≤120 Mil (3mm)

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Standard test area	50cm ²
Test Gas	99.999% High purity nitrogen (Outside of supply scope)
Gas Pressure	7.2 PSI / 50 kPa
Port Size	1/8" Metal tube
Instrument Dimension	12.9" H x 16.9" W x 15.7" D (33cm×43cm×40cm)
Power Supply	120VAC±10% 60Hz / 220VAC±10% 50Hz (one of two)
Net Weight	50Lbs (23kg)

Table 3: Product Configuration

Standard Configuration	Instrument mainframe, TC03 temperature control device, porous ceramic plate ,sampler, vacuum grease
Optional Parts	Professional software, GMP Computer System requirement, Micro-printer

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: Different humidity can be achieved by immersing porous ceramic plate is in different saturated salt solutions, see ASTM E 104.

✧ 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.