

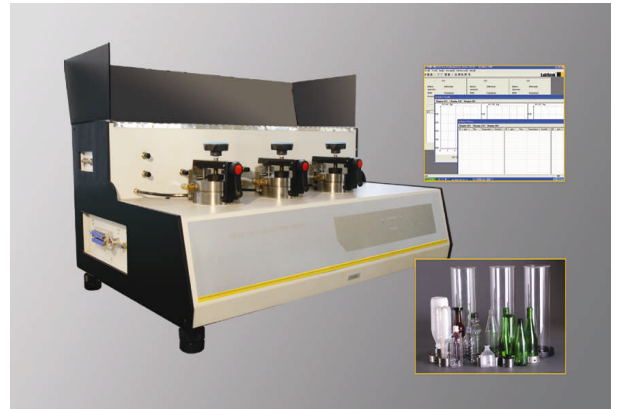
PERME™ DM2/330 Differential and equal pressure method gas permeability tester

Labthink®

PERME™ DM2/330 is for precise measurement of gas transmission rate, solubility coefficient, diffusion coefficient and permeability coefficient of plastic films, laminated films, high barrier material, sheets, foils and back sheets as well as bottles, pouches, jars and boxes made of plastic, rubber, paper, glass, metal and other materials.

Characteristics

- Computer control;
- Differential pressure method and equal pressure method in one unit;
- Permeation chamber porous support plate(patent);
- For gas transmission rate, permeability coefficient, solubility coefficient and diffusion coefficient measurement;
- Three independent chamber;
- 6 results of 3 specimens by 2 methods can be accomplished simultaneously;
- Constant temperature control;
- Data curve-fitting function under any temperature;
- Toxic and explosive gases can be expanded testable;
- Three test modes: proportional, non-proportional and manual;
- Rapid calibration with reference films;
- RS232 interface;
- Network transmission interface for LAN data management and Internet data transmission.



Testing modes:

Unique patent design; one tester can perform tests using both differential and equal pressure methods.

1. Equal Pressure Method: Clamp the pre-conditioned specimen between the upper and the lower chambers. High pure oxygen or air flows in one side of the film (upper chamber); while high pure nitrogen flows in the other side of the film (lower chamber). Oxygen molecule passes through the film into the high pure nitrogen of another side (lower chamber), and is taken to the sensor by the flowing nitrogen. By analyzing the concentration of oxygen detected by the sensor, the oxygen transmission rate and other parameters can be obtained. As to packages, nitrogen flows in the container, air or high pure oxygen fills the outside of the container.

2. Differential (Manometric) Method: Clamp the pre-conditioned specimen between the upper chamber and the lower chamber. Vacuumize the low-pressure chamber (lower chamber) and then the whole system. When the specified degree of vacuum is reached, shut off the lower test chamber and feed test gas of certain pressure to the high pressure chamber (upper test chamber). Ensure that a constant differential pressure (adjustable) is maintained between the two sides of the specimen. Thus, under the function of pressure gradient, the test gas permeates from the high-pressure side to the low-pressure side. By monitoring the lower pressure chamber, various barrier parameters can be obtained.

3. Double Method: Clamp the preconditioned specimen between the upper and lower chambers. Equal pressure method test proceeds first; and then, the differential (manometric) method.

Technical data:

1. Equal Pressure Mode

1.1 Film Test:

Test Range: 0.01 ~ 5000 cm³/m²•day (Routine)

Resolution: 0.001 cm³/m²•day

Test gas: oxygen and air (users provide test gas for themselves)

Numbers of Specimens: 3 pieces

Test Area: 38.48cm²

1.2 Package Test (Optional Purchase):

Test Range: 0.0001 ~ 50 cm³/pkg•day

Resolution: 0.00001 cm³/pkg•day

Numbers of Specimens: 3 pieces

Specimen body Size: 100% oxygen test: bottle body < Φ90mm, height < 280mm

Open test (air): No limitation

Specimen Specifications: Inside diameter of bottle neck > Φ9mm, outside diameter of bottle neck < Φ50mm

(Routine) bag and box: supported by accessory

2. Differential Pressure (Manometric) Mode:

Test Range: 0.05 ~ 50, 000 cm³/m²•24h•0.1MPa (Routine)

Vacuum Accuracy: 0.1 Pa

Vacuum Degree: <20 Pa

Test Gas: O₂, N₂ and CO₂, etc. (Users provide the gas for themselves)

Test Pressure: -0.1Mpa ~+0.1Mpa

Numbers of Specimens: 3 pieces

Test Area: 38.48cm²

3. Other Technical Indexes:

Temperature Range: 5℃ ~95℃

Temperature Accuracy: ±0.1℃

Test Gas Source Pressure: 0.6MPa

Inlet Size: Φ8mm polyurethane pipe

Carrier Gas: 99.999% High Pure Nitrogen (Users provide gas for themselves)

Carrier Gas Source Pressure: 1/8 inch metal pipe

Dimensions: 1080 mm (L) x720 mm (B) x490 mm (H)

Power: AC 220V 50Hz

Net weight: 120kg

Standards

ASTM D3985, ASTM D2622, ASTM F1307, ASTM F1927, ASTM D1434, ISO 15105-1, ISO 15105-2, ISO 2556, JIS K7126-A, JIS K7126-B, YBB00082003, GB/T 19789, GB 1038

Configuration

Standard: Mainframe, temperature controller, Nitrogen pressure regulator, Oxygen pressure regulator, professional software, communication cable, vacuum pump, vacuum grease, sampling cutter, filter paper.

Optional: package accessory, accessory for small sample, sampling cutter, vacuum grease, oil for vacuum pump, filter paper

Note: the inlet is Φ8mm polyurethane pipe; 1/8 inch metal pipe. Users provide testing gas themselves.