CONTAINER GAS PERMEABILITY TESTER

G2/131 is based on the differential pressure method, and is professionally applicable to the determination of gas transmission rate, solubility coefficient, diffusion coefficient and permeability coefficient of plastic films, composite films, high barrier materials, sheets, and aluminum foils at different temperatures. The system is equipped with three diffusion cells, which could test specimens simultaneously with individual test results. The testing process conforms to GB, ISO, ASTM and other international standards.

Professional

- System provides proportional and standard test modes with convenient parameter settings
- The gas transmission rate as well as the coefficients of permeability, solubility and diffusion can be obtained at one operation
- 3 distinct or identical specimens can be tested simulta neously with the individual test results
- Wide test range for different materials with high, me dium and low barrier properties
- Various types of gases are testable: sole gas, mixed gases, poisonous gases, explosive gases and other dan gerous gases (customization is required)
- World exclusive data fitting function that could easily calculate gas permeability and other parameters at dif ferent temperatures
- Top quality parts and components made by world famous brands are used to ensure reliable overall product perfor mance
- Reference film for fast calibration ensures accurate and universal test data

High- end

- G2/131 utilizes Labthink's latest embedded computer control system that provides a better performance than traditional single chip system.
- Patented integrated design of three test cells improves the test efficiency and reduces the space occupancy of the instrument
- Embedded computer control system provides safer and more reliable data management as well as test operation
- The instrument can be easily operated with a mouse, a keyboard, and a monitor, without requiring a PC
- The system is equipped with four USB ports and dual Internet ports for convenient data transmission

Test Principle

The pre-conditioned specimen is mounted in the gas diffusion cell as to form a sealed barrier between two chambers. The lower-pressure chamber is firstly evacuated, followed by the evacuation of the entire cell. A flow of gas is thereafter introduced into the evacuated higher-pressure chamber and a constant pressure difference is generated between the two chambers. The gas permeates through the specimen from higher pressure side into the lower side. The gas permeability and other barrier properties of the specimen can be obtained by monitoring the pressure changes in the lower chamber.

Applications

Basic applications	
Films	Including plastic films, plastic composite films, paper-plastic composite films, coextruded films, aluminized films, aluminum foils, aluminum foil composite films and many others
Sheeting	Including engineering plastics, rubber and building materials, e.g. PP, PVC, and PVDC
Extended applications	
Various gases	Test the permeability of various types of gases, e.g. O2, CO2, N2, Air and He
Inflammable, Explosive and Poisonous Gases	Test the permeability of inflammable, explosive and poisonous gases
Biodegradable films	Test gas permeability of various sorts of biodegradable films, e.g. starch-based biodegradable bags
Materials for aerospace usage	This instrument can test the Helium permeability of airship gas bags
Paper and paper board	Test gas permeability of paper and paper-plastic composite materials, e.g. aluminized paper for cigarette packages, Tetra Pak sheeting, paper bowls for instant noodles and disposable paper cups
Paint films	Test gas permeability of substrates coated paint films
Glass fiber cloth and paper	Including glass fiber cloth and paper materials, e.g. Teflon paint cloth, Teflon welding cloth, and Teflon silicon rubber cloth
Soft tube materials for cosmetics	Including various types of cosmetic tubes, aluminum-plastic tubes and toothpaste tubes
Rubber sheeting	Including various sorts of rubber sheeting, e.g. car tires

TECHNICAL SPECIFICATIONS	
Test range	0.05~50,000 cm3/m2·24h·0.1MPa
Temperature range	15°C~55°C (room temperature 23°C)
Temperature accuracy	±0.1°C (standard)
Humidity range	0%RH, 2%~98.5%RH, 100%RH (humidity generator is outside of supply scope)
Humidity accuracy	±1%RH
Vacuum resolution	0.1Pa
Vacuum degree of test chamber	<20 Pa
Number of specimens	3 with independent test results
Specimen Size	97 mm
Test Area	38.48 cm2
Test gas	O2, N2 and CO2 (outside of supply scope)
Test pressure	-0.1MPa~+0.1MPa
Gas supply pressure	0.4 MPa~0.6 MPa
Port Size	6 mm PU Tubing
Instrument dimensions	690 mm (L) x 350 mm (W) x 360 mm (H)
Net weight	71 kg
Power supply	AC (85~264)V (47~63)Hz

CONFIGURATIONS	
Standard configurations	Mainframe, Professional Software, LCD Monitor, Keyboard, Mouse, Round Sample Cutter, Vacuum Grease, Fast Quantitative Filter Paper and Vacuum Pump
Optional Parts	Blades for Sample Cutter, Vacuum Grease, Vacuum Pump Oil, Fast Quantitative Filter Paper, Humidity Generator, LystemTM Lab Data Sharing System and Printer (compatible with PCL3)
Note	1. The gas supply port of the instrument is 6 mm PU tubing; 2. Customers will need to prepare for gas supply.