- Online Data Management System for Packaging Testing - The ultimate cloud computing technology for test data processing and management
- Designed with embedded computer control system and intelligent operating software
- Can be used for plastic films, composite films, sheets, aluminum foil, rubber and other high-barrier materials as well as packages and containers
- Conforms to ASTM, ISO, JIS, and other international standards

Online data management system for packaging testing

Comes with two versions to meet distinct needs of our clients:

The Cloud Version

- Consist of 6 functional modules: Test Management, Target Management, Instrument Management, File Management, Settings, and Online Support
- Cloud services: storage, calculation, and analysis of mass test data
- Automatically upload original test data to the cloud server to guarantee data security
- Intelligent statistical analysis of test results
- Easily accessible through the internet on PCs, laptops, mobile phones, and other devices anywhere and anytime, to check and review real time test results and historical test reports, as well as analytical graphs and statistical information

The Intranet Version

- Featured with storage space for vast data, correlation analysis, trend analysis, and statistical analysis of test data, as well as report printing and data export functions
- Easily accessible via computers through Intranets
- “One Click Upgrade” to the powerful “Cloud Version”

Functionality

- Designed for oxygen permeability test of various films, containers and contact lenses (Dk/t, Dk)
- Testing three specimens at the same time in three test cells and providing average value of the three test specimens
- Optional wide range and automatic temperature control system and external humidity device, providing humidification to one-side chamber, to support various non-standard test conditions
- Support tests for pure oxygen, air and mixed gas
- Reference film or standard gas for fast and accurate calibration

Design

- 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 instrument is equipped with four USB ports and dual Internet ports for convenient data transmission.
- Sophisticated energy consumption and test environment monitoring and analysis functions for better test accuracy and reliability. (Relevant sensors are needed. For more information, please refer to the configuration in Technical Specifications.）
- Universal power input for easy access

Software

- **Interface:** Windows-based operating interface
- **Statistics:** easy calculation for historical results, instrument usage, energy consumption, and large statistical information
- **Data Comparison:** by presetting target value and range, the system automatically generates data comparison after each test and intelligently judges whether the specimen passes or fails the test
- **Test Report:** can provide detailed test reports in various customized patterns
- **Energy Consumption and Test Status Monitoring (Additional Sensors Required):** the system monitors and displays real-time voltage, current, energy consumption of instrument as well as ambient temperature and relative humidity during the test, which serves to evaluate test data reliability
- **User Management:** multi-level account management for better data management and protection
- **Operation Log:** system automatically records all the operations by the user, which is easy to review

Test Principle

❖ Mount the preconditioned specimen between the test chambers. Oxygen flows in one side of the film, and nitrogen flows on the other side. The oxygen molecules permeate through the film and into the nitrogen side, and are then carried to the sensor by the flowing nitrogen. By analyzing the oxygen concentration measured by the sensor, oxygen transmission rate and other parameters can be calculated. As to packages, nitrogen flows inside the packages, and oxygen flows outside the packages.

❖ This instrument conforms to the following standards:
ASTM F2622, ASTM F1307, ASTM F1927, ASTM D3985, ISO 15105-2, GB /T 19789, JIS K7126-2, YBB 00082003

Applications

This instrument can be used to test oxygen transmission rate of:

Basic Applications	Films	Including plastic films, plastic composite films, paper-plastic composite films, coextruded films, aluminized films, aluminum foils, aluminum composite films, and many others
	Sheeting	Including various sorts of engineering plastics, rubber, and building materials, e.g. PP, PVDC and nylon
	Packages	Including plastics, rubber, paper, paper-plastic composite, glass, and metal packages, e.g. Coke bottles, peanut oil packages, Tetra Pak materials, vacuum bags, metal three-piece cans, plastic packages for cosmetics, soft tube for toothpaste, jelly and yogurt cups
Extended Applications (Additional Accessories Required)	Package Caps	Test seal performance of different package caps
	Solar Back-Sheets	Including solar back-sheets
	Plastic Pipes	Including various sorts of pipes, e.g. PPR
	Medical Blister Packs	Test oxygen transmission rate of the whole medical blister packs
	Contact Lenses	Test oxygen transmission rate of contact lenses in usage situation
	Fuel Tanks of Cars	Plastic fuel tanks are widely used in cars for its light weight, buffering vibration and easy molding characters. But its fuel permeability is the most essential factor, this instrument can be used to test permeability of plastic fuel tanks
	Battery Plastic Shell	Battery electrolyte is protected by the plastic shell from outside environment. Battery service life is directly dependent on its oxygen permeability. This instrument can be used to test oxygen transmission rate of battery plastic shell
	Pharmaceutical Bottles	Including various drug bottles and pharmaceutical bottles
	Rubber Ball Materials	Including basketball, football and volleyball

Technical Specifications

	Item	Film Test	Package Test (Optional)	Contact Lens Test (Optional)
Test Specs	Test Range	0.01 ~ 1000 $cm^3/ m^2 \cdot d$ 0.1 ~ 10,000 $cm^3/ m^2 \cdot d$ (Optional)	0.0001 ~ 10 $cm^3/ pkg \cdot d$ (Standard)	$3x10^{-11}$ ~ $4.94x10^{-7}$ $cm^3/cm^2 \cdot s \cdot mmHg$ (or $2x10^{-11}$ ~ $3.7x10^{-7}$ $cm^3/cm^2 \cdot s \cdot hPa$)

	Resolution	0.01 cm^3/ m^2•d	0.0001 cm^3/ pkg•d	$2.47x10^{-11}$ cm^3/cm^2·s·mmHg (or $1.85x10^{-11}cm^3/cm^2$·s·hPa)
	Test Temperature	15°C ~ 55°C(Optional)	23±2 °C(Standard)	35±0.5 °C (Standard) 5 °C ~ 95 °C(Optional)
	Accuracy	±0.1 °C		
	Test Humidity (Optional)	0% RH, 15% RH ~ 90% RH, 100% RH (Optional)	50% RH (Standard) 0% RH, 15% RH ~ 90% RH, 100% RH(Optional)	0% RH, 15% RH ~ 90%RH, 100% RH
	Accuracy	±1% RH		±2% RH
	Number of Specimens	1~3 pieces		
	Test Area	50 cm^2	/	0.888 cm2
	Specimen Size	108 mm x 108 mm	100% O_2 Test: < φ120 mm, Height<360 mm No limitation for Air Test	/
	Specimen Specs	/	Bottle Test: Inner Diameter >φ8 mm Outer Diameter < φ42 mm Additional accessory needed for Bag or Box Test	/
Environment Monitoring Specs (Optional)	Voltage Monitoring Range	AC 0 ~ 250 V, with ±0.5% accuracy		
	Current Monitoring Range	0 ~ 15 A, with ±0.5% accuracy		
	Energy Analysis Accuracy	±0.5%		
	Environmental Temperature Monitoring Range	-10 °C ~ 55 °C, with ±0.1 °C accuracy		
	Environmental Humidity Monitoring Range	0 ~ 100% RH, with ±2% RH accuracy		

Other Specs	Test Gas	Oxygen, air, high purity nitrogen with small amount of other gases (outside of supply scope)
	Carrier Gas	High purity nitrogen (no less than 99.999%)
	Port Size	1/8 inch Copper Tubing
	Instrument Dimension	670 mm (L) x 410 mm (W) x 310 mm (H)
	Power Supply	AC (85 ~ 264) V (47 ~ 63) Hz
	Net Weight	50 kg
Configurations	Standard	Mainframe (including Wireless Data Interface), Professional Software, LCD Monitor, Keyboard, Mouse,
	Optional	Environment Monitoring Sensors (including voltage, current, humidity, and temperature sensors), Temperature Controller, Humidity Controller, Sealing Accessories for Package Test, Hood for Package Test, Accessories for Contact Lens Test, Pressure Reducing Valve for Nitrogen, Pressure Reducing Valve for Oxygen, Printer (Compatible with PCL language)
	Online Data Management System for Packaging Testing	Wireless Data Transfer Module, High Gain Antenna

Note: 1. Gas supply ports of the instrument are 1/8 inch copper tubing and Φ4 mm PU tubing;
2. Customers will need to provide gas supply;
3. The given temperature and humidity control ranges are independently valid.

Please Note:

- ❖ Pictures used are for illustration purposes only and may differ from the actual product received.
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