

## i-Oxtra 7700 Oxygen Transmission Rate Testing System

- ❖ 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 foils, 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

- Two test modes for films and packages (accessories for package test are optional)
- Wide range and high precision temperature and humidity control, as well as dual-side humidification of the specimen, support various combinations of non-standard test conditions
- World leading pressure compensation technology ensures accurate and repeatable test results
- Standard, proportional and continuous testing modes provide suitable test method for different materials
- Equipped with catalyst deaerator to purify carrier gas and reduce system errors
- 2 types of carrier gases are available: high purity nitrogen gas or hydrogen-mixed nitrogen gas
- Convenient fast access port for temperature and humidity
- Reference film standard gas for fast and accurate calibration

## Design

- Patented integrated design of three test cells improves the test efficiency and reduces the space occupancy of the instrument.
- 3 distinct or identical specimens could be tested simultaneously with individual test results.
- The system can be easily connected with a maximum of 9 satellite bases to accomplish up to 30 tests at the same time.
- Oxygen and water vapor transmission rate can be obtained at one operation by working with Labthink's water vapor transmission rate test system together under the control of one master base.
- 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

- ❖ The preconditioned specimen is mounted between the upper and lower chambers. One chamber contains oxygen or air and the other chamber is slowly purged by a stream of nitrogen. Due to the concentration difference between the two chambers, oxygen molecules permeate through the specimen into the nitrogen side, and are then carried to the sensor. The oxygen transmission rate is then obtained by analyzing the oxygen concentration measured by the sensor. For package samples, high purity nitrogen flows inside the packages, and oxygen or air flows on the outside.
- ❖ This instrument conforms to the following standards:  
ASTM D3985, ASTM F2622, ASTM F1307, ASTM F1927, ISO 15105-2, GB/T 19789, JIS K7126-2, YBB 00082003

## Applications

This instrument is designed for test oxygen transmission rate test of:

<b>Basic Applications</b>	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, PVC and PVDC
	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 cosmetic, soft tube for toothpaste, jelly and yogurt cups
<b>Extended Applications (Additional Accessories Required)</b>	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
	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
	Red Wine Bottles	Test oxygen transmission rate of red wine bottles

## Technical Specifications

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	Item	Film Test	Package Test (optional)
Test Specs	Test Range	0.01 ~ 6500 cm <sup>3</sup> / m <sup>2</sup> •d (Standard) 0.07 ~ 65,000 cm <sup>3</sup> / m <sup>2</sup> •d (Optional)	0.0001 ~ 60 cm <sup>3</sup> / pkg•d
	Resolution	0.001 cm <sup>3</sup> / m <sup>2</sup> •d	0.00001 cm <sup>3</sup> / pkg•d
	Number of Specimens	3 pieces (with independent test results)	
	Extension	9 satellite bases (1~30 specimen tests)	
	Specimen Size	108 mm x 108 mm	One package for temperature control device: specimen should be smaller than Φ150 mm and lower than 380 mm
			Three packages for temperature control device: specimens should be smaller than Φ100 mm, and lower than 380 mm
			No size limitation for tests without temperature control device
	Specimen Thickness	≤3 mm	/
	Test Area	50 cm <sup>2</sup>	/
	Test Temperature	15 °C ~ 55 °C (Standard)	
	Accuracy	±0.1 °C (Standard)	
	Test Humidity	0% RH, 35% RH ~ 90% RH	
	Accuracy	±1% RH	
	Test Gas	O <sub>2</sub> and Air (outside of supply scope)	
	Gas Supply Pressure	0.28 MPa; 40.6 psi	
	Port Size	1/8 inch copper tubing	
	Carrier Gas	99.999% high purity nitrogen or nitrogen mixed with 2% hydrogen (outside of supply scope)	
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	Instrument 690 mm (L) x 350 mm (W) x 360 mm (H)	

<b>Configurations</b>	Dimension	
	Power Supply	AC (85 ~ 264) V (47 ~ 63) Hz
	Net Weight	71 kg
	Standard	Mainframe (including Wireless Data Interface), Professional Software, LCD Monitor, Keyboard, Mouse, Vacuum Grease, Diamond Sampling Template, Valve Sets
	Optional	Environment Monitoring Sensors (including voltage, current and humidity sensor), Satellite Base, Accessories for Package Test, Temperature Control Device for Package Test, Reference Film, Sample Cutter, Vacuum Grease, and Printer (Compatible with PCL3)
	Online Data Management System for Packaging Testing	Wireless Data Transfer Module, and High Gain Antenna

**Please Note:**

- ❖ Pictures used are for illustration purposes only and may differ from the actual product received.
- ❖ Labthink International is always dedicated to the innovation and improvement of product performance and function. Therefore, technical specifications are subject to change without further notice. Please visit our website at [www.labthink.com](http://www.labthink.com) for the latest updates. Labthink International reserves the rights of final interpretation and revision.