8000 Oxygen Permeation Analyzers

SYSTECH illinois

Modular systems for precision oxygen analysis of packaging film barriers

Applications

Barrier Film PET Bottles Containers Canisters Flexible pouches Bags

Features & Benefits

- Analytical Systems Manufactured Traceable to NIST.
- System validation with certified gas or film for speed and convenience.
- Widest measuring range in the market providing research grade flexibility.
- Flow, temperature and humidity control for ultimate responsiveness and repeatability.
- Coulometric oxygen sensor enhances analytical precision.
- Intuitive Windows based software.
- Fastest permeation results.
- 8001 e-net - the Remote Consultant™ guidance utility saves time and money.
- No liquid coolants, catalysts or special gas mixtures required.

Conforms to: ASTM F2622-08 D-3985 F-1927 F-1307 ISO 15105-2 DIN 53380 JIS K-7126

Widest measuring range

All 8000 Series analyzers offer the widest measurement range in the market providing:

- Research grade flexibility.
- Research grade accuracy and repeatability.
- Quality Assurance orientated speed and agility.
- Measurement Range ranging from 0.005 cc/m^2/day to 432,000 (8001e-net & 8001L). 0.008 cc/m2/day to 432,000 (8001/2 & 3).
- Up to five Expansion Modules available to increase testing throughput.

Coulometric oxygen sensor

- Extremely fast purge down time.
- Accurate readings at the lowest levels enhancing analytical precision.
- The highest quality sensor in the market with the lowest replacement cost.

Laboratory Testing Services

Our test laboratory will perform your Permeation Testing Analysis. Whether you are developing innovative materials and packages or validating that your supplier is meeting specification.
We can exceed your expectations with:

- Competitive Prices
- Fast Turnaround
- Independent non-biased results
- 25 Years Experience

Precision control

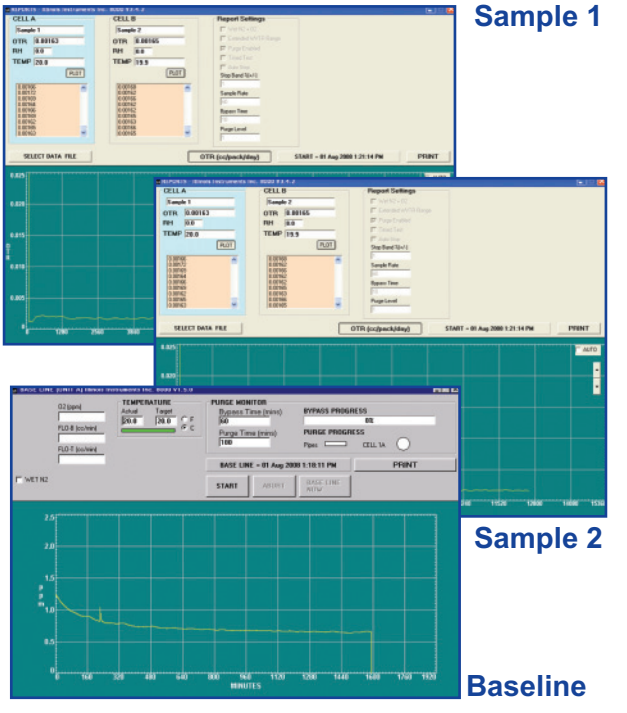
The 8000 Series analyzers offers precision temperature and humidification flow control providing ultimate responsiveness and repeatability.

- Test gas and carrier gas flow is controlled by premium electronic flow controllers.
- Widest sample temperature range available - 41°F to 122°F.
- Most measurable and controllable Relative Humidity range 20% to 90% RH.
- Fastest changeover from wet to dry sample runs.
- No need for archaic liquid coolants, catalysts or expensive gas mixtures - just simple Nitrogen and Oxygen.

Software

The intuitive Windows based software offers:

- Easy input and recall of operating parameters and test protocols.
- User-friendly data tracking, searches, sorts, storage and output capabilities.
- Complete system diagnostics.



Sample 1

Sample 2

Baseline

Test Results

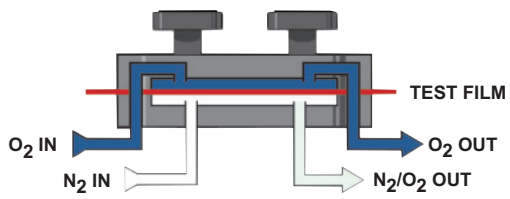
Customer	High Quality Barrier Package			
Date	16/07/2009			
Instrument	Model 8001			
	OTR	Test Conditions		
Sample	cc/pack/day	Temperature	RH Air	RH N_2
Sample 1	0.00163	Room	Room	0%
Sample 2	0.00165	Room	Room	0%

Room temperature during the test: 73.4°F
Air RH during the test: 35-45%

Principle of Operation

Utilizing our proprietary coulometric sensor technology to detect oxygen transmission rates samples are clamped or attached to a diffusion chamber. Pure oxygen (99.9%) is then introduced into the upper half of the chamber while an oxygen-free carrier gas flows through the lower half.

Molecules of oxygen diffusing through the sample into the lower chamber are conveyed to the sensor by the carrier gas.



This allows a direct measurement of the oxygen without using complex extrapolations. Oxygen transmission rate of the test sample is displayed as either cc/m²/day or cc/100in²/day.

New to the 8000 Oxygen Permeation Range

8001L

Incorporates the benefits of the new 'L' coulometric oxygen sensor.

- New oxygen sensor enhances analytical precision.
- Widest measuring range in the market providing research grade flexibility.
- Up to five Expansion Modules available to increase testing throughput.

8700 Versatile Analysis

The ultimate solution for fast and reliable oxygen permeation testing for multiple bottles, packages or films.

- Avoid production scrap and expensive re-work costs
- Measurement of 11 samples simultaneously - individually started, stopped or delayed.
- Expandable to 66 measurement chambers when higher throughput is required.
- Ultra fast testing within 3 - 12 hours - Illinois's Turbopurge technology ensures the fastest stabilisation time possible.
- Modular adapters can be installed in seconds, making this the most versatile package analyzer available.
- High level of stability and performance with a measuring range of 0.00004 - 1000cc/pack/day.
- Simple Windows based software control with an intuitive menu structure, allows each chamber to operate independently.

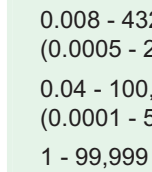
8000 Series - Oxygen Permeation Analyzers

Systech Illinois' range meets the requirement for the testing of any application.

8001 533 x 533 x 305(mm) 28.1kg
2 stations for films or packages, precise humidity control, can switch between wet or dry samples within minutes.

8001L 533 x 533 x 305(mm) 28.1kg
As 8001, with new coulometric oxygen sensor.

8002 533 x 533 x 305(mm) 28.1kg
As 8001, but tests only dry or wet (assumed 100% RH).



8003 533 x 533 x 305(mm) 28.1kg
As 8001, but tests dry only.

8200 533 x 533 x 305(mm) 28.1kg
2 station for films or packages.

8501 356 x 356 x 279 (mm) 18.2kg
Reduced specification single station for film or package, dry test only.

8700 760 x 590 x 350 (mm) 65kg
11 stations for films or packages.

Technical Specifications

	8001	8001L	8002	8003	8200	8501	8700
OTR Test Range							
Films							
0.005 - 432,000 cc/m²/day (0.0003 - 28,000 cc/100in²/day) No masking required		✓					
0.008 - 432,000 cc/m²/day (0.0005 - 28,000 cc/100in²/day) No masking required	✓		✓	✓			
0.04 - 100,000 cc/m²/day (0.0001 - 5,000 cc/100in²/day) No masking required					✓		✓
1 - 99,999 cc/m²/day (0.07 - 6,800 cc/100in²/day) No masking required						✓	
Package							
0.000025 - 1,000 cc/pack/day		✓					
0.00004 - 1,000 cc/pack/day	✓		✓	✓	✓		✓
Test Temperature Range							
41°F to 122°F (5°C to 50°C)	✓	✓	✓	✓	ambient		ambient
59°F to 104°F (15°C to 40°C)						✓	
Controlled RH Testing							
Dry (0% RH) or generated RH (20% to 90%)	✓	✓					
Dry and Unknown Wet RH (Assumed saturated or 100% RH)			✓				✓
Dry only				✓	✓	✓	✓
Expansion							
Expandable up to 5 Modules (Total 12 test cells)	✓	✓	✓	✓	✓		
Expandable up to 5 Modules (Total 66 test cells)							✓
Test Sample Size							
Films 50cm²	✓	✓	✓	✓			✓
Films 100cm²						✓	
Packages	✓	✓	✓	✓	✓		
Calibration							
Films or NIST gas	✓	✓	✓	✓	✓	✓	✓
Automatic Temperature Control	✓	✓	✓	✓	ambient	✓	ambient
Power rating							
100-240 VAC, 50/60 Hz, 840 VA (max)	✓	✓	✓	✓	✓		
100-240 VAC, 50/60 Hz, 150 VA (max)						✓	✓

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Systech Illinois reserve the right to change specifications without notice. 2011/06