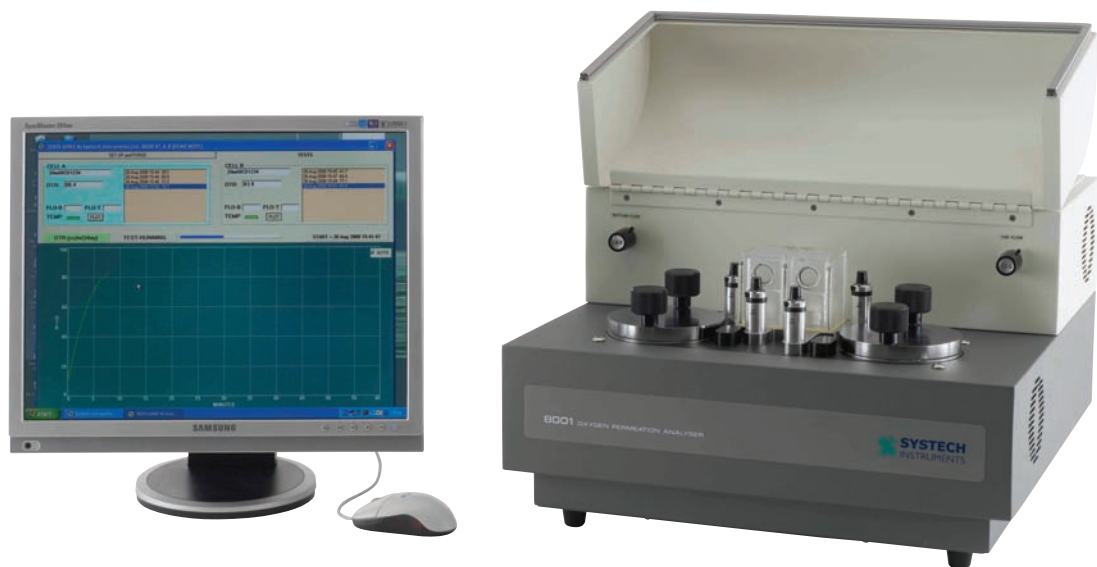


Modular systems for precision oxygen analysis of packaging film barriers



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 measurement range in the market.
- Flow, temperature and humidity control for ultimate responsiveness and repeatability.
- Fast permeation results.
- Coulometric oxygen sensor enhances analytical precision.
- Intuitive Windows based software.
- For medical and pharmaceutical permeation testing, we offer software which conforms to 21CFR Part 11.
- No liquid coolants, catalysts or special gas mixtures required.

Widest measuring range

System Illinois 8000 Series analysers offer the widest measurement range in the market.

- Ideal for research and development testing with accurate and repeatable results.
- Offers the speed required for use in Quality Control testing.
- Measurement Range from 0.005 cc/m²/day to 432,000 (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 and precise readings at the lowest levels.
- The highest quality sensor in the market with the lowest replacement cost.

Laboratory Testing Services

Our test laboratory will perform your Permeation Testing. 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

Our leading analysers offer precision temperature, humidity and flow control providing consistent and repeatable test conditions.

- Test gas and carrier gas flow is controlled by premium electronic mass flow controllers.
- Wide sample temperature range from 5°C to 50°C.
- Fastest changeover from wet to dry sample runs.
- The precise Relative Humidity control offers a range of 0 to 100%, controllable between 20 to 90% RH.
- No need for liquid coolants, catalysts or expensive gas mixtures - just simple Nitrogen and Oxygen.

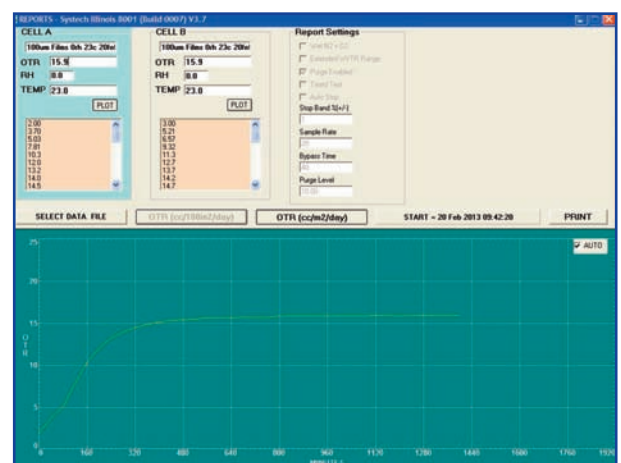
Software

The intuitive Windows based software offers:

- Easy input and recall of operating parameters and test protocols.
- User-friendly data acquisition and storage for quick results.
- Complete system diagnostics.

Test Results

Customer	High Quality Barrier Films		
Date	20/02/2012		
Instrument	Model 8001		
	OTR	Test Conditions	
Sample	cc/m ² /day	Temperature	RH
Sample 1	14.5	23°C	0%
Sample 2	14	23°C	0%

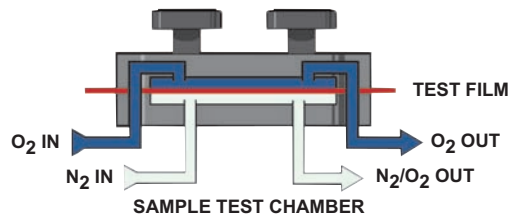


Sample 1

Principle of Operation

Utilising 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 $\text{cc}/\text{m}^2/\text{day}$ or $\text{cc}/100\text{in}^2/\text{day}$.

New to the 8000 Oxygen Permeation Range

8001L

Combines the outstanding quality of the model 8001 with the benefits of the new 'L' coulometric oxygen sensor.

- New oxygen sensor enhances analytical precision.
- Widest oxygen permeability measurement range in the market.
- Up to five Expansion Modules available to increase testing throughput.

8700 & 8701 range for bottles and packages

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

- Saves out-of-specification production time.
- Measurement of 11 samples simultaneously - individually started, stopped or delayed.
- Expandable to 66 measurement stations (using up to 5 expansion units) when higher throughput is required.
- Ultra fast testing within 3 - 12 hours - Systech Illinois' Turbopurge™ technology ensures the fastest stabilisation time.
- Modular adaptors can be installed in seconds, making this the most versatile package analyser available.
- High level of stability and performance with a measuring range of 0.00004 - 2000cc/pack/day.
- Simple Windows based software control with an intuitive menu structure, allows each chamber to operate independently.



8000 Series - Oxygen Permeation Analysers

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) 25.4kg
2 station for films or packages, dry
test only.



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 testing bottles.



8701

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

Technical Specifications

8001 8001L 8002 8003 8200 8501 8700

	8001	8001L	8002	8003	8200	8501	8700
OTR Test Range							
Films							
0.005 - 432,000 cc/m ² /day (0.0003 - 28,000 cc/100in ² /day) No masking required		✓					
0.008 - 432,000 cc/m ² /day (0.0005 - 28,000 cc/100in ² /day) No masking required	✓		✓	✓			
0.04 - 100,000 cc/m ² /day (0.0001 - 5,000 cc/100in ² /day) No masking required					✓		✓
1 - 99,999 cc/m ² /day (0.07 - 6,800 cc/100in ² /day) No masking required						✓	
Package							
0.000025 - 2,000 cc/pack/day		✓					
0.00004 - 2,000 cc/pack/day	✓		✓	✓	✓		✓
Test Temperature Range							
5°C to 50°C (41°F to 122°F)	✓	✓	✓	✓	ambient		ambient
15°C to 40°C (59°F to 104°F)						✓	
Controlled RH Testing							
Dry (0% RH) or generated RH (20% to 90%)	✓	✓					
Dry or assumed saturated 100% RH			✓	✓	✓	✓	✓
Dry only				✓	✓	✓	✓
Expansion							
Expandable up to 5 Modules (Total 12 test chambers)	✓	✓	✓	✓	✓		
Expandable up to 5 Modules (Total 66 test stations)							✓
Test Sample Size							
Films 50cm ²	✓	✓	✓	✓	✓		✓
Films 100cm ²						✓	
Packages	✓	✓	✓	✓	✓		✓
Calibration							
NIST referenced films and certified gases	✓	✓	✓	✓	✓	✓	✓
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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