



# **OX-TRAN® 2/22 SERIES** **OXYGEN PERMEATION ANALYZER**

High Performance OTR Testing for Barrier Films & Packages

## OTR Barrier Measurements... Done Right.



### High Performance Oxygen Permeation Analyzer

The OX-TRAN 2/22 series of high-performance analyzers provide the highest accuracy and lowest level of Oxygen Transmission Rate (OTR) detection on the market. With three different models they can test both films and packages from low- to ultra-high-level barriers. The analyzers are easy-to-use and offer the shortest test times available with the AMETEK MOCON patented Coulox sensor. They feature two independent cells with changeable horizontal test cartridges that allow a wide variety of sample sizes and types to be tested.

Models	Barrier Level	Detection Range
2/22 H	Low to high	0.05 to 200 cc/(m <sup>2</sup> · day)
2/22 L	Low to higher	0.005 to 200 cc/(m <sup>2</sup> · day)
2/22 10X	Low to ultra-high	0.0005 to 200 cc (m <sup>2</sup> · day)

### Coulox® Sensor

The OX-TRAN 2/22 Series use AMETEK MOCON's patented Coulox sensor which is an absolute (intrinsic) coulometric sensor requiring no calibration and is the basis for the ASTM standard D3985. It is the only instrument family proven to meet ASTM's precision and bias requirement through independent and 3rd party testing.

*Interchangeable cartridge options such as package adapter, edge effect and reduced area cartridges expand testing capabilities*



### Extensive Testing Capabilities and Applications

The accuracy and wide testing capability of the 2/22 Series make it an ideal OTR instrument for both research and development or production support laboratories. It has the capability to test from mono-layer to multi-layer films, coated films to coated paper board, and specialty applications such as gels or lotions. With the optional adapter cartridge it can also test complete or partial packages, flexible or rigid containers, bottles/closures, and seals in the form of O-rings or gaskets. The interchangeable cartridges also work with other Next Generation AMETEK MOCON permeation analyzers. These purpose-built cartridges increase accuracy, extend the range, or make it possible to test unique or difficult samples.

### Removable Cartridges

- Easy sample prep on the bench-top
- One button release and loading
- Pneumatic clamping provides more repeatable results
- Interchangeable cartridge options for different applications

### TruSeal®

- Gas flushing of sample mounting seal protects chamber integrity
- Lowers background oxygen level reducing need to run individual zero
- Shortened testing time increases throughput
- More repeatable results

### Control Features

- Fully automated flow, temp, & RH control throughout tests
- Automatic test method development and recommendations
- Programmable multi-test sequencing
- Built-in sensor protection

## Advanced Control System

The user friendly WinPerm 2 control system features fully automated testing including temperature, gas flow and RH control. Final test reports are automatically saved and can be set to automatically print and export to permanent storage directories. The analyzer is compatible with PermWare™, your complete permeation laboratory data management system. The test mode options make testing known or unknown samples easy and repeatable. A single button push initiates a fully automated test following pre-set stored parameters, reducing operator variability. The intuitive color touch screen is easy to learn and use while the automated testing provides consistent results and fewer potential errors.

## Accuracy in Oxygen Permeation Testing

The OX-TRAN 2/22 series analyzers feature our exclusive test cell drawer design with two horizontal removable easy-to-load cartridges improve test repeatability. A single button opens and closes the drawers, and the cartridge is automatically clamped in place with consistent and even force on any sample thickness. This approach provides greater test repeatability than manual or cam clamping methods. All test cartridges incorporate AMETEK MOCON's exclusive TruSeal® design that utilizes two seals and flushes gas between them to prevent ambient ingress into the test area. This reduces background levels, improves repeatability, and reduces the need to run individual zero.

*Auto-Test mode automatically adjusts the testing parameters to provide results for unknown samples*



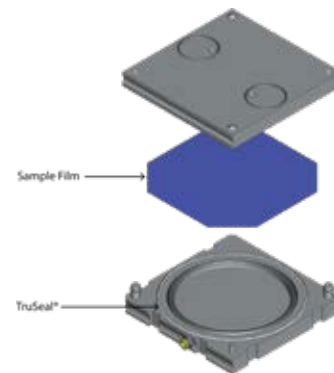
*Advanced-Test mode is the most commonly used and is for specific parameters and conditions*



*Sequential testing allows a series of tests to be performed on the same samples at different test conditions*

Sequential Test Parameters			
Parameter Values			
#	Temperature	Test Gas RH	Carrier Gas RH
1	23.0 °C	0.0 %RH	0.0 %RH
2	25.0 °C	5.0 %RH	60.0 %RH
3	33.0 °C	90.0 %RH	90.0 %RH
4	38.0 °C	60.0 %RH	90.0 %RH

*Removable cartridge utilizes central pneumatic clamp and TruSeal to provide repeatable results*



## Touchscreen Interface

- Intuitive automated operation requires less training
- Built in multi-level user management and data security
- Event log & trouble shooting guide
- Save on valuable lab space by eliminating need for PC

## Coulox® Sensor

- Short exam times reduces overall test time to increase throughput
- Longest life oxygen permeation absolute coulometric sensor
- More accurate and repeatable results vs. sensors that require calibration
- Complies with ASTM D3985

## Warranty

- Full 100% parts and workmanship warranty for 12 months
- Exclusive 4-year warranty on the Coulox sensor

# OX-TRAN 2/22 SERIES SPECIFICATIONS

## Industry Standards

- ASTM D3985
- ASTM F2622
- ASTM F1307
- ASTM F1927
- ISO CD 15105-2
- JIS K-7126-B
- DIN 53380-3
- GB/T 19789-2005
- GB/T 31354-2014

## Conformance Standards

- CE, UL, CSA Safety Compliance

## Performance Specifications

Test Temperature Range	10°C to 40°C ± 0.2°C
Controlled RH Testing Ranges	0%, 5 to 90% ± 3%
Maximum Film Thickness	Up to 120 mil
Carrier Gas	Nitrogen/Hydrogen Mix (98%/2%)
Test Gas	100% Oxygen (99.9% pure)

## Connectivity

- Port
- 2 USB Ports
- Optional PERM-NET Lite™ for remote monitoring

## Dimensions & Weight

Depth: 23" or 58,0 cm  
 Width: 12" or 30,4 cm  
 Height: 15.5" or 39,4 cm  
 Weight 95 lbs. or 43,1 kg

## Accessories

- Reduced area cartridge
- Edge effect cartridge
- Blister testing cartridge
- Package testing adapter
- Custom engineered test cartridges
- PermWare™ software for data collection and remote monitoring

## Technical Specifications

Models		Test Ranges			Resolution	Repeatability
		cc/(m <sup>2</sup> · day)	cc/(100 in <sup>2</sup> · day)	cc/(pkg · day)	cc/(m <sup>2</sup> · day) @ 50cm <sup>2</sup>	cc/(m <sup>2</sup> · day)
2/22 H	Normal (50cm <sup>2</sup> )	0.05 to 200	0.003 to 12.9	0.00025 to 1.0	0.0001	0.02 or 1%*
	Reduced Area Cartridge (5.64cm <sup>2</sup> )	0.44 to 1770	0.027 to 114.0	-	-	-
2/22 L	Normal (50cm <sup>2</sup> )	0.005 to 200	0.0003 to 12.9	0.000025 to 1.0	0.0001	0.002 or 1%*
	Reduced Area Cartridge (5.64cm <sup>2</sup> )	0.044 to 1770	0.0027 to 114.0	-	-	-
2/22 10X	Normal (50cm <sup>2</sup> )	0.0005 to 200	0.00003 to 12.9	0.0000025 to 1.0	0.0001	0.0005 or 1%*
	Reduced Area Cartridge (5.64cm <sup>2</sup> )	0.0044 to 1770	0.00027 to 114.0	-	-	-

\* Whichever is greater