



NEW 1-cell OTR/WVTR models

OX-TRAN[®] 2/22 & AQUATRAN[®] 3/34 OXYGEN AND WATER VAPOR PERMEATION ANALYZERS



Entry-level oxygen and water vapor transmission testing for barrier films and packages.



Practical Permeation Transmission Rate Measurement

The OX-TRAN® 2/22 1-cell and the AQUATRAN® 3/34 1-cell are low-cost units designed for testing Oxygen Transmission Rates (OTR) or Water Vapor Transmission Rates (WVTR) from low to high barriers. They are designed for both first-time users and advanced operators, providing accurate and repeatable test results within a wide detection range.

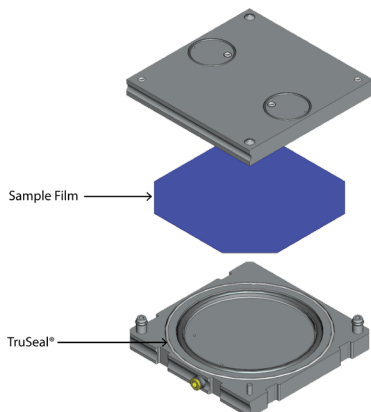
Each model is designed for high-performance film testing, with the capability for whole-package testing. They feature one test cell with a changeable horizontal test cartridge that allow testing of a wide variety of sample sizes and types.

	Models	Barrier Level	Detection Range
OTR	2/22 A	Low to moderate	0.1 to 200 cc/(m ² • day)
	2/22 H	Low to high	0.05 to 200 cc/(m ² • day)
WVTR	3/34 A	Low to moderate	0.1 to 100 g/(m ² • day)
	3/34 H	Low to high	0.05 to 100 g/(m ² • day)

Interchangeable cartridge options — like the package adapter, edge effect and reduced area cartridges — expand testing capabilities.



Removable cartridges utilize central pneumatic clamp and TruSeal® to provide repeatable results.



Interchangeable Cartridges for Testing Versatility

These instruments feature our exclusive test cell drawer design with one horizontal removable easy-to-load test cartridge that improves test repeatability. One button opens and closes the drawers, and the cartridge is automatically clamped in place with consistent force on any sample thickness. This provides greater test repeatability than manual or cam-clamping methods. With the cartridge removed, it is easy to clean and consistently load samples on the bench-top, reducing operator variability.

The interchangeable cartridges also work with other MOCON permeation analyzers. These purpose-built cartridges increase accuracy, extend the range, or make it possible to test unique or difficult samples. All test cartridges incorporate our proprietary TruSeal® design, which uses 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.

Testing Capabilities and Applications

These 1-cell models are designed to be effective yet simple-to-use instruments for a wide range of applications where low throughput is acceptable. The testing capability make them an ideal OTR or WVTR instrument to test single samples from mono-layer to multi-layer films, coated films and coated paper board. Whether it is research and development at a university or as a QC instrument to support production operations, the 1-cell modules provide reliable data to support your permeation testing needs.

Precision Measurement With Our Accurate Sensors

The OX-TRAN 2/22 uses our patented COULOX® sensor, an absolute (intrinsic) coulometric sensor requiring no calibration and the basis for ASTM standard D3985. This sensor is proven to meet ASTM's precision and bias requirement through independent and third-party testing.

The AQUATRAN 3/34 uses our patented modulated infrared (IR) technology to provide accurate and repeatable results. Short exam times reduce overall test times to increase instrument throughput. It also has the longest life of any WVTR sensor on the market and is the only modulated IR sensor system to meet ASTM standard F1249.

User-friendly Automated Testing

The WinPerm™ 2.5 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.

One push of a button initiates a fully automated test following pre-set stored parameters, reducing operator variability. The intuitive color touchscreen reduces the learning curve, while the automated testing provides consistent results and fewer errors.

The analyzer is compatible with PermWare®, a complete permeation laboratory data management system.

PermWare displays the status of multiple instruments.

DASHBOARD									
High Performance Instruments (5)									
Instrument	Status	NoZero	Cell A	Cell B	Date / Time				
OX-T 2122	Mocon 1-521	31	Cell A - Individual Zero	0.19983	117.9484	0.19102	10/20/19 11:23:19 AM	Done	
OX-T 2112	Mocon 1-521	32	Cell A - Wet Gas	0.19983	0.80000	0.00000	10/19/19 11:20:45 AM	Done	
AQU 3	Mocon AQ-1	33	Cell B - Test Completed	0.32830	125.26	2464.05	10/20/19 07:31:47 AM	Done	
PERM 3134	Mocon 3134 - 1	34	Cell B - Test Fail	0.00001	0.00000	0.00000	10/19/19 11:22:13 AM	Monitor	
OX-T 2122	Mocon ENG 77	35	Idle	0.00000	0.00000	0.00000	11/20/2019 01:33:21 PM	Running	

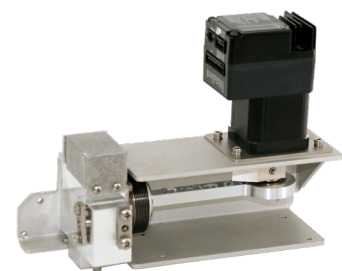
High Throughput Instruments (2)									
Instrument	Status	NoZero	Cell A.1	Cell A.2	Cell B.1	Cell B.2	Date / Time		
OX-T 2125	Mocon 1-521	37	Mocon Individual Zero	0.19983	0.85441	0.91202	0.85441	0.91202	10/20/19 11:23:19 AM
PERM 3138	Mocon 1-521	32	Cell A - Wet Gas	0.19983	0.80000	0.00000	0.80000	0.00000	10/19/19 11:20:45 AM

Package Instruments (2)									
Instrument	Status	NoZero	Cell A	Cell B	Cell C	Cell D	Date / Time		
OX-T 2140	Mocon 1-521	32	Wet Gas - Cell A	0.19983	0.85441	0.91202	0.85441	0.91202	10/20/19 11:23:19 AM
PERM 3140	Mocon PKG W-1	33	Cell D - Testing	0.19983	0.85441	0.91202	1.2532	0.58889	10/20/19 08:33:14 AM

The COULOX® sensor fully complies to ASTM D3895.



The Modulated IR sensor meets ASTM F1249.



WinPerm™ 2.5 runs on Windows® 10 OS

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 under different test conditions.

Test #	Temperature	Test Gas RH	Carrier Gas RH
1	35.0 °C	50.0 %RH	50.0 %RH
2	35.0 °C	50.0 %RH	50.0 %RH
3	40.0 °C	50.0 %RH	50.0 %RH

OX-TRAN® 2/22 & AQUATRAN® 3/34 1-CELL SPECIFICATIONS

Conformance Standards

- CE, UL, CSA safety compliance

Connectivity

- Ethernet port
- 2 USB ports

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

- PermWare® software for data collection and remote monitoring
- Test cartridges to expand capabilities:
 - Reduced area cartridge
 - Edge effect cartridge
 - Blister testing cartridge
 - Package testing adapter

Performance Specifications

	2/22 A	2/22 H	3/34 A	3/34 H
Temperature Control Range	20 to 40°C ± 0.2°C			
Controlled RH Testing Ranges	0%, 30 to 90% ± 3%		100% and 50% to 90% RH ± 3 RH	
Film Thickness	Up to 120 mil, 3 mm			
Carrier Gas	Nitrogen/Hydrogen Mix (98%/2%)		Nitrogen (99.7% N ² or better)	
Test Gas	100% Oxygen (99.9% pure)		Nitrogen (99.7% N ² or better)	

Warranty

- Full 100% warranty on parts and workmanship for 12 months
- Exclusive 4-year prorated warranty on the COULOX and modulated IR sensors

OX-TRAN Technical Specifications

Models		Test Ranges			Resolution	Repeatability	Industry Standards
		cc/(m ² · day)	cc/(100 in ² · day)	cc/(pkg · day)	cc/(m ² · day)	cc/(m ² · day)	
2/22 A	Normal (50 cm ²)	0.1 to 200	0.007 to 12.9	0.0005 to 1.0	0.0001	0.02 or 1%*	ASTM D3985 ASTM F1307 ASTM F1927 ASTM F2622 ISO CD 15105-2 JIS K-7126-B DIN 53380-3 GB/T 19789-2005
	Masked (5.0 cm ²)	1.0 to 2000	0.07 to 129.0	-	-	-	
2/22 H	Normal (50 cm ²)	0.05 to 200	0.003 to 12.9	0.00025 to 1.0	0.0001	0.02 or 1%*	
	Masked (5.0 cm ²)	0.5 to 2000	0.03 to 129	-	-	-	

AQUATRAN Technical Specifications

Models		Test Ranges			Resolution	Repeatability	Industry Standards
		g/(m ² · day)	g/(100 in ² · day)	cc/(pkg · day)	g/(m ² · day)	g/(m ² · day)	
3/34 A	Normal (50 cm ²)	0.1 to 100	0.006 to 6.45	0.0005 to 0.5	0.0001	0.02 or 1%*	ASTM F1249 TAPPI T557 JIS K7129 ISO 15106-2 GB/T 26253-2010 GB/T 31355-2014
	Masked (5.0 cm ²)	1.0 to 1000	0.06 to 64.5	-	-	-	
3/34 H	Normal (50 cm ²)	0.05 to 100	0.003 to 6.45	0.00025 to 0.5	0.0001	0.02 or 1%*	
	Masked (5.0 cm ²)	0.5 to 1000	0.027 to 57.2	-	-	-	

* Whichever is greater
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