



# **AQUATRAN® MODEL 3**

## **WATER VAPOR PERMEATION ANALYZER**

High Performance WVTR Testing for Barrier Films & Packages

## WVTR Barrier Measurements... Done Right.



## High Performance Water Vapor Permeation Analyzer

The AQUATRAN 3 analyzer is the industry's most trusted Water Vapor Transmission Rate (WVTR) instrument for high to ultra-high level barriers because it measures each molecule of water vapor. It features two independent cells with interchangeable horizontal test cartridges allowing a wide variety of sample sizes and types to be easily and accurately tested. This analyzer provides test results at the lowest detection level in the industry down to  $0.00005 \text{ g}/(\text{m}^2 \cdot \text{day})$ .

### AQUATRACE® Sensor

The AQUATRAN 3 uses the AMETEK MOCON's patented absolute coulometric pentoxide sensor that does not require calibration and conforms with ASTM F3299. It is the longest lasting sensor of its kind on the market. The sensor has a linear output which guarantees the highest accuracy and repeatability throughout its entire detection range.

### Extensive Testing Capability and Applications

The accuracy and low detection capability of the AQUATRAN 3 make it an ideal WVTR instrument for research and development and can be used for production support for high to ultra-high barriers. It has the capability to test mono-layer to multi-layer films, coated films, and specialty high barrier films such as solar back sheets. With an optional adapter cartridge it can be used to test packages, flexible or rigid containers, bottles/closers, encapsulation materials, solar panels, windows, OLED, blister packs, and seals in the form of O-rings or gaskets. More challenging applications such as high moisture barrier OLED flexible displays, electronics, and pharmaceutical packaging are no problem for the AQUATRAN 3. The interchangeable cartridges also work with other Next Generation analyzers. These purpose-built cartridges increase accuracy, extend the range, or make it possible to test unique or difficult samples.

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



### Removable Cartridges

- Easy sample prep on the benchtop
- One button release and loading
- Pneumatic clamping provides more repeatable results
- Interchangeable cartridge options

### TruSeal®

- Gas flushing of sample mounting seal protects chamber integrity
- Lowers background levels improving accuracy at ultra-low detection levels
- 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

AMETEK MOCON's 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.

## Accuracy in WVTR Permeation Testing

The AQUATRAN 3 features AMETEK MOCON's 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 our 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.

## Industry Pioneer

Over 40 years ago, we created the world's first multi-cell permeation instruments. For more than 14 years, MOCON's AQUATRAN analyzers have been the most trusted and longest lasting on the market. Whether you're testing high or ultra-high water vapor permeation rates for barrier films or packages, the AQUATRAN 3 analyzer is a high-performance solution for you.

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



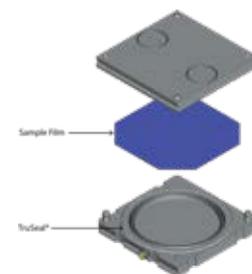
*Advanced-Test mode is the most commonly used and is for specific parameters and conditions*



*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

## AQUATRACE Sensor

- Lowest level of detection on the market down to  $5 \times 10^{-5} \text{ g}/(\text{m}^2 \cdot \text{day})$
- Longer sensor life than others on the market
- Accurate and repeatable results
- Most trusted P<sub>2</sub>O<sub>5</sub> sensor complies with ASTM F3299 and ISO 15106-3

## Warranty

- Full 100% parts and workmanship warranty for 12 months

# AQUATRAN MODEL 3 SPECIFICATIONS

## Industry Standards

- ASTM F-3299-18
- JIS K7129-3
- ISO 15106-3
- GB/T 21529-2008

## Conformance Standards

- CE, UL, CSA Safety Compliance

## Performance Specifications

<b>Test Temperature Range</b>	5°C to 50°C ± 0.2°C at 100% RH or 10°C to 40°C ± 0.2°C at 5 to 90% RH
<b>Controlled RH Testing Ranges</b>	100% and 5% to 90% RH ± 3 RH
<b>Maximum Film Thickness</b>	Up to 120 mil, 3 mm
<b>Carrier Gas</b>	Nitrogen (99.9999% N <sub>2</sub> or better)

## Connectivity

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

## Dimensions & Weight

Depth: 23" or 58,5 cm  
 Width: 23" or 58,0 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
	mg/(m <sup>2</sup> · day)	mg/(100 in <sup>2</sup> · day)	mg/(pkg · day)	mg/(m <sup>2</sup> · day)	mg/(m <sup>2</sup> · day)
<b>AQUATRAN 3</b> Normal (50cm <sup>2</sup> )	0.05 to 5000	0.0032 to 322.6	0.00025 to 25	0.01	0.05 or 1%*
Reduced Area Cartridge (5.64cm <sup>2</sup> )	0.44 to 44.000	0.028 to 2860	-	-	-

\* Whichever is greater