



# PERMATRAN-C® MODEL 4/30 CARBON DIOXIDE PERMEATION ANALYZER

High Performance CO<sub>2</sub>TR Testing for Barrier Films and Packages

## CO<sub>2</sub>TR Barrier Measurements... Done Right.



Interchangeable cartridge options such as package adapter and reduced area cartridges expand testing capabilities



### High Performance Carbon Dioxide Permeation Analyzer

The PERMATRAN-C 4/30 high-performance analyzer is a very trusted Carbon Dioxide Transmission Rate (CO<sub>2</sub>TR) instrument for low- to high-level barriers and packages. From mono-layer to multi-layer film types, bottles and closures the PERMATRAN-C 4/30 analyzer offers quick results to help drive research and development programs or to support efficient quality control operations. It features two independent cells with interchangeable horizontal test cartridges that allow a wide variety of sample sizes and types to be easily and accurately tested.

Models	Barrier Level	Detection Range
4/30 L	Low to High	0.5 to 8,000 cc/(m <sup>2</sup> · day)

#### Modulated IR Sensor

Using a patented modulated infrared (IR) technology, this sensor provides accurate and repeatable results. It has a very long life and is the only modulated sensor system to meet the ASTM F-2476 standard.

#### Versatility and Efficiency

The PERMATRAN-C 4/30 analyzer can test the Carbon Dioxide Transmission Rate (CO<sub>2</sub>TR) from low to high barriers on films, packages and bottles. Unlike manometric or Zahm-Nagel methods that require long periods of time to provide results, AMETEK MOCON's patented modulated IR sensor system allowing the C 4/30 to provide accurate results in much less time.

With the optional adapter cartridge it can also test additional applications such as complete or partial packages, flexible or rigid containers, bottles and/or closures, 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 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 reducing need to run individual zero
- Shortened testing time increases throughput
- More repeatable results

#### Control Features

- Fully automated flow and temp 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 sensor sample time. 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.

## Industry Standard in Permeation Testing

The PERMATRAN-C 4/30 features 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.

## 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

## Modulated IR Sensor

- Short exam times reduce overall test time to increase throughput
- Long life modulated IR sensor
- Accurate and repeatable results
- Most trusted IR sensor that fully complies with ASTM F-2476



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



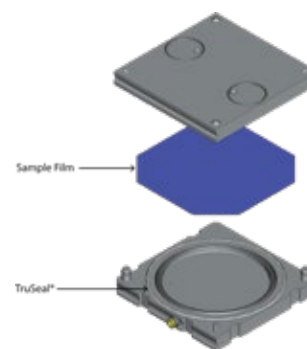
*Advanced-Test mode is the most commonly used and is for specific parameters and conditions*

Sequential Test Parameters

#	Temperature
3	40.0 °C
4	35.0 °C
5	31.0 °C
6	15.0 °C

Buttons: +, -, Cancel, Save

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



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

## Warranty

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

# PERMATRAN-C 4/30 SPECIFICATIONS

## Industry Standards

- ASTM F- 2476
- DIN 53380-4
- ISO 15105-2

## 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%
Maximum Film Thickness	Up to 120 mil, 3 mm
Carrier Gas	Nitrogen (99.7% N <sub>2</sub> or better)
Test Gas	Carbon Dioxide (99.7% CO <sub>2</sub> or better)

## Connectivity

- Ethernet 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 42,1 kg

## Accessories

- 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)	cc/(m <sup>2</sup> · day)
4/30 L	Normal (50cm <sup>2</sup> )	0.5 to 8000	0.03 to 516	0.0025 to 40	0.0001	0.25 or 2%*
	Reduced Area (5cm <sup>2</sup> )	5 to 80,000	0.3 to 5,160	-	-	-

\*Whichever is greater