



FX 3180 CupMaster
Water Vapor Transmission Rate Tester



FX 3180 CupMaster with many Benefits

The FX 3180 CupMaster determines the Water Vapor Transmission Rate of up to 15 samples simultaneously and fully automatically, using the gravimetric measuring principle. The instrument complies with ASTM E 96, ASTM D 1653, BS 3424-34, DIN 53122, EN 1931, GB 1037, GB/T 12704, ISO 2528, ISO 12572, JIS L 1099-A, JIS Z 0208, and many other Standard Test Methods.



✓ **Benefit thanks to precise and independent climate control**

A temperature/humidity sensor and a sensor for the air velocity permit very precise control of the selected climate. Compressed air is required for the operation of the instrument, but not for generating the climate. Therefore, the quality of the compressed air has no influence on the climate and the test results.

✓ **Benefit thanks to many small details**

Because compressed air is only required for raising and lowering the rotating cup tray, air consumption is negligible.

A PC is not required for the operation of the instrument, but only for the evaluation and documentation of test results. For this, the FX 3180 CupMaster can be integrated into a network, even wirelessly. Test reports can be downloaded from the internal web server of the instrument in PDF and XML formats.

The cups are fitted with a quick-release clamping ring, which ensures efficient sample preparation, but also a good seal.

And finally, the heating of the exterior of the measuring chamber prevents condensation, even in case of power failure.

✓ **Benefit thanks to automatic operation and VNC**

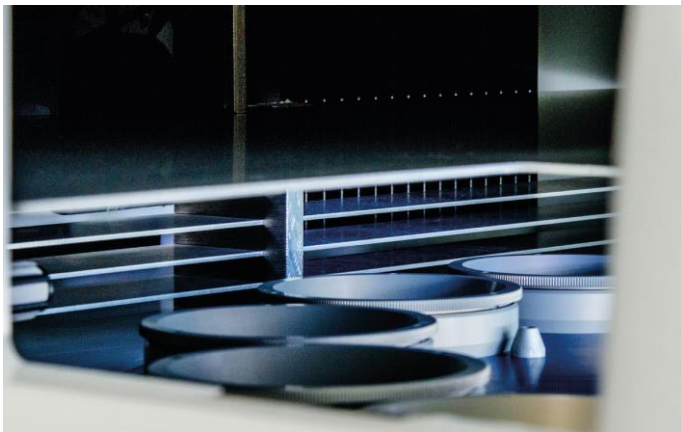
Once the cups have been inserted and the measurement has been started, the FX 3180 CupMaster works fully automatically. During the measurement, remote control and remote monitoring through VNC (Virtual Network Computing) is possible.

✓ **Benefit thanks to easy calibration**

Easy access to the weighing module (by Mettler-Toledo) and a sensor exchange program make calibration of the FX 3180 CupMaster simple and cost-effective.



Automatic operation and VNC



Precise and independent climate control

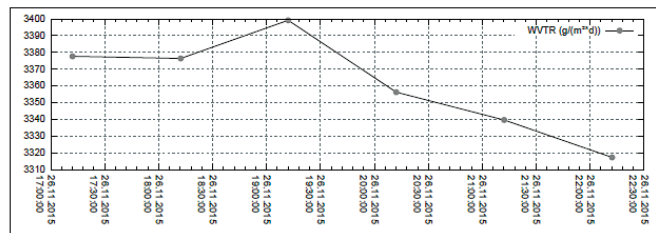


Easy calibration



Water Vapor Transmission Rate Test Gravimetric Method

Single Results	
Position:	4
Description:	GREEN DARK
Reference 1:	Normal coating
Reference 2:	Lot 4711
Thickness:	Unspecified
Reason for Stop:	Test Criterion Reached



Cup Summary: 4

The following equilibrium values have been calculated by least squares regression of the weight, modified by the dummy specimen when used.

	WVTR [g/m²/d]	WVTR [grift/h]	Permeance [ng/Pa/s/m²]	Permeance [griftHg/hft²]
Average of Values in Equilibrium	3359.6	200.7	11755.3	205.5
Minimum of Values in Equilibrium	3317.4	198.2	11607.5	202.9
Maximum of Values in Equilibrium	3399.2	203.1	11893.9	207.9
CV %	0.878	0.878	0.878	0.878

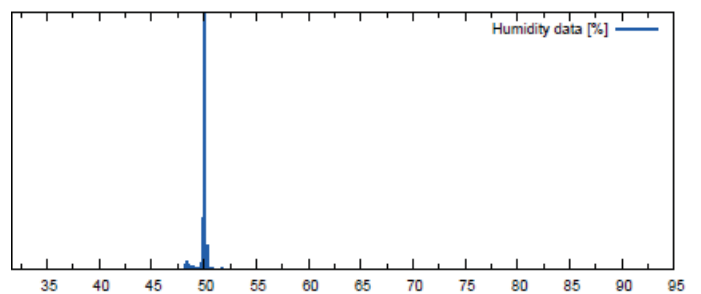
Pos.	Time (YYYY-MM-DD, HH:MM:SS)	Tare (g)	Weight (g) compensated	Weight alteration (g)	WVTR [g/m²/d]	WVTR [grift/h]
0	2015-11-26, 16:12:05	0.0000	97.6981	0.0000	0.0	0.0
1	2015-11-26, 17:12:04	0.0000	97.2760	-0.4221	3377.7	201.8
2	2015-11-26, 18:12:13	0.0000	96.8529	-0.4231	3376.4	201.7
3	2015-11-26, 19:12:02	0.0000	96.4293	-0.4236	3399.2	203.1
4	2015-11-26, 20:12:06	0.0000	96.0063	-0.4200	3356.3	200.5
5	2015-11-26, 21:12:08	0.0000	95.5916	-0.4177	3339.7	199.5
6	2015-11-26, 22:12:10	0.0000	95.1767	-0.4149	3317.4	198.2

Test report

✓ Benefits at a glance

- ✓ Precise and independent climate control
- ✓ Automatic operation and VNC
- ✓ Easy calibration
- ✓ Negligible air consumption
- ✓ No PC required for operation
- ✓ Cups with quick-release ring
- ✓ Quality instrument "Made in Switzerland"

Humidity Histogram



Humidity Histogram



Technical Specifications

• Test area	50 cm ² 28.3 or 30 cm ²	Model FX 3180-CM12 Model FX 3180-CM15
• Number of samples	12 15	Model FX 3180-CM12 Model FX 3180-CM15
• Maximum sample thickness	3 mm (thicker samples require special cups)	
• Range of the weighing module	0 to 220 g	
• Resolution of the weighing module	0.0001 g	
• Temperature range	10 °C below ambient to 40 °C	
• Humidity range	40 to 90 % r.h. 20 to 90 % r.h.	at 23 °C at 38 °C
• Air velocity	0.02 to 4.0 m/s	
• Measuring accuracy	Better than ±0.5 °C Better than ±1.5 % r.h.	Temperature Humidity
• Compressed air	5 to 8 bar	
• Dimensions (w x d x h)	120 x 80 x 60 cm	
• Net weight	109 kg	
• Power requirements	230 VAC or 100/115 VAC, 50 – 60 Hz, 1 kW	

Subject to change.

Accessories

FX 3180-CUP50-I	Cup, 50 cm ² , standard version
FX 3180-CUP30-I	Cup, 30 cm ² , standard version
FX 3180-CUP28-I	Cup, 28 cm ² , standard version
FX 3180-ADA50-I	Adapter “Inverted Cup”, 50 cm ² , standard version
FX 3180-ADA30-I	Adapter “Inverted Cup”, 30 cm ² , standard version
FX 3180-ADA28-I	Adapter “Inverted Cup”, 28 cm ² , standard version
FX 3180-SEAL50-I	Seal kit, 50 cm ² , standard version, 12 pieces
FX 3180-SEAL30-I	Seal kit, 30 cm ² , standard version, 15 pieces
FX 3180-SEAL28-I	Seal kit, 28 cm ² , standard version, 15 pieces
FX 3180-REDU	Reducer ring 50 - 30/28.3 cm ²
FX 3180-KNIFE50	Punch knife for 50 cm ² samples, incl. cutting board
FX 3180-KNIFE28/30	Punch knife for 28.3/30 cm ² samples, incl. cutting board
FX 3180-AIR	Silent compressor
FX 3180-WEIGHT50	Calibration weight 50 g, incl. calibration certificate
FX 3180-WEIGHT100	Calibration weight 100 g, incl. calibration certificate
FX 3180-WEIGHT200	Calibration weight 200 g, incl. calibration certificate
FX 3180-EVA	PC-based supplementary software