



# E-FRM-DC

## REGULATORY PM SAMPLER

### APPLICATIONS:

- CRITERIA PM SAMPLING
- AUDIT SAMPLING
- REMOTE SAMPLING
- HEALTH STUDIES
- PERIMETER SAMPLING
- REGULATORY ENFORCEMENT

The NEW and improved Met One Instruments, Inc. E-FRM-DC sampler is a single-event filter sampler to determine daily  $PM_{2.5}$  or  $PM_{10}$  particulate concentrations in ambient air.

The E-FRM-DC has an innovative design and unique features that provide a versatile, reliable, and simple platform for your ambient air sampling needs. This versatile instrument is used for fixed or portable ambient particulate sampling applications. The E-FRM-DC sampler is designed for easy setup and deployment, which allows it to be used for either permanent long-term sampling at a fixed site or as an audit sampler for frequent relocation.

The E-FRM-DC can be configured for  $PM_{10}$  as well as TSP,  $PM_{1}$ , and  $PM_{2.5}$  as optional accessories. Featuring modern components paired with innovative design and state-of-the-art manufacturing practices, the E-FRM-DC is the premier single event sampler in the industry of particulate collection. The E-FRM-DC is ideal for Environmental Monitoring, Perimeter Sampling, and Industrial Monitoring.

The E-FRM-DC user interface is a full-color, 4.3" graphical touchscreen which utilizes intuitive control. The touchscreen was developed specifically to satisfy the recommendations of instrumentation operators. Data can be retrieved through any serial compatible data acquisition system or easily downloaded and transported with the filter on a USB drive.



## FEATURES:

- Designed and tested to meet all current EPA PM<sub>2.5</sub> Federal Reference Method specifications.
- Accommodates one EPA PM<sub>2.5</sub> reference method 47mm sample filter cassette.
- Compatible with the VSCC™ cyclone or the classic WINS Impactor for PM<sub>2.5</sub> sampling.
- Manufactured and supported in the United States at our ISO-9001 certified facilities.



## INCLUDED ACCESSORIES:

- ✓ BX-802 EPA PM<sub>10</sub> Inlet
- ✓ BX-305 Leak Test Valve
- ✓ 81210 PM<sub>10</sub> Adapter
- ✓ 460128 FRM Filter Cassette (1 included with sampler)
- ✓ 460122 FRM 47mm PTFE Filters
- ✓ 80866-1 Ambient Temperature Sensor
- ✓ 82537-2 Aluminum Stand
- ✓ Operator's Manual
- ✓ Software

## OPTIONAL ACCESSORIES:

- BX-808 PM<sub>2.5</sub> VSCC™
- Cyclone BX-804 PM<sub>2.5</sub> WINS Impactor
- BX-811 PM<sub>1</sub> Cyclone
- BX-803 TSP Inlet
- BX-307 Flow Calibrator



## SPECIFICATIONS

## E-FRM-DC

<b>Measurement Principle</b>	Programmable-event filter sampler for determination of particulate matter concentrations
<b>Resulting Data Units</b>	Micrograms per actual or standard cubic meter $\mu\text{g}/\text{m}^3$ . Calculated from lab filter weights and actual or standard sampled volumes.
<b>Design Specifications</b>	Title 40 CFR, Part 50 Appendix L
<b>U.S. EPA Designations</b>	RFPS-0315-221, RFPS-0216-231, RFPS-0316-232
<b>Main Inlet Type</b>	EPA-pattern $\text{PM}_{10}$ size-selective louvered inlet standard (MOI part no. BX-802)
<b><math>\text{PM}_{2.5}</math> Separator Type</b>	Options: BX-808 Very Sharp Cut Cyclone or BX-804 WINS Impactor
<b><math>\text{PM}_{10}</math> Sampling Configuration</b>	Pass-through tube (used in place of cyclone) included for $\text{PM}_{10}$ sampling.
<b>Other Configurations</b>	Compatible with $\text{PM}_{2.5}$ or $\text{PM}_1$ SCC cyclones. TSP inlet available.
<b>Filter Type</b>	47mm PTFE disc filters standard. Other filter material types available.
<b>Filter Holder</b>	Accommodates standard EPA-pattern white Delrin filter cassettes.
<b>Filter Temperature Control</b>	Filter Temp within $5^\circ\text{C}$ of ambient during sampling and standby. Logged in data.
<b>Operating Temperature</b>	$-30$ to $+50^\circ\text{C}$ Ambient
<b>Operating Pressure</b>	400 to 800 mm Hg, Ambient
<b>Sample Events</b>	24 hour samples standard. Programmable start date, time and duration.
<b>Flow Rate</b>	16.67 L/min (1 $\text{m}^3/\text{hr.}$ ). With flow sensor and real-time actual flow control.
<b>Flow Accuracy</b>	$\pm 2\%$ ( $\pm 0.33$ L/min)
<b>Flow Records</b>	Flow rate, temperature, pressure logged in 5 minute intervals.
<b>Vacuum Pump</b>	Single-head diaphragm 12 VDC pump
<b>Data Collection</b>	RS-232 port (9-pin). USB data port. USB flash drive port. Software supplied.
<b>Memory Capacity</b>	24 sample events
<b>Compatible Software</b>	FSCommAQ
<b>User Interface</b>	4.3" graphical touch screen
<b>Enclosure Type</b>	Active fan ventilation
<b>Deployed Dimensions</b>	2.0 meters (78.75") high, 65.5 cm (25.75") wide, 64.1 cm (25.25") deep
<b>Footprint Dimensions</b>	65.5 cm (25.75") wide, 64.1 cm (25.25") deep
<b>Weight</b>	Sampler 33 Lbs (except $\text{PM}_{10}$ inlet head); Stand 10.5 Lbs
<b>External Power Supply</b>	Input: 100- 240 VAC, 50/60 Hz, 1.4 A; Output: 12 VDC, 8.5 A (102 W) Maximum
<b>E-FRM-DC Power</b>	12 VDC @ 2.75 A (33 W) Maximum

*Specifications are subject to change at any time.*