

 **Met One Instruments, Inc.**

E-FRM-DC Sampler

The New and Improved Met One Instruments E-FRM-DC sampler is a single-event filter sampler for the determination of daily PM_{2.5} or PM₁₀ particulate concentrations in ambient air.

The E-FRM-DC has an innovative design and unique features 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 also designed for easy setup and deployment. This 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_{2.5} and PM₁₀ as well as TSP and PM₁ with 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. 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 MODBUS compatible data acquisition system or can be easily downloaded and transported with your filter on a USB drive.



Applications:

- Criteria PM Sampling
- Audit Sampling
- Remote Sampling Applications
- Health Studies
- Perimeter Sampling
- Regulatory Enforcement



E-FRM-DC Sampler

Measurement Principle:	Programmable-event filter sampler for determination of particulate matter concentrations
Resulting Data Units:	Micrograms per actual or standard cubic meter $\mu\text{g}/\text{m}^3$. Calculated from lab filter weights and actual or standard sampled volumes.
Design Specifications:	Title 40 CFR, Part 50 Appendix L
U.S. EPA Designations:	RFPS-0315-221, RFPS-0216-231, RFPS-0316-232
Main Inlet Type:	EPA-pattern PM_{10} size-selective louvered inlet standard (MOI part no. BX-802)
$\text{PM}_{2.5}$ Separator Type:	Options: BX-808 Very Sharp Cut Cyclone or BX-804 WINS Impactor
PM_{10} Sampling Config:	Pass-through tube (used in place of cyclone) included for PM_{10} sampling.
Other Configurations:	Compatible with $\text{PM}_{2.5}$ or PM_1 SCC cyclones. TSP inlet available.
Filter Type:	47mm PTFE disc filters standard. Other filter material types available.
Filter Holder:	Accommodates standard EPA-pattern white Delrin filter cassettes.
Filter Temp Control:	Filter Temp within 5°C of ambient during sampling and standby. Logged in data.
Operating Temperature:	-30 to $+50^\circ\text{C}$ Ambient
Operating Pressure:	400 to 800 mmHg, Ambient
Sample Events:	24 hour samples standard. Programmable start date/time and duration.
Flow Rate:	16.67 L/min ($1 \text{ m}^3/\text{hr.}$). With flow sensor and real-time actual flow control.
Flow Accuracy:	$\pm 2\%$ ($\pm 33 \text{ L/min}$)
Flow Records:	Flow rate, temperature, pressure logged in 5 minute intervals.
Vacuum Pump:	Single-head diaphragm 12 VDC pump
Data Collection:	RS-232 port (9-pin). USB data port. USB flash drive port. Software supplied.
Memory Capacity:	24 sample events
Compatible Software:	FSCommAQ
User Interface:	4.3" graphical touch screen
Enclosure Type:	Active fan ventilation
Deployed Dimensions:	2.0 meters (78.75") high, 65.5 cm (25.75") wide, 64.1 cm (25.25") deep
Footprint Dimensions	65.5 cm (25.75") wide, 64.1 cm (25.25") deep
Weight:	Sampler 33 lb (except PM_{10} inlet head); Stand 10.5 lb
Power:	100 to 240VAC, 33W nominal (2.75A)

Features

- Designed and tested to meet all current EPA $\text{PM}_{2.5}$ Federal Reference Method specifications.
- Accommodates one EPA $\text{PM}_{2.5}$ reference method 47mm sample filter cassette.
- Compatible with the VSCCTM cyclone or the classic WINS Impactor for $\text{PM}_{2.5}$ sampling.
- Manufactured and supported in the United States at out ISO-9001 certified facilities.

Accessories

BX-802 EPA PM_{10} Inlet
 BX-808 $\text{PM}_{2.5}$ VSCC™ Cyclone (standard unless specified)
 BX-804 $\text{PM}_{2.5}$ WINS Impactor (optional)
 BX-811 PM_1 Cyclone (optional)
 BX-803 TSP Inlet (optional)
 BX-307 Flow Calibrator (optional)
 BX-305 Leak Test Valve
 81210 PM_{10} Adapter
 460128 FRM Filter Cassette (1 included with sampler)
 460122 FRM 47mm PTFE Filters
 80866-1 Ambient Temperature Sensor
 Aluminum Stand (Optional)
 CCS Modem (Optional)


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