

# E-BAM

## E-BAM is a complete measurement system it comes with the following standard components:

- 6 Channel Datalogger
- Internal DC Vacuum Pump
- Real-Time Concentration
- PM10 Dichot Head
- Aluminum Tripod
- Ambient Temperature Sensor
- Volumetric Flow Control
- Weatherproof Enclosure
- Filter Temperature
- Filter RH
- Filter Pressure
- Calibration Membranes

## Options and Accessories

- Flow Calibrator
- WINS Impactor
- PM2.5 Sharp-Cut Cyclone
- TSP Inlet, External AC Vacuum Pump
- Power Solar Panel Array, AC Power Supply
- Sensor inputs Wind Sensor,
- Ambient RH,
- Communications Transfer Module, Modem, Radio Modem
- Calibration: Zero Calibration Kit, Flow Calibration Kit

## Specifications

Range	0 -100 mg per cubic meter
Accuracy	2.5 µg in 24 hour period
Measurement Cycle	Standard @ 60 Minutes, actual sampling time 59 Minutes
Beta Source	C14, less than 75 microcurie, Half life of 5730 years
Detector:	Scintillation probe
Analog Output	0-1V, 0-5V, 0-10V selectable, 12 bit accuracy
Filter Tape	Continuous glass fiber filter
Inlet	PM10 impactor type
Flow Rate:	16.7 liters per minute, adjustable
Flow accuracy	+/- 3% of reading, volumetric flow controlled
Sample Pump	Dual diaphragm type, internally mounted
Alarm Signals	Filter, flow, power and operation failure
Input Power	12 Volts DC @ 36 Watts, 25°C , 48 Watts Max
Alarm Contact Closure	2 Amp @ 240 VAC
Operating Temperature	-30 Deg C to 40 Deg C
Enclosure	

BX-807	PM 2.5 Sharp Cut Cyclone
390062	Battery, 12VDC 100AHR,
390052	Battery Charger, 12 VDC @ 4 A / .3A hold AC adaptor, 100-240 VAC in, 12VDC @ 6A,
EX-0B4	Wind speed and direction sensor
EX-593	Humidity sensor
MMP	MicroMet Plus Software
EX 121	AC Power Supply
UX-961	Transfer Module

Consumables	Part Number
Filter tape, roll	460130



UX-961



**The Met One E-BAM is a portable real-time beta gauge traceable to US-EPA requirements for automated PM 2.5 and PM 10 measurement.**

The Met One E-BAM has been built to satisfy users, regulators and those from the health community by providing truly accurate, precise, real time measurement of fine particulate matter automatically. In addition, it is rugged, portable battery operated, deployable in 15 minutes.

### The E-BAM offers the following advanced features:

1. Accuracy and precision consistent with US-EPA requirements for Class III designation for PM<sub>2.5</sub>.
2. Real-time, accurate results without correction factors, regardless of season or geographic location.
3. True ambient sampling provides accurate measurement of semi-volatile nitrates and organic compounds.
4. Lightweight, rugged construction is easily mounted on a tripod in minutes.
5. All-weather construction allows for true ambient sampling.
6. Operates on AC or DC power. Battery and Solar options available upon request.

## Continuous Monitoring

E-BAM automates particulate measurement by continuously sampling and reporting particulate concentration, data is updated every second, and data records updated every minute. E-BAM eliminates the old process of filter collection and manual filter weighing, and eliminates the need for more expensive, high maintenance instruments. Today, with the adaptation of Beta Attenuation to ambient monitoring this process became simple streamlined and inexpensive.

### About Accuracy

Real-time accurate, reliable, and repeatable measurement of ambient fine particulate matter has been the elusive goal of environmental regulators and health professionals for many years. Met One Instruments has developed advanced particulate monitoring instrumentation which will meet or exceed all US-EPA requirements for Class-III PM<sub>2.5</sub> designation, is reliable, and is easy to operate. It will also report results in real time and is automatic thereby eliminating the need for high levels of human intervention.

Because sampling occurs under true ambient conditions semi-volatile organic compounds and nitrates are easily detected thereby avoiding under measurement.

## Continuous Sampling

### Mobility

E-BAM is a lightweight portable instrument that operates directly in hostile environments without exterior enclosure. E-BAM is a very robust portable sampler system that is easily installed in less than 15 minutes. No other sampler matches the portability and flexibility of the E-BAM.

### Set up

Quick setup of the E-BAM is assured with a series of prompts instructing the installer on the sequence to follow. Then the E-BAM performs a series of self test diagnostics and alerts the installer of any corrective action, upon completion the E-BAM automatically places itself in normal operate mode.

### Particulate size selection

Size selective concentration measurements are made using a variety of sampling inlets, the E-BAM may be supplied with TSP (Total Suspended Particulate), PM-10, PM 2.5 or PM 1 inlets. Flow dependent cut points in the size selective inlets are maintained using integral flow meter, pressure sensor and ambient temperature sensor.

The PM-10 inlet removes particles larger than 10 microns, the inlet is not affected by wind speed and wind direction. For PM 2.5 or PM 1 secondary size selection is made using a second downstream inlet.

## Construction etc.

The standard configuration of the E-BAM is a self-contained environmentally sealed aluminum enclosure placed on a rugged tripod. This system can be permanently placed on rooftops, near roads, at industrial sites or rapidly deployed to monitor emergency situations.

'E-' represents Environment Proof instrument, E-BAM has been specifically designed to work in hostile environments without additional protection.

### Direct Field Reporting

Collecting real time or historical particulate data from a field site has never been easier. Advanced communication options include cellular phone, Line of Sight Radio, and for very remote sites satellite communications are now available. E-BAM also supports the full line of standard MET ONE options, such as data transfer module, phone modem, and direct communications to a portable computer.

E-BAM data is recorded internally and may be retrieved using one of the communication options or data may be forwarded to third party data acquisition system. MicroMet Plus Software supports the E-BAM and provides a complete communication, data base and reporting modules with charting.

### Digital, Analog and Alarm Outputs

The E-BAM provides both continuous digital and analog outputs, alarm output may be set for any concentration level. Analog output is selectable to either voltage or current, digital output is supplied as RS-232 or USB.

### Reporting modes

The internal data logger can store up over 200 days of concentration data at one hour sample times, and collect data from six other measurements at the same time! Both digital and analog outputs are included to enable users to connect to other data recording systems and to network with other monitors.

### Easy to Operate

E-BAM has been programmed to operate, at all times, except during calibration verification. Current data, historical data, and status information are available at all times without interrupting normal E-BAM operation.

### Data Validation

The operator may select various criteria for data validation, including deviation from rolling average, high value excursions, power failure and others. If an error occurs it is entered into the error log with date, time and type of error.

EPA Designated Method EQPM-0798-122 VS EBAM

