Ecotech
ACOEM Group

# Exactus™ BAM

## REAL-TIME PARTICULATE MONITOR

**The Exactus™ BAM is a portable, real-time beta gauge built to satisfy users, regulators and those from the health community by providing truly accurate, precise and automatic measurement of fine particulate matter. (Accuracy exceeds US EPA $PM_{10}$ FEM requirements, range 0 to 10 $mg/m^3$.)**

The Exactus™ BAM automatically measures and records airborne $PM_{10}$ or $PM_{2.5}$ particulate concentration levels using the principle of beta ray attenuation. This method provides a simple determination of concentration in units of milligrams of particulate per cubic meter of air.

## FEATURES

- Lightweight, suitcase-sized portability
- 15 minute rapid deployment
- Sturdy construction, weatherproof enclosure (temp range - 25 to +50°C)
- Mains powered or optional solar powered system
- Internal data logger
- External AC vacuum pump standard
- Real-time $PM_{10}$ concentration
- US EPA & AS/NZ Standards compliant monitor for $PM_{10}$
- Temperature/RH/Pressure sensor
- Volumetric flow control.

## APPROVALS

- US EPA approval

## BENEFITS

The Exactus™ BAM is designed as a simple, compact and self-contained beta gauge, for portable applications where rapid deployment and short interval real-time measurements are required. Deployed in approximately 15 minutes.

- Reliable performance complemented with a one year warranty
- Accuracy and precision approval with US EPA requirements for $PM_{10}$ measurement
- Real-time, accurate results without correction factors, regardless of season or geographic location
- True ambient sampling provides accurate measurement of semi-volatile nitrates and organic compounds
- Rugged, lightweight construction is easily mounted on a tripod in minutes
- All-weather construction allows for true ambient sampling
- Operates on 115 / 240 AC or 12 VDC (optional)
- Easy setup through an intuitive menu system, advanced GUI and a touchscreen display.

## SPECIFICATIONS

| | |
|---|---|
| **Range:** | - 15 µg/m³ to 10 mg/m³ |
| **Concentration units:** | µg/m³ or mg/m³ |
| **Measurement cycle:** | Hourly measurements, time resolution to 1 minute |
| **Noise:** | (2σ) (24 hour) Less than 1 µg/m³ |
| **Lower detectable limit:** | (2σ) (1 hour) Less than 10 µg/m³<br>(2σ) (24 hour) Less than 2 µg/m³ |
| **Accuracy:** | Exceeds US EPA Class III $PM_{10}$ FEM standards for additive and multiplicative bias |
| **Resolution:** | 1 µg/m³ |
| **Sample time:** | 1 hour |
| **STP reference:** | 0 °C, 20 °C, 25 °C at 101.3 kPa |
| **Sample flow rate:** | 16.7 L/min inlet flow rate; actual volumetric flow |
| **Temperature range:** | - 25 to 40 °C |
| **Humidity range:** | 0 to 90 % RH; noncondensing |
| **Inlet humidity control:** | Actively controlled inlet heater module; 0 to 50 °C filter temperature set point |
| **Operating power:** | 100 - 240 VAC, 50 - 60 Hz (autoranging) |
| **Power consumption:** | 460 W<br>3 A @ 115 VAC, 2 A @ 230 VAC |
| **Dimensions:** | 410 x 460 x 310 mm |
| **Weight top unit:** | 15.9 kg |
| **Weight pump box:** | 18.1 kg |
| **Weight total:** | 34.0 kg |
| **External sensor:** | Met One Model 597 |
| • Ambient temperature | - 50 to 70 °C |
| • Relative humidity | 0 to 98 % RH |
| • Barometric pressure | 375 to 825 mmHg |

## COMMUNICATION

### Analog output

- Menu selectable 4 - 20 mA or 0 - 1 VDC, 0 - 2.5 VDC or 0 - 5 VDC

### Alarm output

- 1 channel; dry normally open contact; 1 A at 125 VAC or 60 VDC maximum
- Filter, flow, power and operation failure

### Serial interface

- RS-485; 2 channels; half duplex
- RS-232 and USB; 1 channels; full duplex (shared common serial output)

### Baud rates

- 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200

### Compatible software

- Airodis™, WinAQMS™, HyperTerminal®

## DATA LOGGING

### Internal data logger

- 8 days when set to 1 minute average
- 1.3 years set to 60 min average

### External data storage

- 1 USB flash drive device

## OPTIONS & ACCESSORIES

- Volumetric Flow Calibration Kit
- Zero Calibration Kit
- TSP Inlet
- $PM_{10}$ Inlet Head (EPA specification)
- $PM_{2.5}$ Sharp-Cut Cyclone
- Wind Speed and Direction Sensor
- Sonic Wind Speed and Direction Sensor
- Ambient Temp, RH and Barometric Pressure Sensor
- Filter Tape, Roll
- External Pump (240 or 110 VAC)
- Printed User Manual (a soft copy of the user manual is supplied on the ECOTECH resources USB stick with each analyser).

**Pictured left: Exactus BAM Solar.**
**Real-time $PM_{10}$ monitoring.**
**AS/NZS 3580.9.11-2008.**
**Solar, battery or mains powered.**
**Internal logging of wind sensor data.**
**Rugged construction.**
**Compact weatherproof enclosure.**
**Operating range - 25 to 50 °C.**
**3 monthly calibration interval.**

bsi. ISO 9001 Quality Management FS 603790 AS/NZS 4801 Occupational Health and Safety Management OHS 603791

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