

ES-405

Simultaneous Particulate Profiler

The **ES-405** is a near reference air quality sensor designed to provide accurate real-time measurements of TSP*, PM₁₀, PM₄, PM_{2.5}, and PM₁ particulate concentrations simultaneously. It can profile and record these five key particulate concentrations in either indoor or outdoor environments. The rugged weatherproof enclosure allows use in the harshest environments for reliable continuous outdoor operation, and the inlet heater reduces moisture-related measurement error. The **ES-405** sensor incorporates sheath air to prevent particles from contaminating the internal optics of the sensor. This unit can be wall-mounted or installed on a vertical mast or tripod.

All **ES-405** Particulate Profilers from Met One Instruments are manufactured at our ISO-9001 facility. Calibrations are performed to NIST traceable standards.

Data output can be configured in intervals as low as one minute or with longer averaging intervals. Upload data automatically for remote download and analysis with optional CCS COMET Cloud+ Modem. External meteorological sensors can be connected to the unit.



Applications

- Air Quality Surveillance.
- Rapid Source Apportionment Determination.
- Emergency Response.
- Near-Roadside Monitoring.
- Particulate Emission Studies.
- Environmental Cleanup Sites.
- Localized Particulate Data for Community Health & Policy.
- Occupational Hygiene.
- Environmental Health and Safety Management.

Specifications

Model Number:	ES-405
Operation:	Right angle light scatter detection, using a laser diode as light source.
Measurement Resolution:	0.1 $\mu\text{g}/\text{m}^3$
Number of Mass Channels:	5 ($\text{PM}_{1.0}$, $\text{PM}_{2.5}$, $\text{PM}_{4.0}$, PM_{10} , TSP*)
Measurement Range:	$\text{PM}_{1.0}$: 300 $\mu\text{g}/\text{m}^3$; $\text{PM}_{2.5}$: 2,000 $\mu\text{g}/\text{m}^3$; $\text{PM}_{4.0}$: 4,000 $\mu\text{g}/\text{m}^3$; PM_{10} : 10,000 $\mu\text{g}/\text{m}^3$; TSP*: 10,000 $\mu\text{g}/\text{m}^3$.
Data Storage Intervals:	1, 5, 10, 15, 30, or 60 minutes
Sample Air Flow Rate:	1.0 LPM
Sheath Air Flow Rate:	1.0 LPM
Flow Control:	Active volumetric flow control
Communication Connections:	RS-485, RS-232, USB, Optional CCS Modem
Operating Temperature:	0° to +50° C
Storage Temperature:	-20° to +60° C
Ambient Humidity Range:	0 to 95%, non-condensing
User Interface:	Menu-driven interface with 4 x 20 character OLED display and dynamic keypad.
Power Supply:	Universal 100 – 240 VAC input, 50/ 60 Hz.
Power Consumption:	12 VDC. Max operating current 1300 mA.
Alarm Contact:	Normally open / normally closed contact closure relay output. Contact rating 1.0 A @ 30 VDC max.
Closure Weight:	8.5 lbs without power supply. 10 lbs with power supply.
Dimensions:	Height: 20" Width: 8" Depth: 6"
Communications Protocol:	Terminal Command Set, Modbus 7500 Protocol.

*TSP Measurements are indicative.



Supplied Accessories

- Weatherproof TSP Inlet with Debris Screen.
- External Power Cable.
- Mounting Bracket.
- USB Cable.

Ask About the AQ Eagle System:

A Pre-configured Multi-Parameter Air Monitoring Solution Utilizing the ES-405 Particulate Profiler.

Optional Accessories

- Alarm Contact Closure Can be Used to Signal an External Warning Light, Logic Controller, or Logger Input to Take Action.
- CSS Comet Cloud Modem.
- AIO 2 Sonic Weather Sensor.
- 10' Aluminum Tripod.
- RS232 Communication Cable.
- RS485 Communication Cable.



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