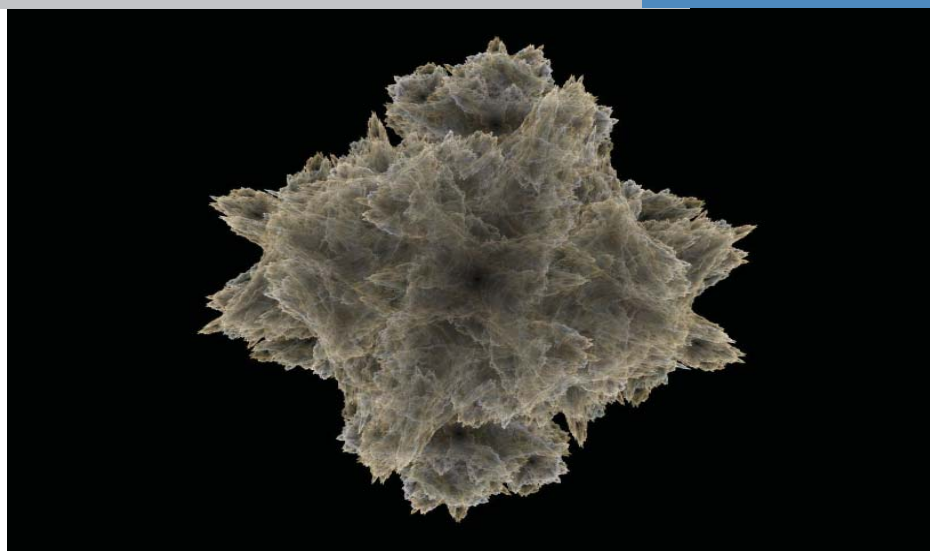
Product Specifications

Thermo Scientific Ambient Particulate Monitor, TEOM® 1400ab

Continuous mass measurement of particulate matter in ambient air



Key Features

- PM-10 (EQPM-1090-079) and PM-2.5, worldwide approvals
- Continuous true mass measurement with unmatched short-term precision and resolution
- Active volumetric flow control using advanced mass flow controllers
- Audit and calibration using NIST-traceable mass and flow standards

The Thermo Scientific Ambient Particulate Monitor, TEOM 1400ab is the choice of air pollution monitoring networks worldwide to measure particulate mass concentrations continuously. The system has become the de facto standard for particulate mass concentration measurements in areas such as Canada, Hong Kong, the United Kingdom and France due to its high data quality, reliability and unparalleled support.

The instrument incorporates the patented tapered element oscillating microbalance, a microweighing technology that provides true mass measurements. Using a choice of sample inlets, the hardware can easily be configured to measure PM-10, PM-2.5, PM-1 or TSP concentrations.

This microprocessor-based unit easily accommodates all siting requirements and provides internal data storage and advanced analog and serial data input/ouput capabilities.

The TEOM 1400ab monitor is used to monitor ambient air quality in the following major applications:

- Air quality monitoring networks, including background sites
- Special studies and supersites
- Routine input for air quality index
- In and around industrial and material handling facilities
- Remediation projects (Superfund, hazardous waste)
- Indoor air, exposure chamber, and industrial hygiene measurements

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To maintain optimal product performance, you need immediate access to experts worldwide, as well as priority status when your air quality equipment needs repair or replacement. We offer comprehensive, flexible support solutions for all phases of the product life cycle. Through predictable, fixed-cost pricing, our services help protect the return on investment and total cost of ownership of your Thermo Scientific air quality products.

Ambient Particulate Monitor, TEOM 1400ab

Regulatory Designations	USEPA equivalency designation number EQPM-1090-079 as an equivalent PM-10 monitor, USEPA CACM for PM-2.5.
	German EPA approval for TSP, PM-10. Conforms with European continuous PM-10 monitoring requirements.
	Norms/approvals in Australia, Japan, Korea and Taiwan.
Safety/Electrical Designations	CE: EN550011 Group 1, Class B (Emissions); EN55082-1 (Immunity); EN61010-1 (Safety)
	ETL: UL- and CSA-equivalent approval
Standard System Configuration	TEOM Sensor Unit and TEOM Control Unit
	Menu-Driven Software for User Interaction via the Keypad
	ActiVolTM flow control using Automatic Mass Flow Controller(s) and supplied Ambient Temperature and Ambient Pressure Sensors
	Connecting and Interface Cables, and Vacuum Pump
	Consumables for average first year's operation (ambient)
	RPCOMM Software for Local or Remote Communication
	Support for the ACCUTM System
	System Configurations Include PM-10, PM-2.5, PM-1, TSP and basic
Instrument Performance (3 l/min, 1s, stable conditions)	Measurement Range: 0 to 5,000,000 µg/m³ (5 g/m³)
	Resolution: 0.1 µg/m³
	Precision: ±1.5 µg/m³ (1-hour ave), ±0.5 µg/m³ (24-hour ave)
	Minimum Detectable Limit for Mass Measurement: 10 nanograms, 0.06 µg/m³ (1-hour ave)
	Accuracy for Mass Measurement: ±0.75%
Data Averaging and Output	Real-time Mass Conc Averages: 10 min default, 10 to 3600 sec
	Long-Term Averaging: 30 min, 1, 8, and 24 hr
	Data Output Rate: every 2 sec
Operating Range	The temperature of the sampled air may vary between -40 and 60 °C.
	The TEOM Sensor and Control Units must be weather protected within the range of 2 to 40 °C.
	An optional Complete Outdoor Enclosure provides complete weather protection.
	Main Flow Rate: 0.5 to 4.0 l/min
	Auxiliary Flow Rate: 2.0 to 18.0 l/min
	Temperature of Mass Transducer: ambient to 70 °C
	Temperature of Internal Sample Tube: ambient to 70 °C
Data Storage	Internal data logging of 1 to 8 user-specified variables; capacity of 40 weeks of hourly mass concentration data.
Filter Media	Pallflex TX40, 13 mm effective diameter
Data Output and Input	Four-Line Display on TEOM Control Unit
	Two-way RS232 communication using the AK Protocol or German Ambient Network Protocol.
	3 User-Defined Analog Outputs (0-1, 0-2, 0-5 or 0-10 VDC)
	2 User-Defined Contact Closure Alarm Circuits
	7 Averaged Analog Inputs (± 2 VDC or ± 10 VDC) with user-defined conversion to engineering units, including vector-averaged wind velocity and direction.
Power Requirements	Sensor and Control Units: 120 VAC/60 Hz: 1 A; 240 VAC/50 Hz: 0.5 A
	Pump: 120 VAC/60 Hz: 4.25 A; 240 VAC/50 Hz: 2.25 A
Physical Dimensions	Base of TEOM Sensor Unit: W: 14" (36 cm) x D: 11" (28 cm) x H: 13" (33) cm;
	Heated Air Inlet of TEOM Sensor Unit: H: 26" (66 cm) x Diameter: 3.5" (9 cm); Weight: 40 lb (18 kg)
	TEOM Control Unit: W: 17" (43 cm) x D: 18" (46 cm) x H: 9" (22 cm) (rack mountable); Weight: 32 lb (15 kg)

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This product is manufactured in a plant whose quality management system is ISO 9001 certified.

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