Continuous measurement of
ambient particulate concentrations

Product Specifications

# Thermo Scientific TEOM 1405 Ambient Particulate Monitor

## Key Features

- U.S. EPA PM-10 Equivalent Monitor (EQPM-1090-079)
- Proprietary TEOM technology
- Touch screen user interface
- Embedded FTP server, ethernet, USB, RS232 and RS485 communications
- Activol flow control

The Thermo Scientific TEOM 1405 Ambient Particulate Monitor is the replacement for the successful Thermo Scientific TEOM 1400ab Ambient Particulate Monitor which is the choice of air pollution monitoring networks worldwide for the continuous measurement of particulate mass concentrations. The TEOM 1405 monitor 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 the high data quality, reliability and unparalleled support.

This instrument incorporates our proprietary 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 single cabinet, network ready unit easily accommodates all site requirements and provides internal data storage and advanced analog and serial data input/output capabilities.

The TEOM 1405 monitor provides a self-referencing, NIST-traceable true mass measurement using our proven high-reliability proprietary TEOM technology.

The system differentiates itself from other PM measurement methods by utilizing a direct mass measurement that is not subject to measurement uncertainties found in surrogate techniques such as beta attenuation, light scattering and pressure drop.

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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.

## Thermo Scientific TEOM 1405 Ambient Particulate Monitor

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| **Measurement Range** | 0 to 1,000,000 µg/m³ (1 g/m³) |
| **Resolution** | 0.1 µg/m³ |
| **Precision** | ±2.0 µg/m³ (1-hour ave), ±1.0 µg/m³ (24-hour ave) |
| **Accuracy** | Mass Measurement: ±0.75% |
| **Real-time Mass Conc Average** | 10 min default, 10 to 3600 sec |
| **Long-Term Averaging** | 30 min, 1, 8 and 24 hr |
| **Data Output Rate** | Every 2 seconds |
| **Operating Range** | The temperature of the sampled air may vary between -40 and 60 °C.<br>The TEOM Sensor and Control Units must be weather protected within the range of 8 to 25 °C.<br>*An optional Complete Outdoor Enclosure provides complete weather protection.* |
| **Standard System Configuration** | Menu-driven software for user interaction via 1/4 VGA display with touch screen<br>Connecting and Interface Cables, and Vacuum Pump<br>Consumables for average first year's operation (ambient)<br>RPCOMM and ePort software for local or remote communication |
| **Sample Flow** | Activol flow control system uses the mass flow sensors and the measured ambient temperature and pressure to maintain constant volumetric flow rates.<br>Main Flow Rate: 3 1/min<br>Bypass Flow Rate: 13.67/min |
| **Data Storage** | Internal data logging of user-specified variables; capacity of 500,000 records. |
| **Filter Media** | Sample Filter: Pallflex TX40, 13 mm effective diameter |
| **Data Output and Input** | ePort software to view and change system operation from PC, touch screen user interface<br>Ethernet with embedded FTP server, USB, RS232, RS485, 8 User-Defined Analog Outputs (0-1 or 0-5 Vdc), 2 User-Defined Contact Closure Alarm Circuits, 4 Averaged Analog Inputs (0-5 Vdc) with user-defined conversion to engineering units |
| **Power Requirements** | Instrument: 100-240 VAC, 440 VA, 47-63 Hz<br>Pump: 120 VAC/60 Hz: 4.25 A; 240 VAC/50 Hz: 2.25 A |
| **Physical Dimensions** | W: 17" (43.2 cm) x D: 19" (48.3 cm) x H: 29.5" (75 cm)<br>Weight: 38 lbs (18 kg) |
| **Safety/Electrical Designations** | CE: EN 61326:1997 + A1:1998 + A2:2001 + A3:2003, EN:61010-1<br>UL: 61010-1:2004, CSA: C22.2 No. 61010-1:2004, FCC: Part 15 Subpart B, Class B |
| **Approvals and Certifications** | U.S. EPA PM-10 Equivalent Monitor EQPM-1090-079 |

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

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