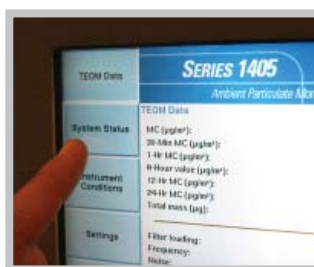


The Thermo Scientific TEOM 1405-D is a continuous dichotomous ambient air monitor. The one-piece system provides three measurements: PM-10, PM-2.5 and PM-Coarse all in one instrument.

## Thermo Scientific TEOM® 1405-D



### Key Features/Benefits

- Real time measurement of three particle sizes.
- Touch screen user interface
- Embedded FTP server, ethernet, USB, RS-232 and RS485 communications
- Activol™ flow control

### Quality

The Thermo Scientific TEOM 1405-D Monitor simultaneously measures PM-10, PM-2.5 and PM-Coarse (PM10-2.5) mass concentration with the same short term precision as the 1400ab. The 1405-D system is composed of two TEOM mass sensors housed in a single cabinet, network-ready configuration that includes the control system with touch screen user interface.

### Technology

The system is designed to provide representative short and long term reading of the ambient PM concentration. The system's default data output consists of a 10 minute average mass concentration which can be changed to 30 minutes or up to 24 hours. The three simultaneous measurements are accomplished by the

use of one PM-10 inlet combined with a virtual impactor that splits the flow. The touch screen outputs all three measurements for easy viewing while the micro-processor based instrument accommodates advanced internal data storage.

### Total Certainty

The 1405-D provides a self-referencing, NIST-traceable true mass measurement using Thermo Scientific's proven high reliability 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.

## TEOM 1405-D Ambient Particulate Monitor

### Safety/Electrical Designations

Designed to meet:

- CE: EN 61326:1997 + A1:1998 + A2:2001 + A3:2003, EN:61010-1
- UL: 61010-1:2004
- CSA: C22.2 No. 61010-1:2004
- FCC: Part 15 Subpart B, Class B

### Standard System Configuration

- Menu-driven software for user interaction via 1/4 VGA display with touch screen
- Connecting and Interface Cables, and Vacuum Pump
- Consumables for average first year's operation (ambient)
- RPCOMM and ePort Software for Local or Remote Communication

### Instrument Performance (3 l/min, 1s, stable conditions)

- Measurement Range: 0 to 1,000,000  $\mu\text{g}/\text{m}^3$  (1  $\text{g}/\text{m}^3$ )
- Resolution: 0.1  $\mu\text{g}/\text{m}^3$
- Precision:  $\pm 2.0 \mu\text{g}/\text{m}^3$  (1-hour ave),  $\pm 1.0 \mu\text{g}/\text{m}^3$  (24-hour ave)
- Accuracy for Mass Measurement:  $\pm 0.75\%$

### Data Averaging and Output

- Real-time Mass Conc Average: 10min default, 10 to 3600 sec
- Long-Term Averaging: 30 min, 1, 8 and 24hr
- Data Output Rate: Every 2 seconds

### 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 8 to 25 °C. An optional Complete Outdoor Enclosure provides complete weather protection.

### Sample Flow

- Activol flow control system uses the mass flow sensors and the measured ambient temperature and pressure to maintain constant volumetric flow rates.
- Main Flow Rate: Fine PM filter: 3.0 l/min; Coarse PM filter: 1.67 l/min
- Bypass Flow Rate: 12.0 l/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
- 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

- Model 1405: 100-240 VAC, 440 VA, 47-63 Hz
- 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)
- Weight: 40lbs (18 kg)

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