

Manual sampling platform for
suspended particulate matter

Product Specifications

Thermo Scientific Partisol-Plus 2025 Sequential Air Sampler



Key Features

- U.S. EPA PM-Coarse, PM-2.5 and PM10 Reference Sampler
- Choice of sample inlets for PM-1, PM-2.5, PM-10 and TSP
- Sequential sampling system with 16-filter capacity
- Filter integrity assured through sealed magazines
- Pneumatic filter exchange—no belts, motors or gears

The Thermo Scientific Partisol-Plus 2025 Sequential Air Sampler defines the state of the art in flexible, field-proven sequential air sampling. The device exchanges 47mm diameter sample filters automatically by a user-defined time interval or other condition. It has a capacity of 16 filter cassettes, allowing for two weeks of unattended daily sampling of particulate matter (PM).

The sampler is designed to be installed at an outdoor sampling location without additional protection. The Partisol®-Plus 2025 Sampler draws a particulate-laden ambient air stream through a size-selective or TSP (total suspended particulate) inlet, and then through a 47mm diameter filter. A variety of filter materials are available in this size. A built-in pump provides the vacuum

required to pull the air flow through a sample filter and a mass flow controller. Filter exchange is performed using pneumatic pressure from the sample pump, and does not involve any special electromechanical components, belts or motors. New filter cassettes from the supply magazine are pushed up to the sampling position, while the previous cassette is moved to the storage magazine. The supply and storage magazines are covered to seal off filter cassettes when not used for sampling.

The system forms the backbone of the U.S. EPA PM-2.5 national sampling network, and is being implemented by air monitoring organizations worldwide for the sampling of PM-10, PM-2.5, PM-1 and TSP onto 47 mm diameter filters.

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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.

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Filter Holders and Media	Accommodates 47 mm filter in the single-flow and dual-flow configurations. For U.S. EPA PM-2.5 sampling, regulations only allow the use of Teflon® 2 µm pore size membrane filter. For PM-10 reference method sampling, the U.S. EPA permits the use of Pallflex TX-40, quartz filter and Teflon® materials.
Data Storage	Interval Data (every 5 minutes), Input Data (stored at user-defined interval) and Filter Data (one record for each filter). This stored information may be viewed on the display and retrieved through the RS232 interface. The sampler has the following capacities: 16 days of Interval Data (stored every 5 minutes), 32 days of Input Data (stored every 30 minutes, default), 50 filter records.
Sample Flow Rate	Activol™ flow control system uses a mass flow controller and the measured ambient temperature and pressure to maintain a constant volumetric flow rate. The unit can control at rates ranging from 10 to 19 volumetric l/min. The sampler displays the current volumetric flow rate (l/min). For each filter exposed, the unit stores the total volume in volumetric or standard m ³ .
Operational Temperature	22° to 122°F (-30 to +50 °C). Temperatures -40°F (-40 °C) require additional optional hardware.
Power Requirements	3 A @ 120 VAC, 1.5 A @ 240 VAC
Size and Weight	Enclosure: 25.2" (64.0 cm) W x 15.8" (40.2 cm) D x 26.3 (67.3 cm) H Height is 31" (78.8 cm) with the top cover, and 35.3" (89.5 cm) with the inlet connector. Weight: 101 lb (46 kg). Footprint: 42.0" (106.7 cm) W x 18.1" (46.0 cm) D <i>Stand</i> Top Section: 30.8" (78.2 cm) W x 27.1" (68.8 cm) H x 14.0" (35.6 cm) D.
Meteorological Features	The sampler always stores the following meteorological information in each record of Input Data and Filter Data: average ambient temperature, ambient pressure, and average ambient relative humidity. With an optional wind vane/anemometer connected to the unit, the following data are also stored in each record of Input Data and Filter Data: average wind speed, wind velocity (vector averaged) and average wind direction. In the case of Input Data, these values are averaged over the data storage interval, which is user-selectable. Data are sampled once per second. In the case of Filter Data, these values are averaged over the periods during which the hardware sampled through a given filter. Data are sampled once per second.
Outputs	Keypad/display for data retrieval and user programming. RS232 interface for data retrieval and remote operation. Supports advanced bi-directional AK Protocol. 3 user-defined analog outputs (0-5 Vdc) for data logging. 2 user-defined TTL alarm outputs. Wind vane/anemometer connection with 24 Vdc power output.
Inputs	2 0-5 Vdc inputs for wind speed and direction. 3 averaged analog inputs (0-5 Vdc) with conversion to engineering units (in addition to wind speed and direction above). RS485 interface for connection with other Thermo Scientific devices.
Safety/Electrical Designations	CE: EN550011 Group 1, Class B (Emissions) EN55082-1 (Immunity) EN61010-1 (Safety) ETL: UL- and CSA-equivalent approval
Approvals and Certifications	U.S. EPA PM-Coarse Reference Sampler: RFPS-0509-176 U.S. EPA PM-2.5 Reference Sampler: RFPS-0498-118 U.S. EPA PM-10 Reference Method: RFPS-1298-127 EN12341: Candidate equivalent for PM-10 manual sampling method (European Norm EN12341).

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

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