

SHARP Monitor, Model 5030

Synchronized Hybrid Ambient Real-time Particulate Monitor
Combines light scattering photometry and beta radiation attenuation
for continuous PM₁₀/PM_{2.5} measurement

Features and Benefits

- Greater sensitivity results in an unprecedented hourly detection limit.
- True continuous mass calibrated instrument for accurate PM measurements with high time resolution.
- IMR (Intelligent Moisture Reduction) System eliminates moisture interference while preserving volatile aerosols.
- Dynamic digital filtering for continuous calibration update.
- Superior accuracy for consistent correlation with Federal Reference Methods.



The Model 5030 SHARP Monitor is a synchronized hybrid ambient "real-time" particulate monitor. The SHARP Monitor utilizes proprietary digital filtering to continuously mass calibrate the nephelometric measurement of PM₁₀ and PM_{2.5}. The result is an accurate, precise, and real-time continuous particulate monitor with unprecedented time resolution and detection limit.

The intelligent moisture control system (IMR) regulates humidity levels using a heating system that is linked to a relative humidity sensor located just upstream of the sample providing a representative measurement of the relative humidity at the particulate measurement head.

The result is a system that heats only when necessary, eliminates moisture effects, and assures that the volatile aerosol remains intact for accurate measurement.

Installation and set-up of the SHARP is extremely simple without the need for complex components that require excessive time and effort. Easy to navigate menus allow users to glide through parameter set-up allowing the instrument to run almost effortlessly. Routine maintenance is necessary only once per year making the SHARP the lowest maintenance continuous particulate monitor on the market today.



SHARP, Synchronized Hybrid Ambient Real-time Particulate Monitor Specifications for PM₁₀ & PM_{2.5}

Concentration Ranges	0 to 1,000 µg/m ³ and 0 to 10,000 µg/m ³
Minimum Detectable Concentration Limit	<0.5 µg/m ³ @ 2σ (1-hour time resolution)
Hourly Precision	+/- 2 µg/m ³ <80µg/m ³ , +/-5 µg/m ³ >80µg/m ³
Measurement Time Resolution	1 minute (updated every 4-seconds)
Precision Between Two Monitors	+/- 2 µg/m ³ (2-sigma, 24-hour time resolution)
Span Drift	0.02% per day
Display Resolution	0.1 µg/m ³ (internally logged and displayed data)
Accuracy	+/- 5% (compared to 24 hour FRM)
Sources	Optical: IRLED, 6 mW, 880 nm Beta: carbon-14, 3.7 MBq (100 mCi), 5700-year half-life
Detectors	Optical: silicon/hybrid amplifier Beta: proportional counter
Air Flow Rate	1 m ³ /h (16.67 lpm) measured across an internal sub-sonic orifice; user selectable from 0 to 20 lpm
Output	Two serial interface RS232 / Analog output: 4-20mA or 0-10V output of concentration (µg/m ³) (specify upon order)
Operating Temperature	-22 to 140°F (-30 to 60°C)
Power Supply	Instrument: 10-240V, 50/60Hz, 330W max., 15W without pump or heater Pump: 100-110/100-120V, 50/60Hz or 220/240V, 50/60Hz, 100W
Dimensions	Instrument: 19"(W) x 12.25"(H) x 13"(D) / 483mm(W) x 311mm(H) x 330mm(D) Pump: 8.25"(W) x 8.75"(H) x 4.25"(D) / 210mm(W) x 222mm(H) x 108mm(D)
Weight	Instrument: 50lbs (22.5kg) / Pump: 18lbs (8.1kg)

Comprehensive Support Solutions

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. Thermo Scientific offers comprehensive, flexible support solutions for all phases of the product lifecycle. Through predictable, fixed-cost pricing, Thermo services help protect the return on investment (ROI) and total cost of ownership of your Thermo Scientific air quality products.

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