

Thermo Scientific SHARP Monitor, Model 5030

Synchronized Hybrid Ambient Real-time Particulate Monitor



Key Features

- 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 Thermo Scientific SHARP Monitor, Model 5030 is a synchronized hybrid ambient "real-time" particulate monitor. The SHARP Monitor combines light scattering photometry and beta radiation attenuation for continuous PM₁₀/PM_{2.5} measurement.

The SHARP 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.

Product Specifications

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.

SHARP Monitor, Model 5030

Concentration Ranges	0 to 1,000 µg/m ³ and 0 to 10,000 µg/m ³
Minimum Detectable	<0.5 µg/m ³ @ 2X (1-hour time resolution)
Concentration Limit	
Hourly Precision	+/- 2 µg/m ³ <80µg/m ³ , +/-5 µg/m ³ >80µg/m ³
Measurement Time	1 minute (updated every 4-seconds)
Resolution	
Precision Between	+/- 2 µg/m ³ (2-sigma, 24-hour time resolution)
Two Monitors	
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)

Ordering Information

SHARP, Model 5030

Choose from the following configurations/options to customize your own Model 5030

1. Sampling tube:

1st letter is 110V, 2nd letter is 220V

A1, B1 = Heated sample tube, 3m
A2, B2 = Heated sample tube, 1m
A3, B3 = None
A4, B4 = Heated sample tube, 2m

2. Universal vacuum pump:

WP = With pump with STAS 3 connector for direct connection
NP = No pump

3. Cyclones / Inlets

A = PM2.5 Sharp cut cyclone
B = PM2.5 Very sharp cut cyclone
C = PM10 Inlet
D = PM2.5 Sharp cut cyclone and PM10 inlet
E = PM2.5 Very sharp cut cyclone and PM10 inlet
F = None
G = Digital PM10 inlet
H = Digital PM2.5 Inlet
K = TSP Sampling head

4. Roof flange

A = US
B = EU
C = None

5. Manual

A = English
B = German

6. Zero Air Option

A = US
B = EU
C = None

7. Calibration Kit

A = Calibration foil kit
B = None

Your Order Code: 5030 _____

© 2009 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries.

This specification sheet is for informational purposes only and is subject to change without notice. Thermo Fisher Scientific makes no warranties, expressed or implied, in this product summary. Not all products are available in all countries. Please consult your local sales representative for details.

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

Air Quality Instruments

27 Forge Parkway
Franklin, MA 02038 USA

(866) 282-0430
(508) 520-0430
(508) 520-1460 fax

www.thermo.com/air

Lit_5030AQI_11/09

Thermo
SCIENTIFIC