

Thermo Scientific Model 5012 MAAP Multi Angle Absorption Photometer

Precision measurement of black carbon in the atmosphere

The Thermo Scientific™ Model 5012 MAAP Multi-Angle Absorption Photometer precisely measures the loading of black carbon in the atmosphere using a radiative transfer scheme to particle loaded glass fiber filters.

- Multiple detectors simultaneously measure transmitted and scattered light
- Control and data exchange over two serial interfaces
- User selectable sample averaging times
- Automatic temperature and pressure correction
- Internal quality assurance and data storage log book

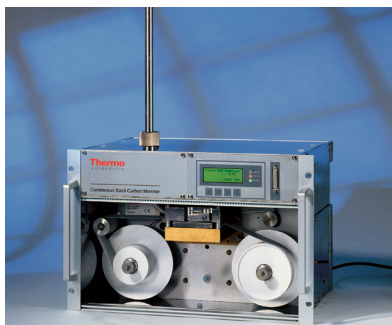


Black Carbon (BC), a product of incomplete combustion, comes from industrial pollution, traffic, fires, the burning of coal and biomass fuels.

Unlike carbon dioxide emissions, which add to global warming by trapping heat in the atmosphere, soot emissions may contribute to global warming and climate change by absorbing sunlight, heating the air and making the atmosphere more unstable

The measurement of BC, by optical means, has typically meant the measure of the transmission of light through a filter as the BC was collected. This measurement is affected by reflection and the scattering of light in multiple directions due to particle size and shape.

The BC content of the aerosols is continuously determined by simultaneously measuring the optical absorption and scattering of light by the particles collected on the filter tape. The combination of these two techniques as utilized by the Model 5012 MAAP provides a much truer measurement of the black carbon content.



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Method	Multi Angle Absorption Photometer (MAAP)
Minimum Detection	2 minute average <100 ng/m ³ BC < 0.66 M/m Babs
Limit	10 minute average < 50 ng/m ³ BC < 0.33 M/m Babs
	30 minute average < 20 ng/m ³ BC < 0.13 M/m Babs
Filter Change	At 20% transmission (approximately 30µg)
Light Source Wavelength	670 nm (nanometers)
Active Measurement Time	>98%
Air Flow Regulation	Deviation <1% (PID type)
Filter Tape	Glass fiber, type GF 10, approximately 40m
Data Output	2 serial interfaces RS 232
	Analog output: 0/4mA - 20mA or 0V - 10V
Data Memory	18,560 concentration values, log book with 1,632 entries, 385 daily averages
Operating Temperature	-4° to 122°F (-20° to 50°C)
Power Supply	Instrument: 100-240V, 50/60 Hz, 330W max., 15W without pump
	Pump: 100-110/100-120V, 50/60Hz or 220/240V, 50/60Hz, 100W
Pump Type	RPM regulated rotary vane pump
Dimensions	Instrument: 19" (483mm) W x 12.25" (311mm) H x 13" (330mm) D
	Pump: 8.25" (210mm) W x 8.75" (222mm) H x 4.25" (108mm) D
Weight	Instrument: 50 lbs. (22.5 kg)
	Pump: 13.5 lbs. (6.1 kg)

Ordering Information

Model 5012 MAAP Multi Angle Absorption Photometer

Choose from the following configurations/options to customize your own Model 5012 MAAP

1. Sampling Tube

A1, B1= Heated Sample Tube, 3m
 A2, B2= Heated Sample Tuve, 1m
 C1= Sampling Tube (unheated), 3m
 C2= Sampling Tube (unheated), 0.8m
 A3, B3= None
 A4, B4= Heated Sample Tube, 2m

2. Universal Vacuum Pump

WP= With Pump with STAS 3 connector for direct connection to 5012
 NP= No Pump

3. Inlets/Cyclones

A= PM2.5 Shart 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= PM10 INLET (EU-style DPM 10/01/00), 1m³/h
 G= PM2.5 Inlet (EU-style DPM 25/01/00), 1m³/h
 F= PM10 & PM2.5 Inlets (EU style), 1m³/h
 K= None
 M= TSP Sampling Head

4. Roof Flange

A= DDF16 EU Unheated
 B= DDF40 EU Heated
 C= FH107 US Unheated
 D= None

5. Manual

A= English
 B= German

Your Order Code:

Model 5012 MAAP- _ _ _ _ _

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 products.

For more information, visit our website at thermoscientific.com/air

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

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