Benchmark Monitoring

MAGEE SCIENTIFIC

Measure Black Carbon content of filter samples

SootScan™ Model OT21 Transmissometer

KEY FEATURES

- 2-Wavelength operation: UV (370nm) & IR (880nm)
- Non-contact, non-destructive, non-contaminating
- Accepts 25, 37 or 47 mm diameter filters
- Analyzes glass fiber, quartz fiber, Teflon filters

APPLICATIONS

- Air Quality monitoring
- Analysis of historical archives
- Identification of “biomass burning” aerosols
- Personal exposure monitoring
- Stack & emission testing
- Climate change monitoring

MAGEE SCIENTIFIC

Manufactured in Europe by
Aerosol d.o.o., Ljubljana, Slovenia

Benchmark Monitoring

Benchmark Monitoring

MAGEE SCIENTIFIC

Product Specifications

MEASUREMENT PRINCIPLE
Measurement of the attenuation of transmitted light due to an aerosol deposit previously collected on the filter. Simultaneous analysis at 370 nm and 880 nm.

INTERPRETATION
Light absorption measurement at 880 nm interpreted as Black Carbon ('BC', also called 'Elemental Carbon – EC'). Measurement at 370 nm designated as 'UVPM', interpreted as a 'Brown Carbon' ('BrC') indicator of aromatic organic compounds such as are found in smoke from biomass burning.

DATA FORMAT
Attenuation (100 * $\ln[I_0/I]$) in 'ATN units' at two wavelengths.

SPECIFICITY
No other aerosol species absorbs light even 0.001 times as much as Black Carbon in the visible range.

INTERCOMPARISON
Light absorption measurements can be converted to BC or EC equivalents.

SENSITIVITY
1 ATN unit, equivalent to 0.06 µg/cm² BC on filter. If collected on a 47 mm diameter filter at a 16.7 LPM flow rate for 24 hours, this represents a Limit Of Detection for BC of 0.075 µg/m³.

MEASUREMENT RANGE
Maximum loading of 125 ATN units is optimal, equivalent to an average BC concentration of 3.1 µg/m³ collected on a 47 mm diameter filter at 16.7 LPM for 24 hours. At higher ATN values , the linearity may be impaired. The Data Reduction Template suggests other choices of filter collection area, sampling flow rate and sample collection time to permit accurate data over a very wide range of BC concentrations.

SAMPLE MEDIUM
Quartz fiber, T60 Teflon coated borosilicate glass fiber, or Teflon membrane filters may be analyzed. For the use of other substrates contact Magee Scientific.

SAMPLE ANALYSIS AREA
Accommodates 25 mm, 37 mm, and 47 mm diameter filter media.

SAMPLE RETENTION
Analysis is non-destructive, non-contact and non-contaminating. Filters are unaffected for subsequent laboratory analysis.

VALIDATION
NIST-traceable neutral density filter kit option available.

DATA OUTPUT
Digital data available via rear RS-232 (COM) and USB ports.

DISPLAY AND INTERFACE
2-line display screen with keypad.

PHISYCAL SPECIFICATIONS
- Dimensions (HxWxD): 102 x 270 x 274 mm
- Weight: 5.5 kg
- Electrical Power supply: 100-230VAC, 50/60Hz (auto-switching)
- Temperature: 0-40 °C

ACCESORIES

Optical Diffuser filters required for the analysis of samples collected on Teflon membranes:, 47mm. pack of 50 (PN 7329)
ND Filter Validation Kit - set of 4 (PN 7475)

Scan the code for more info

Contact Benchmark Monitoring for more information:

M: +(614) 0166 6077
F: +(612) 4938 2076
P: +(612) 4016 8589

E: sales@benchmarkmonitoring.com.au
W: www.benchmarkmonitoring.com.au

A: U5 / 17 Enterprise Crescent, McDougalls Hill NSW 2330 Australia