



### Measurement Principle

Analysis by measuring the absorption of transmitted light due to aerosol deposit previously collected on filter.

### 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 an indicator of aromatic organic compounds such as are found in tobacco smoke, wood and biomass-burning smoke, etc.

### Data Format

Light absorption expressed as 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  $0.06 \mu\text{g}/\text{cm}^2$  BC on filter. If collected on a 47 mm diameter filter at a 16.7 LPM flow rate for 24 hours, this represents a BC concentration of  $0.14 \mu\text{g}/\text{m}^3$ .

### Measurement Range

0-125 ATN units optimal, equivalent to 0-18  $\mu\text{g}/\text{m}^3$  BC on filter if collected on a 47 mm diameter filter at a 16.7 LPM flow rate for 24 hours. Instrument will operate to higher values of ATN but linearity may be impaired.

### Reference Filter

Filter blanks are analyzed to provide 'zero' reference.

### 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 and subsequent laboratory analysis can be performed.

### 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.

### Dimensions

Instrument constructed in portable chassis with handle: 5 in (127 mm) H x 12 in (305 mm) W x 14 in (356 mm) D

### Weight

Approximately 10 lb (4.5 kg).

### Power

100~240 VAC 50/60 Hz, autoswitching.

### Temperature

0 ~ 40 °C operating, non-condensing.

### Initialization

Approximately 15 minutes required from power-up to valid data.

For more information, contact us :

**Pacwill Environmental**

905.563.9097

Toll-Free (Canada): 1-866-840-0014

[sales@pacwill.ca](mailto:sales@pacwill.ca)

[www.pacwill.ca](http://www.pacwill.ca)

