



## MOBILE MEASUREMENT OF BLACK CARBON



### MOTIVATION

#### APPLICATION NOTE

Mobile measurement of aerosol Black Carbon (BC) and Brown Carbon (BrC) allows for the mapping of air pollution sources and exposures at fine spatial scales; on-road measurement of emissions and exposures; or rapid deployment either between pre-defined fixed sites, or to emergency situations. These capabilities complement traditional monitoring approaches for air pollution assessments.

Mobile monitoring systems can be essential for both research and regulatory applications. These include the study of source assessments, local community exposures, geographical and topographical patterns, emissions from emergency situations such as industrial fires, wildfires, etc.

## APPLICATIONS

The Magee Scientific model AE43 'Portable' Aethalometer® can be installed in a vehicle in seconds. It can operate from vehicle DC power or its matching battery pack (16 hr. run-time). It provides full 7-wavelength aerosol analysis at a 1-Hz data rate. It can directly integrate position data from a GPS accessory, CO2 data (for emission-factor determination) from a trace-gas accessory, and other real-time sensors connected to its multiple data input ports.

The Magee Scientific model AE43 Aethalometer® can be installed in vehicle to map BC air pollution from industrial and traffic emissions at street level in urban areas; BrC (wood-smoke) pollution in regional or rural areas; or can be rapidly deployed to emergency situations.

The Magee Scientific model AE43 Aethalometer® can operate from an external battery power supply at remote or off-grid locations. The equipment package can be easily transported from site to site for short-term monitoring campaigns.

## INSTRUMENT

The Magee Scientific model AE43 Aethalometer® is constructed to the same standards of ruggedness and reliability as the industry-standard rack-mount model AE33.

The Model AE43 offers all of the analytical features of the AE33, including in-field analytical performance validation, stability, and internal tests.

The Model AE43 provides the reference-standard performance of the AE33 instantly at any location.

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