



AEROSOL
MAGEE SCIENTIFIC

SMARTEST WAY TO MONITOR BLACK CARBON: TRAFFIC AND BIOMASS BURNING POLLUTION



AE36 AETHALOMETER®

KEY FEATURES

- 7l, 370 – 950 nm, real-time aerosol analysis
- BC Index®
- DualSpot™ technology
- Real-time source apportionment
- Robustness to relative humidity changes
- Self-cleaning procedure
- Real-time data visualization
- Connectivity
- Automatic data validation

KEY BENEFITS

- Data you can trust
- Easy to use
- Comprehensive data
- Low maintenance
- Decades of experience

PRODUCT SPECIFICATIONS

SENSITIVITY

Proportional to time-base and sample flow rate settings: <10 ng/m³ @ 1 min, 5 LPM

DETECTION

Detection limit (1 hour): <0.001 µg/m³
Range: <0.01 to >100 µg/m³ Black
Carbon resolution: <1 ng/m³

SAMPLING

Aerosol sample collected on reinforced glass-fiber/ PTFE filter tape. Tape advances automatically on aerosol loading or at predefined times or intervals. Size selective inlets (impactor, cyclone) may be attached.

- Filter tape length: 20 m • Time-base 1 min and 5 min, post-processing to any time resolution
- Flow-rate 2 and 5 LPM provided by internal pump.
- Flow measured by two mass flow sensors and stabilized by closed-loop control
- Tape advances automatically on aerosol loading or at predefined times or time intervals

OPERATOR INTERFACE

Display
10.1" color touch-screen (1280 x 800 px) with status indicator LED's

Interface
- Graphical user interface with basic data display and control, advanced screens for detailed reporting and parameter setup - Charting of most relevant data (BC for instant identification of sources. 6, BB%, BCff, BCbb)
- BC Index chart
Remote management
Network ready for remote management and data transfer

AETHALOMETER AE36

RH ROBUSTNESS

RH sensitivity <1 ng BC/(%/min)

SENSORS

- Inlet RH sensor
- Tape compartment RH sensor
- Door sensor

DATA OUTPUT & STORAGE

Output

- Digital data via RS-232 COM port and Ethernet
- 4x USB, 1x USB (power only), 6x RS232, 1x Ethernet

Storage

- Database: 6 GB (30 years of 1 min data)
- All data are written to internal memory once every time-base period. Stored and autovalidated data may be transferred over a network or to a manually inserted USB drive

QUALITY CONTROL AND ASSURANCE

- Stability test
- Clean air test
- ND test for optical performance verification
- Flow verification
- Filter leakage test
- Inlet leakage test
- Flow calibration
- Tape sensor calibration
- Self cleaning procedure

PHYSICAL SPECIFICATIONS

- Dimensions (H x W x D): 27 x 43 x 32 cm
- Weight: 17.5 kg
- Electrical power supply: AC: 100-230VAC, 50/60Hz (auto-switching)
- Power consumption: 30 W average
- Internal vacuum pump: dual diaphragm, brushless motor
- Modular hardware, constructed in a fully-enclosed 19" rack mount 6U chassis, hermetically sealed to be protected from external environmental conditions

RELATED PRODUCTS

- RAS module in CAAT for remote access and support
- Sample Stream Dryer including external pump
- Upgrade with a TCA08: AE36s can be upgraded into a CASS instrument - an online OC/EC analyzer

INSTALLATION REQUIREMENTS

- Temperature: 5°C - 55°C
- Rel. humidity: 5% - 95% (non-condensing)
- Operating altitude: up to 3000 m a.s.l. (can be extended to 5000 m a.s.l. with an external air pump for high-altitude operation - optional accessory)

ACCESSORIES

- Neutral density optical filter
- validation kit
- Ambient meteorological sensor
- Wind speed and direction sensor
- Sample Stream Dryer
- PM2.5 Inlet (2.5 µm @ 5 LPM)
- PM1 Inlet (1 µm @ 5 LPM, 2.5 µm @ 2 LPM)
- CO2 sensor
- Flow calibrator ALICAT FP-25 (0.1-25 LPM)
- Insect screen assembly with water trap
- Tape sensor calibration disc kit
- GPS module
- External pump for High-Altitude operation

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