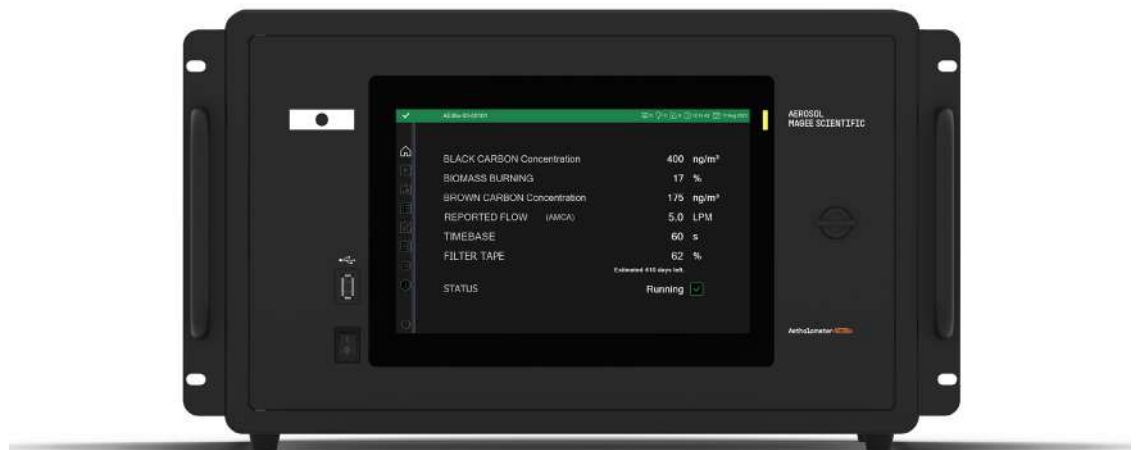




AEROSOL
MAGEE SCIENTIFIC

EXPAND THE FRONTIERS OF AEROSOL SCIENCE WITH CUTTING-EDGE BLACK CARBON INSTRUMENT



AE36s AETHALOMETER®

KEY FEATURES

- 9λ, 340 – 950 nm, characterization of light-absorbing aerosols
- Real-time Brown Carbon analyses
- Time base 1s
- DualSpot technology
- Robustness to relative humidity changes
- Real-time data visualization
- Self-cleaning procedure
- Connectivity
- Automatic data validation

KEY BENEFITS

- Unique measurements
- Data you can trust
- Detailed and flexible analytical and diagnostic capabilities
- Thousands of scientific publications
- Requires minimal resources



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PRODUCT SPECIFICATIONS

SENSITIVITY

Proportional to time-base and sample flow rate settings: $<10 \text{ ng/m}^3 @ 1 \text{ min}, 5 \text{ LPM}$

DETECTION

Detection limit (1 hour): $<0.001 \mu\text{g/m}^3$

Range: $<0.01 \text{ to } >100 \mu\text{g/m}^3$

Black Carbon resolution: $<1 \text{ ng/m}^3$

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: 10 m
- Time-base 1 s and 60 s, post-processing to any time resolution
- Flow-rate 2 to 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 × 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_{gr} , $\text{BB}\%$, BC_{m} , $\text{BC}_{\text{bb,r}}$, BrC) for advanced source apportionment

Remote management

Network ready for remote management and data transfer

AETHALOMETER AE36s

RH ROBUSTNESS

RH sensitivity $<1 \text{ ng BC}/(\%/ \text{min})$

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 × 43 × 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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Specifications are subject
to change without notice.

Keeping an Eye on the Air