

# C-12

## Portable Black Carbon Monitor

Introducing the groundbreaking **C-12**, our portable and weatherproof dual wavelength carbon monitor. The **C-12** allows for highly granular measurement of black and brown carbon at an unbeatable total cost of ownership, making precise carbon tracking more accessible than ever before.

The **C-12** from **Met One Instruments Powered by Acoem** is a robust carbon monitoring device which uses software-based loading compensation in order to measure optical attenuation (via two wavelengths: 880 and 370 nm) through a filter, to report airborne Black Carbon (BC) and Brown Carbon (BrC) concentrations of the total suspended particulate matter (TSP) with sensitivity better than 70 ng/m<sup>3</sup> at 1-minute time intervals.

The **C-12 Portable Carbon Monitor** is self-contained, eliminating the need for expensive, space- and power-consuming environmental shelters, with multiple mounting options (pole mount, wall mount, tripod, etc.).

### Applications

The **C-12 Portable Carbon Monitor** is ideal for a wide range of applications in urban or remote locations:

- Academic Research
- Climate Research
- Community Monitoring / Smart Cities
- Source Apportionment Studies
- Fence-line or Nuisance Monitoring
- Ambient Monitoring
- Government Air Quality Surveillance



### Features

- Unmatched Value for Granular Data
- Ultra-Low Power Consumption
- Portable & Fully Self-Contained
- Software-Based Compensation of Measurements for Filter Loading Effects
- Long Filter Tape Life (500 Advances per Roll)
- Real-Time Cloud Communications
- Data Logger Compatible
- Accessible Price Point
- Time-Tested, Durable, & Reliable Technology
- Precision Measurements

## Specifications

**Principle of Operation:** Optical attenuation across filter media.

**Illumination Wavelengths:** 880 nm and 370 nm.

**Output:** BC / BrC, Source-Apportionment.

**Particle Size Fraction:** TSP.

**Sampling Rate:** 1 LPM (internal pump).

**Lower Detection Limit (2 $\sigma$ ):** < 70 ng/m<sup>3</sup> (1-minute time scale).

**Communications:** USB & RS-232 w/ DB9 connector (standard);  
Optional integrated CCS3 COMET Cloud Global Modem: 4G with GSM fallback, GPS,  
& dual antenna with RX diversity – improves quality and reliability of the wireless  
link. (COMET Cloud service includes customized web-based data dashboard.)

**Internal Data Storage:** 108,134 records (75 days of data at 1-minute time scale).

**Mounting Options:** Pole Mount or Wall Mount (standard), Optional Tripod (model number EX-905).

### Power

**Input Power:** 100 – 240 VAC, 50/ 60 Hz (standard);

Optional Solar Power System (model number BCX-SOLAR).

**Power Consumption:** 12 V DC @ 800 mA (9.6 W) maximum.

### Environmental

**Operating Temp Range:** -20°C to 50°C (-4° F to 122° F).

**Ambient Humidity Range:** 0 – 90% RH, non-condensing.

### Physical

**Weight:** 6.522 kg (14.375 lb).

**Size:** Width: 40 cm (15.75 in).

Height: Base Unit w/ Inlet: 45.72 cm (18 in); Cellular Version: 49.53 cm (19.5 in)

Depth: 26.67 cm (10.5 in).

## C-12 Configurations Available

**C-12 Base Unit:** USB, RS-232, and AC Power Input.

**C-12 with Cellular:** USB, RS-232, CCS3 Cellular Modem (user-provided SIM), GPS, and AC Power Input.

**C-12 with Solar:** USB, RS-232, and Solar Power System.

**C-12 with Cellular & Solar:** USB, RS-232, CCS3 Cellular Modem (user-provided SIM), GPS, and Solar Power System.



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