



# Community Air Monitor (CAM) Spec Sheet

## Instrument Capabilities

- The CAM contains a 2B Technologies FEM 106-L ozone monitor and a sensor suite in a weatherproof NEMA enclosure
- Atmospheric constituents measured: O<sub>3</sub>, CO, CO<sub>2</sub>, Particulate Matter (PM<sub>1</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub>)
- Other environmental parameters measured: pressure, temperature, and relative humidity
- Auto-zeroing
- 3G data transmission capabilities
- CAM size and weight: 13" x 15" x 9.5", 13.6 lb (33 cm x 38 cm x 24 cm, 6 kg)

## Specifications (sensors per manufacturers)

### Ozone (O<sub>3</sub>)

- 2B Technologies Model 106-L Ozone Monitor
- Federal Equivalent Method (FEM)
- Measurement Principle: UV Absorption at 254 nm
- Resolution: 0.1 ppb
- Precision: Greater of 1.5 ppb or 2% of reading
- Baseline Drift: < 3 ppb/day, < 6 ppb/year
- Sensitivity Drift: < 1%/day, < 3%/year
- Response Time: 20 s
- Operating Temperature: 0 to 50 °C

### Carbon Dioxide (CO<sub>2</sub>)

- Sensor: Telaire T6713 (NDIR)
- Measurement Range: 0-5000 ppm
- Accuracy: ± 30 ppm, ± 3% of reading
- Response Time: < 3 min for 90% step change typical
- Operating Temperature: -10 to 60 °C

### Carbon Monoxide (CO)

- Sensor: Alphasense CO-A4 (Electrochemical)
- Response Time: < 20 s
- Precision: 0.01 ppm
- Measurement Range: 0-500 ppm
- Overgas Limit (maximum ppm for stable response to gas pulse): 2000 ppm
- Operating Temperature: -30 to 50 °C

### Particulate Matter (PM<sub>1</sub>, <sub>2.5</sub>, <sub>10</sub>)

- Sensor: Plantower PMS5003 (Laser Scattering)
- Measurement Size Range: 0.3-10 micron
- Measurement Range: 0-999 µg/m<sup>3</sup>
- Count Accuracy: 50% @ 0.3µm, 98% @ ≥ 0.5 µm
- Response Time: < 10 s
- Operating Temperature: -20 to 50 °C

### Pressure, Temperature, and Humidity

- Pressure Specs:
  - Measurement Range: 300 to 1100 hPa
  - Absolute Accuracy Pressure: ±1.0 hPa
  - Resolution: 0.18 Pa
  - Long-Term Stability: ±1.0 hPa per year
- Humidity Specs:
  - Measurement Range: 0 to 100 %RH
  - Accuracy: ±3%RH
  - Resolution: 0.008 %RH
- Temperature Specs:
  - Measurement Range: 0 to 65 °C
  - Accuracy: ± 0.5°C at 0 °C/ ± 1.0 °C at 65° C
  - Resolution: 0.01 °C

## Data Transfer

- 3G Data transmission capabilities
- WiFi capabilities
- On-board data storage with microSD card

## Power Options / Enclosure

- 100-240 VAC, 50/60 Hz
- Solar panel option available
- Weatherproof NEMA enclosure

## Calibration Services

- Sensor Calibration: recommended quarterly
- Full CAM Calibration (including ozone monitor): recommended annually