



PRAXIS/OPCUBE: Air Quality Monitor

Overview:

The Praxis / OPCube offers an out-of-the-box solution for urban dust and air quality monitoring.

The Praxis / OPCube answers both the challenge of capturing accurate data in variable climate conditions and the need for fine-grained air quality monitoring networks.

ECO has responded to the call for a dust particulate monitor, suitable for roadside and boundary monitoring, land development sites, demolition sites and environmental health and local authority investigations.

This easy install and set gas and particulate monitor is suitable for roadside monitoring, environmental health and local authority investigations.

Highlights:

- Ultra-low noise sensing for gases (ppb) and particulates ($\mu\text{g}/\text{m}^3$).
- Support for multiple analysis techniques including any sampling rate and real-time access.
- High density air quality network using low-cost, individually baselined devices.
- Open source device firmware for highly customisable sensing, data delivery and analysis.
- Consistent device function within broad climate range (T/rH) and casing rating for hostile environments.

General Specifications:

Size	154mm x 154mm x 130mm.
Weight	2kgs
Operating Temperatures	Rated from -40 to +50 C Includes Sensirion temperature and relative humidity sensor.
Power	Wide DC power input from 7 to 24 Volts Solar power set-ups available
Internal Battery	Lithium iron phosphate (LiFePO4) rechargeable backup battery (>1 hour operation).

Sensing:

Alphasense optical particle counter (OPC-N3):	PM1, PM2.5 and PM10 Plus approximated readings up to 40 microns.
Ultra-low noise circuitry	Maximises repeatability of electrochemical sensing.

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High frequency sampling:	Variable sampling rates with a frequency up to 30 samples a minute.
Optional Single Parameter Gas Sensor:	One Alphasense electrochemical sensor OR PID for VOCs OR NDIR for CO2. Available sensors: CO, H2S, NO, NO2, O3, SO2, VOCs OR CO2.
Data Correction	Refined through co-location with government reference equipment.
Platform:	
<ul style="list-style-type: none"> • Runs Debian Linux operating system for robust operation and ease of integration with other sensor systems. • SAMA5D27 CPU. • Real-time clock with battery backup. Time synchronisation is via GPS receiver, network time protocol or real-time clock, as available. 	
Communication & Location:	
<ul style="list-style-type: none"> • 4G mobile communications for real-time data delivery to the cloud. • GPS / GLONASS receiver. 	
Data Infrastructure:	
<ul style="list-style-type: none"> • Sense data messaging, control messaging and data storage using Amazon Web Services (AWS) or customer's own infrastructure. • Local microSD data storage. • Eagle.IO software 	



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