

ZEPHYR® Air Quality Sensor

Specification Sheet



Mechanical	
Size	235mm (h) x 160mm (w) x 114mm (d)
Weight	1750g - 2000g (dependent on cartridge)
Construction	Extruded aluminium body, hard anodised with ASA-PC end mouldings. Stainless steel mounting brackets for 80-140mm diameter poles.

Electrical	
Power Inputs	12-32V DC via IP68 connector for automotive applications (~13.8V for cars and LCV, ~27.6V for HGV) or solar powered applications (~18-20V) 5V DC via micro-USB (used for communication)
Internal Battery	Li-Ion ~55 Whr. Charged by MPPT battery charging controller to maximise solar panel output.
Solar Panel Option	50WP output Bracket, mount and straps included 530mm (h) x 670mm (w) x 250mm (d)

Cartridge Options						Optional
Standard Cartridge			Enhanced Cartridge			Pumped version
Measure	Estimated Accuracy	Range	Measure	Estimated Accuracy	Range	Can be added to any cartridge option to allow sampling through an inlet for mobile applications. A fixed-displacement pump pulls a sample through the sensor cartridges.
NO ₂	+/- 5µg/m ³	0-20,000µg/m ³	NO ₂	+/- 5µg/m ³	0-20,000µg/m ³	
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O ₃ using MOS (Metal Oxide Semiconductor) and EC (electrochemical) sensors.	+/- 8µg/m ³	0-20,000µg/m ³	O ₃ using MOS (Metal Oxide Semiconductor) and EC (electrochemical) sensors.	+/- 8µg/m ³	0-20,000µg/m ³	
PM ₁	+/- 5µg/m ³	0-20,000µg/m ³	CO	+/- 0.3 ppm	0-500 ppm	
PM _{2.5}	+/- 5µg/m ³	0-20,000µg/m ³	H ₂ S	+/- 5µg/m ³	0-20,000µg/m ³	
PM ₁₀	+/- 5µg/m ³	0-20,000µg/m ³	SO ₂	+/- 5µg/m ³	0-20,000µg/m ³	
Temperature & relative humidity			PM ₁	+/- 5µg/m ³	0-20,000µg/m ³	
			PM _{2.5}	+/- 5µg/m ³	0-20,000µg/m ³	
			PM ₁₀	+/- 5µg/m ³	0-20,000µg/m ³	
			Temperature & relative humidity			

All cartridges use active sampling. Other gas and sensing options are available such as CO₂ and noise.

Location Sensing	
High sensitivity GNSS	GPS, GLONASS, Galileo and Beidou module with internal active antenna. 3 axis MEMS accelerator

Internal Storage	
8GB SD Card	Sufficient for 16 million measurements

Data Handling	
GSM module with internal antenna	During the sensing programme, data is collected inside the unit is uploaded to the database at configurable intervals
Amazon web services	Data infrastructure is hosted by Amazon web services to give high service availability & resilience.

Data Access	
Zephyr™ Data Portal	View and download data via a URL link to a bespoke Zephyr dashboard
Web API's	Data can be integrated into existing systems such as traffic management, environmental reports and GIS.

User Scenario	Typical Measurements Interval	Maximum Run Time
Static - external power	1-60 minutes	Indefinite*
Static - with solar panel	1-60 minutes	Indefinite*
Mobile - external power	2-5 seconds	Indefinite*
Mobile - battery	5-30 seconds	24 - 48 hours*

*Ongoing maintenance packages are available for continuous operation



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