Clearview Intelligence

TECHNICAL DATASHEET

AQMesh Air Quality Sensor

Integrated sensors and software for real-time, superior air quality monitoring

Physical Dimensions

Enclosure	ABS
Environmental	Temperature range: -20°C to +40°C Humidity range: 15 to 95% RH IP65 protection
Mounting	Pod supplied with mounting bracket for walls/posts
Approx size & Weight	Length: 170mm Width: 220 mm Height (excluding antenna): 250mm Height (including antenna): 430mm Weight 2-2.7kg

Data Access and communication

Communication	Raw data sent to server by cellular network. Worldwide coverage 4G/5G LTE Cat M1/NB1 with 2G fallback.
Measurement period	Variable, from 1 minute to 1 hour
Transmission frequency	Variable, from 5 minutes to 12 hour intervals
Data platform	Insight browser based platform
Data access	Reports/data download/API data access

GAS Sensors

Sensor	Type	Units	Range	LOD	LOC	Precision	Accuracy
NO	Electrochemical	ppb or µg/m³	0-20,000 ppb	<1 ppb	<5 ppb	>0.9	1 ppb
NO2	Electrochemical	ppb or µg/m³	0-20,000 ppb	<1 ppb	<5 ppb	>0.85	4 ppb
NOx	Electrochemical	ppb or µg/m³	0-40,000 ppb	<2 ppb	<10 ppb	>0.9	4 ppb
O3	Electrochemical	ppb or µg/m³	0-20,000 ppb	<1 ppb	<5 ppb	>0.9	5 ppb
CO	Electrochemical	ppb or µg/m³	0-1,000,000 ppb	<50 ppb	<50 ppb	>0.8	20 ppb
SO2	Electrochemical	ppb or µg/m³	0-100,000 ppb	<5 ppb	<10 ppb	>0.7	20 ppb
H2S	Electrochemical	ppb or µg/m³	0-100,000 ppb	<1 ppb	<5 ppb	>0.7	1 ppb
TVOC	Electrochemical	ppm	0-2.5 ppm	<0.1 ppm	<0.25 ppm	>0.95	0.05 ppm
CO2	NDIR	ppm or mg/m³	0-5,000 ppm	<1 ppm	<1 ppm	>0.9	30 ppm

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Particle Monitor Sensor

Sensor	Type	Units	Range	LOD	Precision	Accuracy
PM1	Optical particle counter	µg/m^3	0-100,000 µg/m^3	0 µg/m^3	>0.9	5 µg/m^3
PM2.5	Optical particle counter	µg/m^3	0-150,000 µg/m^3	0 µg/m^3	>0.9	5 µg/m^3
PM4	Optical particle counter	µg/m^3	0-225,000 µg/m^3	0 µg/m^3	>0.9	5 µg/m^3
PM10	Optical particle counter	µg/m^3	0-250,000 µg/m^3	0 µg/m^3	>0.85	5 µg/m^3
PM_Total	Optical particle counter	µg/m^3	0-350,000 µg/m^3	0 µg/m^3	>0.85	5 µg/m^3

Additional Sensors

Sensor	Type	Units	Range	LOD	Precision	Accuracy
Pod temperature	Solid state	°C or °F	-20°C to 100°C	0.1°C	>0.9	2°C
Pressure	Solid state	mb	500 to 1500 mb	1 mb	>0.9	5 mb
Humidity	Solid state	%	0 to 100%	1% RH	>0.9	5% RH
Noise	Omnidirectional mic	dB	35 to 100 dB SPL	20 Hz – 20 kHz	>0.8	1 dB

Wind Speed & Direction Sensor

Sensor	Type	Units	Range	Resolution	Accuracy
Wind speed	Solid state	ms^{-2}	0 to 30 ms^{-2}	0.01 ms^{-2}	2%
Wind direction	Solid state	° degrees	0 to 359°	1°	2°

Sensor Life

Sensor Type	Expected lifespan	Notes
Electrochemical	2 years	See AQMesh standard operating procedure
NDIR	5 years	See AQMesh standard operating procedure
Solid state	5 years	See AQMesh standard operating procedure
Omnidirectional microphone	5 years	See AQMesh standard operating procedure
Optical particle counter	2 years	Maintenance dependent on application & settings

Power Source – Expected Lifespan

Option	Expected lifespan	Notes
External DC	>5 years	9 – 24V DC
Lithium metal battery pack#10	>24 months	Dependent on measurement strategy & pod spec
External high-capacity battery pack	>60 months	Dependent on measurement strategy & pod spec
NiMH rechargeable battery pack	>4 months	Dependent on measurement strategy & pod spec
Solar power pack	>5 years	Change internal lead-acid battery every 24 months

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