

Ambient Air Quality Monitoring Device



Polludrone is a Continuous Ambient Air Quality Monitoring System (CAAQMS). It is capable of monitoring various environmental parameters related to air quality, noise, odour, weather, radiation etc. It measures the particulate matter and gaseous concentrations in the ambient air in real-time. Using external probes, it can also monitor other auxiliary parameters like traffic, disaster etc.

Polludrone is an ideal choice for smart cities as well as urban infrastructure applications like roadside, campus, and airport monitoring. It is easily integrable with a Smart Pole/Intelligent Pole.

Product Features



Ultimate Durability



Weather Resistant



Compact and Lightweight



Solar Powered



Retrofit Design



Real-Time Data



Tamper Proof



Network Agnostic



Over-The-Air Updates



3-level Calibration

Our Technology

The air quality monitoring device has all the air quality sensor modules integrated into a single enclosure. Each sensor module works on different technologies. Our sensing technology works on proven working principles such as NDIR, Electrochemical Analysis, Semiconductor, Optical Measurement, and Laser-Scattering. As a part of our proprietary 'Micro Active Sampling' (e-breathing technology), we have a sophisticated suction-and-exhaust system for air sample collection and monitoring inside a controlled environment. This isolates the effect of the external environment on measurement to achieve 13% higher accuracy than the industry standards.

Product Usecases



Road-side and Tunnels

Pollution monitoring at roads and tunnels can enable authorities to layout a pollution mitigation action plan.



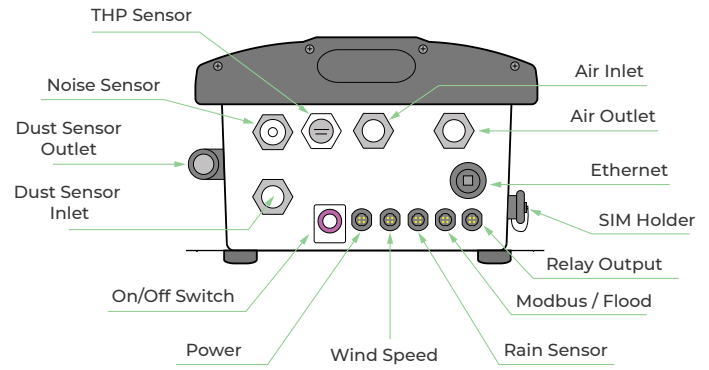
Smart City

Pollution monitoring at strategic locations in a smart-city empowers city authorities to obtain actionable insights for pollution control.

General Specifications

Size	360mm (H) x 328mm (W) x 200mm (D)
Weight	9.8 Kg
Material	Aluminum Magnesium Alloy, Mild-steel (With Powder Coating), FRP
Certifications	CE & FCC Certified, PTCRB Certified Communication Module

Connectivity Options		Specification
Wireless	GSM	Global 2G / 3G
	LoRa	868 MHz, 915 MHz
	LTE	CAT-M1
	NB-IoT	CAT-NB1
	Sigfox	868 to 869 MHz, 902 to 928 MHz
	Wifi	802.11 b/g/n
Wired	Ethernet	10BaseT/100BaseTx
	MODBUS	RS485 RTU



Technical Specifications

Avg. Power Consumption	2.5 Watt (Actual consumption depends upon the number of parameters)
Power Input Options	External 110-230V AC 50-60Hz, 40Watt Monocrystal Solar Panel
Operating Temperature	-20 °C to 60 °C

Sensing Parameters

ID	Parameter	Range	Resolution	Min. Detection	Drift	Working Principle	Measurement Principle	Sample Rate	Expected Sensor Life		
OZPM_1	Suspended Particulate Matters with size less than 2.5µ (PM _{2.5})	Upto 5000 µg/m ³	0.1 µg/m ³	1 µg/m ³	N.A.	Opticle Particle Counter	Active Sampling	1 L /min	5000 hours		
OZPM_2	Suspended Particulate Matters with size less than 10µ (PM ₁₀)										
OZCO2_1	Carbon Dioxide (CO ₂)	0-5000 ppm	1 ppm	400 ppm	±5 ppm / Year	NDIR		325 mL per sample		2 years	
OZCO_3	Carbon Monoxide (CO)	0-1000 ppm	0.75 ppm	0.75 ppm	< 2% / Month						
OZSO2_1	Sulfur Dioxide (SO ₂)	0-20 ppm	0.001 ppm	0.01 ppm	±20 ppb / Year	Electrochemical		N.A.		2 years	
OZNO_1	Nitric Oxide (NO)	0-20 ppm	0.001 ppm	0.01 ppm	±50 ppb / Year						
OZNO2_1	Nitrogen Dioxide (NO ₂)	0-20 ppm	0.001 ppm	0.01 ppm	±20 ppb / Year						
OZO3_1	Ozone (O ₃)	0-20 ppm	0.001 ppm	0.01 ppm	±20 ppb / Year						
OZN_1	Ambient Noise	Upto 140 dB	1 dB	0.5 dB	N.A.	Capacitive		Passive Monitoring		N.A.	3 years
OZLI_1	Light Intensity	Up to 1,00,000 Lux	1 Lux	1 Lux	N.A.	Photo-conductivity					
OZUV_1	UV Radiation (0-12 UVI)	0.1-100,000 uW/cm ²	0.1 uW/cm ²	0.1 uW/cm ²	N.A.						
OZVLI_1	Visible Light Intensity	Up to 5000 Lux	0.1 Lux	0.1 Lux	N.A.	Solid state semi conductor sensing					
OZTEMP_1	Temperature	-40 to 125°C	0.01°C	-40 °C	N.A.						
OZHUM_1	Humidity	100% Rh	0.1%	0.1%	N.A.						
OZPRES_1	Barometric Pressure	300-1100 hPa	0.18 Pa	300 hPa	N.A.				2 years		

Accurate Air Quality Monitoring And Advanced Data Analytics