

Ambient Dust Monitor



Dustroid is an Online Particulate Monitoring system to measure the concentration of dust particles in the ambient air. It is capable of monitoring various particulate size ranging from 1 micron to 100 microns such as Ultrafine Suspended Particulate Matter (UFPM), Suspended Particulate Matter (SPM), Respiratory Suspended Particulate Matter (RSPM) and Total Suspended Particulates (TSP). It works on Active Sampling method to count particulate matters using a highly accurate laser beam. Dustroid can be used for dust surveys in areas with dust-laden activities like construction, mining, quarrying, ports, metallurgical processes, and many more. The data gathered from Dustroid can assist in dust suppression automation, for instance, to activate suppressants at the location once the threshold is breached.

Product Features



Ultimate
Durability



Weather
Resistant



Compact and
Lightweight



Heated
Inlet



Real-Time
Data



Retrofit
Design



Network
Agnostic



Over-The-Air
Updates

Our Technology

Dustroid Pro is technologically equipped and works on the Active Sampling method to count particulate matters using a highly accurate laser beam. Additionally, it has a heated inlet for dehumidification of air-sample. Its Anti-static inlet avoids loss of particulate during sampling. It offers remote calibration capabilities along with auto device firmware updates. The intelligent optical particle counter can measure data with high accuracy and transmit the same through various data communication modules like GSM, WiFi, LoRa, etc. The data is transmitted to the Oizom cloud in near real-time.

Product Usecases



Mines

Dustroid installation is crucial at mining sites to monitor the particulate generation and notify the dust suppression crew. The solution provides a safer working environment for the miners.

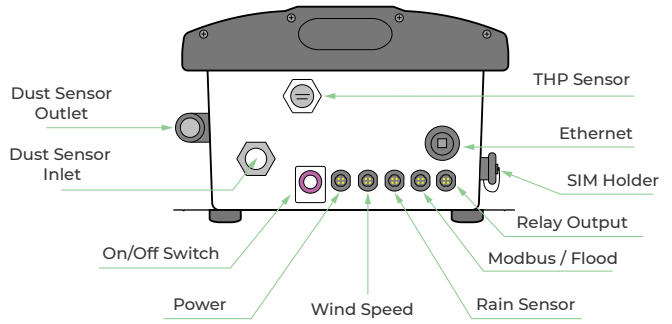


Sea Ports

Dust pollution at ports from harbour activities like ship movement, loading-unloading of goods can be reduced by taking timely actions by authorities.

General Specifications

Size	360mm (H) x 328mm (W) x 200mm (D)
Weight	6.5 Kg (instrument weight)
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 / 4G
	LoRa	868 MHz / 915 MHz
	LTE	CAT-M1
	NB-IoT	CAT-NB1
	Sigfox	868 to 869 MHz, 902 to 928 MHz
Wired	Wifi	AP Mode and Station Mode
	Ethernet	Static / DHCP Configuration
	MODBUS	RS485 RTU / TCP
	Relay Output	2 Channel

Technical Specifications

Avg. Power Consumption	5 Watt (Actual consumption depends upon the number of parameters)
Power Input Options	External 110-230V AC 50-60Hz
Operating Temperature	-20 °C to 60 °C

Sensing Parameters

ID	Parameter	Range	Resolution	Min. Detection	Drift	Working Principle	Measurement Principle	Flow Rate	Expected Sensor Life
OZPM_1	Suspended Particulate Matters with size less than 10µ (PM ₁₀)	0-5000 µg/m ³	0.1 µg/m ³	1 µg/m ³	N.A.	Optical Particle Counter (with heated inlet)	Continuous Flow Active Monitoring	1 L/min	5000 hours
OZPM_2	Ultra-fine Particulate Matters with size less than 1µ (PM ₁)								
OZPM_3	Suspended Particulate Matters with size less than 2.5µ (PM _{2.5})								
OZPM_4	Total Suspended Particulates (PM ₁₀₀)								
OZTEMP_1	Temperature	-40 °C to 125 °C	0.01 °C	-40 °C	N.A.	Solid State Semiconductor Sensing	Passive Monitoring	N.A.	2 years
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.				

External Modules (optional)

1 Rain Sensor

- Tipping Bucket
- In mm / inch

2 Wind Sensor

- Ultrasonic sensor
- 360°, 0-40 m/s

3 Noise Sensor

- Capacitance
- Upto 140 dB

ID	Parameter	Range	Resolution	Min. Detection	Working Principle	Expected Sensor Life
OZWSD_1	Wind Speed	0-40 m/s	0.1 m/s	0.1 m/s	Ultrasonic	3 years
	Wind Direction	0-359°	1°	1°		
OZRAIN_1	Rainfall Monitoring	N.A.	0.5 mm	0.5 mm	Tipping bucket	2 years
OZN_1	Ambient Noise	Up to 140 dB	1 dB	0.5 dB	Capacitance	

Accurate Air Quality Monitoring And Advanced Data Analytics



306, Indraprasth Corporate,
Prahlanadnagar, Ahmedabad - India
 contact@oizom.com / hello@oizom.com
 +91 88666 60025 / 39

Visit us at:
www.oizom.com