

Weathercom[®]

Automatic Weather Station



About Weathercom®



Oizom's Weathercom® is an Automatic Weather Station (AWS) that goes beyond basic weather reporting by providing real-time, hyper-local data on a comprehensive range of meteorological conditions. Unlike traditional weather stations that rely on manual data collection, Weathercom offers continuous monitoring, making it a valuable tool for various sectors, such as Environmental Monitoring, Agriculture, Roads and Highways, Ports, and Construction.

The equipment is easily installed with our plug-and-play feature, and solar panel makes it independent of any power source. It can withstand extreme weather conditions from tropical heat to arctic cold as well as extreme wind and rains. These features make Weathercom® an ideal choice for comprehensive meteorological monitoring.



Product Features



Solar Powered with Battery Backup

Compatible to charge internal battery using solar power.



Weather Resistant

IP66 Grade (certified) enclosure for endurance against harsh weather conditions.



Retrofit Design

Plug and play design for ease of implementation.



Over-The-Air Update

Automatically upgradeable from a central server without any onsite visit.



Compact

Light-weight and compact system that can be installed at 12-15 feet (4-5 m) height.



Real-Time Data

Continuous monitoring and real-time data transfer at configurable intervals.



Ultimate Durability

Made of high-grade engineering-metal and composite polymers for a long life.



Network Agnostic

Supports a wide range of connectivity options like GSM / GPRS / WiFi / LoRa / NBIoT / Ethernet / Modbus.



Identity And Configuration

Each equipment carries its unique identity with geo-tagging through wireless configuration.



Internal Storage

Internal data storage capacity of upto 8 GB or 90 days.

Key Benefits



Robust And Rugged
Durable enclosure to sustain extreme climatic conditions.



Multi-parameter
Compatible with a wide range of parameters including PM, gases and meteorological parameters



Seamless Connectivity
A wide range of options of wired and wireless connectivity.



Cloud Platform
Visualize and analyze data in the cloud. Easy data integration via APIs.



Accurate Data
Gives accurate readings in real-time to detect concentrations in ambient air.



Easy to install
Effortless installation with versatile mounting arrangements.

Weathercom® Usecases



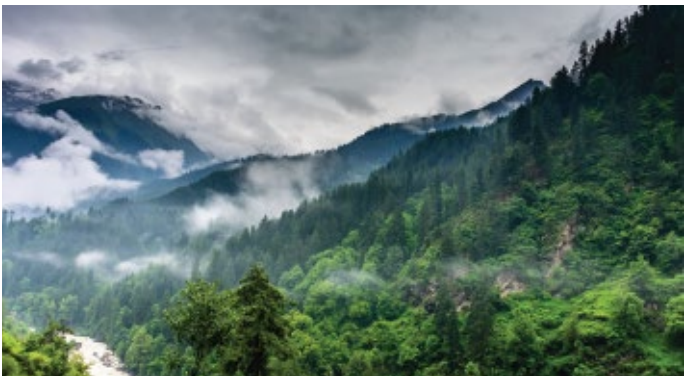
Sea Ports

The data acquired from the device can help detect approaching storms or high winds and take the required decisions beforehand.



Roads And Highways

Road accidents can be prevented by cautioning drivers and setting up a dynamic speed limit as per the weather conditions.



Flora And Fauna

Weathercom® provides actionable data insights to agricultural industries and forest departments worldwide.



Smart City

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

Parameters

Sensor	ID	Range	Resolution	Min. Detection	Working Principle	Expected Sensor Life	
Wind Speed	OZWSD_1	0-40 m/s	0.1 m/s	0.1 m/s	Ultrasonic	2 years	
Wind Direction		0-359°	1°	1°			
Rain	OZRAIN_1	N.A.	0.25 mm	0.25 mm	Tipping bucket		
Ambient Noise	OZN_1	Up to 140 dB	1 dB	0.5 dB	Capacitive	2 years	
Temperature	OZTEMP_1	-40°C to 125°C	0.01 °C	-40°C	Solid State Semiconductor Sensing		
Humidity	OZHUM_1	100% Rh	0.10%	0.10%			
Barometric Pressure	OZPRES_1	300-1100 hPa	0.18 Pa	300 hPa			
Solar Radiation 300 - 1100 nm	Light Intensity	OZUV_1	Up to 1,00,000 Lux	1 Lux	1 Lux	Photoconductivity	3 years
	Visible Light		Upto 5000 Lux	0.1 Lux	0.1 Lux		
	UV Radiation		0.1-100,000 uW/cm ²	0.1 uW/cm ²	0.1 uW/cm ²		
	UV Index		0-12	-	-		

Note: Expected Sensor Life can vary, subject to actual concentration on-site. In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification. The data contained in this document is for guidance only. Oizom™ accepts no liability for any consequential losses, injury or damage resulting from the use of this document or the information contained within.

Specifications



Mechanical

Size	360mm (H) x 328mm (W) x 200mm (D)
Weight	8.7 Kg (instrument weight)
Material	Aluminum Magnesium Alloy, Mild-steel (With Powder Coating), FRP
Certifications	CE, NEMA 4X, IP66, RoHS



Electrical

Avg. Power Consumption	5 Watt (Actual consumption depends upon the number of parameters)
Power Input Options	AC : External 110-240V AC, 50-60Hz DC : Uninterrupted 24V DC, 2 Ampere 60 Watt 24V Solar Panel
SMPS Specs	24V, 2Amps output UL-62368 & CAN/CSA C22.2 Certified
Battery Backup Time	Upto 12 Hours
Battery Specs	Lithium iron phosphate (LiFePO4) battery cell with rated voltage 12.8V Capacity 6Ah



Technical

Processor	Quad Core ARM Cortex
Memory	2GB RAM 8GB eMMC ROM
Device Interface	On-device Software / API / Cloud Platform
Internal Data Storage	Upto 8 GB or 90 days



Environmental

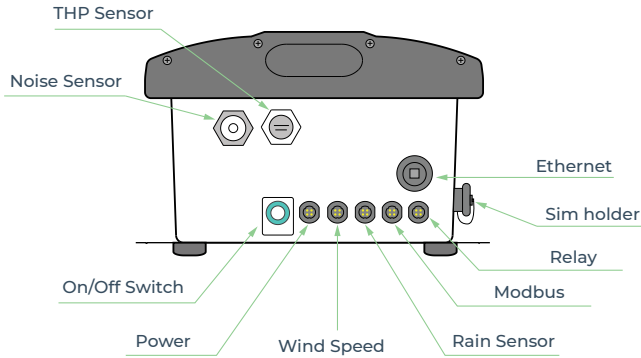
Operating Temperature	-20 °C to 60 °C
Operating Humidity	0-93% RH
Recommended Humidity	15-90% RH
Storage Conditions	10 - 40°C

Sensing

Gas Measurement Principle	Active Sampling with Sampling rate of 325 mL/Sample
Dust Measurement Principle	Active Sampling with Sampling rate of 1 L / min
Warm up time	< 2 minutes for data stabilisation

Communication

Data Interval	2-30 (configurable) minutes
Data-push Protocol	HTTP post request to host server
Data-pull	HTTP request on device IP
Firmware Updates	Over-The-Air Firmware Update
Standby Connectivity	GSM (2G/3G/4G) for remote diagnosis, FOTA updates, and cloud calibration
Certification	PTCRB, CE, FCC, RoHS, ICASA, GCF



Connectivity Options	Specification
Wireless	<ul style="list-style-type: none"> 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 Wi-Fi: AP Mode and Station Mode
Wired	<ul style="list-style-type: none"> ETHERNET: Static / DHCP Configuration Modbus: RS485 RTU / TCP RELAY: 2 Channel

Functional Specifications

Strategic Location Selection

EPA's Meteorological guidelines for regulatory modelling mentions the following distance/height from the ground level for strategic sensor location:

Wind Speed and Direction

Wind sensor should be at least 10 m above the surface to avoid hindrance by buildings.

Temperature and Humidity

This sensor should be located 2 m above the surface.

Rain Gauge

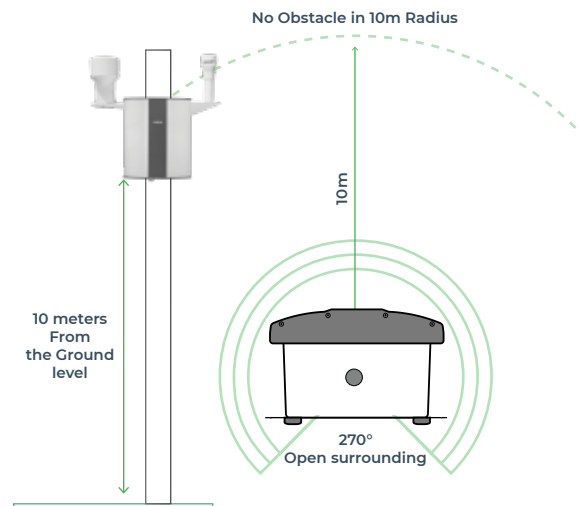
It should be placed on the ground level such that its mouth faces horizontally towards the sky.

Solar Radiation

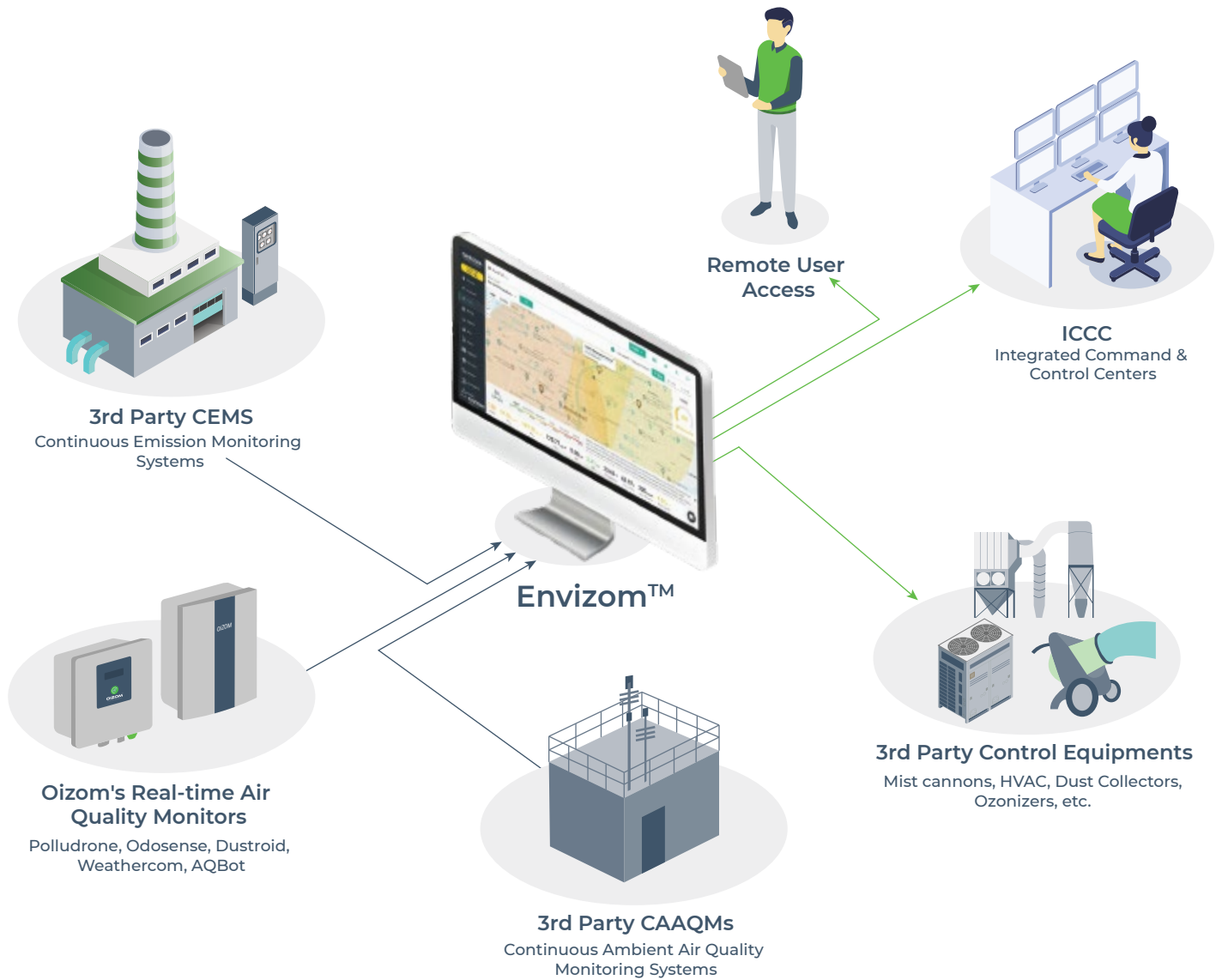
Pyranometer should be placed such that it has unrestricted incoming radiations from all directions.

Installation

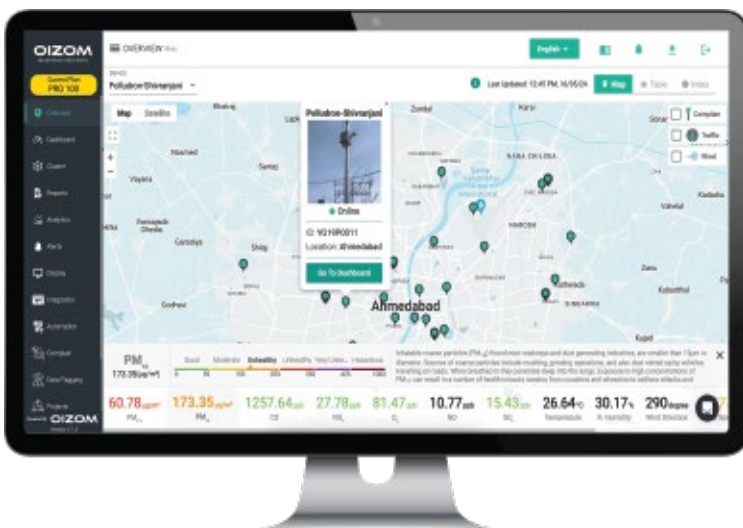
Preferred Mounting	Pole / Wall (preferably 270° open surrounding)
Installation Height	12-15 feet (4-5 meters)
Direction	As per maximum direct sunlight exposure
Power Availability	Constant AC / DC supply within a 2-meter range from the unit or solar panel
Network Availability	Uninterrupted network connection



Solution Architecture

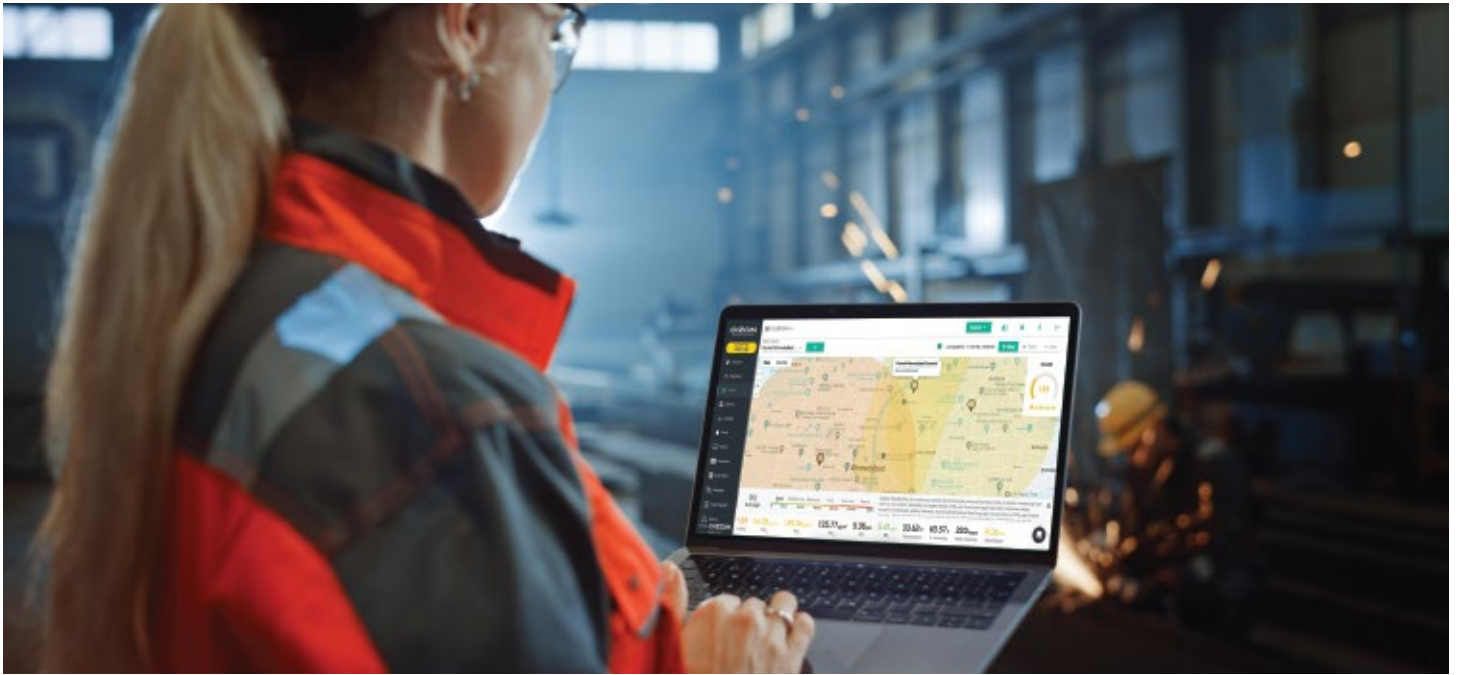


Envizom™ Data Visualization and Analytics Platform



Envizom™ is an Environmental monitoring software for real-time air quality data acquisition, visualization, and analytics. The Oizom® environmental data interpretation engine fetches the data from the Oizom® Environmental monitoring stations. On receiving the data, the engine runs necessary corrections and compensation algorithms. Envizom™ uses secured HTTPS servers for data storage. Alternatively, this data can also be stored on-premise local servers.

Envizom™ Capabilities



Real-time Data



Easy to Integrate



Smart alerts



Analytics



User friendly interface



Process Automation

Privacy First Platform



Data Privacy

The data shared with the client uses an encryption server through HTTPS Secure Socket layers. Envizom™ also uses AES encryption for connection that adds to data safety.



Data Ownership

Envizom™ creates a secured and encrypted password combination for the user login. Oizom® ensures 100% privacy of the data and doesn't share without relevant permissions.



Data Transparency

Data collected from Oizom® equipment runs through the Environment Data Interpretation Engine. It processes various algorithms and eliminates environmental impact interferences on the sensors.

Case Studies



Monitoring weather on a real-time basis in Dholera Smart City

Oizom® is monitoring the weather in the Dholera Smart city on a real-time basis by installing Weathercom.®



India



July 2020



Smart City

Monitoring Weather at Adani Dighi Port, Maharashtra

Adani Dighi Port in Maharashtra is monitoring the weather by using Oizom®'s Weather Monitoring Station – Weathercom.®



India



November 2021



Seaports



Case Studies



Weather monitoring with Pollucon at Mormugao Port, Goa

At Adani Mormugao Port Terminal in Goa, weather monitoring was done with Pollucon Laboratories to measure the wind and rain in the area.



India



May 2021



Seaports

Meteorology Data Monitoring at WWTP, Dubai

Weathercom® were installed at a Waster Water Treatment Facility for Dubai Municipality. Crucial meteorological data such as wind direction speed along with Odosense® is analysed for source detection.



Dubai



March 2022



WWTP



Case Studies



Flood and weather monitoring in Colombia

Oizom®'s weather monitoring station, Weathercom® is monitoring the rainfall and flood levels in Colombia to warn and safeguard civilians from these natural disasters.



Colombia



February 2022



Smart City

Weather Monitoring at Kandla Port, India

At Kandla Port where over 100 MMT Cargo is handled, Weathercom® monitors Rain, Wind Direction and Wind Speed data for Port Personnel Daily activities and weather data.



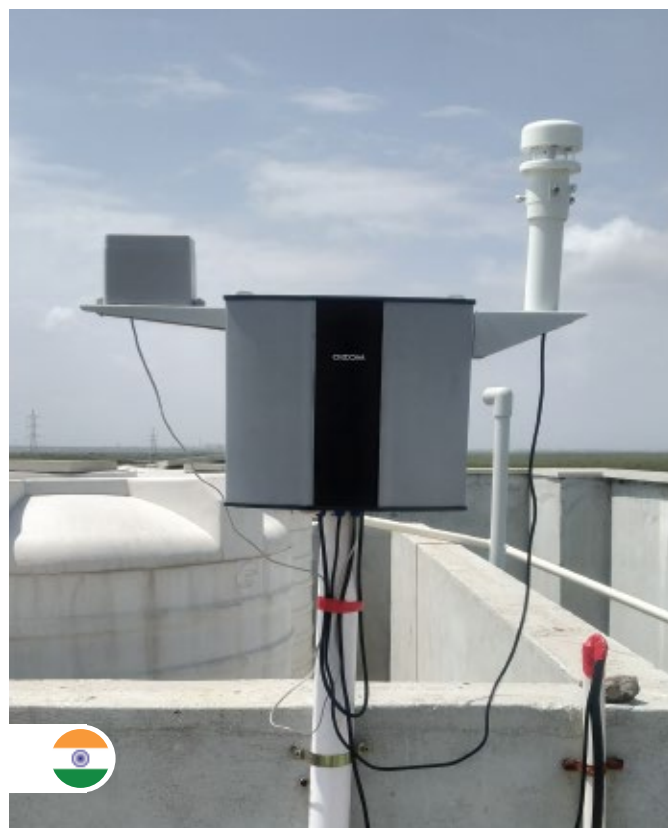
India



July 2020



Sea Ports



About Oizom®



Leaders in sensor based
air quality monitoring



Plug and play monitors
for hassle free setup



Low powered solutions
for multiple applications

Oizom® is an environmental IoT company offering data-driven environmental solutions for better decision-making. With our sensor-based hardware, we monitor various environmental parameters like air quality, noise, odor, radiation, weather conditions, etc. Our data analytics platform derives many actionable insights for authorities, communities, and industries. Oizom® strives to play an essential role in a sustainable future through smart environmental solutions and data science.

Oizom® has years of experience in stimulating innovation by creating groundbreaking technology for environmental monitoring. With an IoT-based development approach, Oizom® has been able to successfully unlock multiple solutions, catering to various industries.

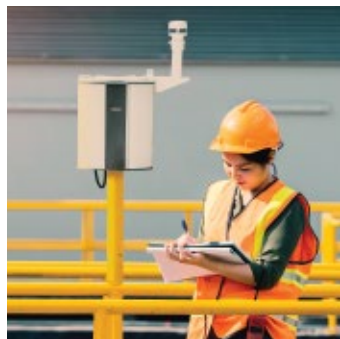
Other Oizom® Products



Polludrone®

Ambient Air Quality Monitoring

Polludrone® is ideal for real-time ambient air quality monitoring for urban and industrial applications.



Odosense®

Odor Monitoring System

Odosense® monitors various odourful and toxic gases in the environment and provides insight into odor dispersion.



Dustroid®

Real-time Dust Monitor

Dustroid® is an online particulate monitoring system to measure a wide spectrum of particulate matter sizes.



AQBot™

Single Parameter Air Quality Monitor

AQBot™ is an industrial grade single parameter air quality monitor with automation capabilities.





Trusted by

70+ Countries



Solutions Installed in

65+ Cities



Total Devices Installed

3000+



Total Population Covered

200 million+

Global Presence



Changing the way Industries monitor air quality



Get in touch



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