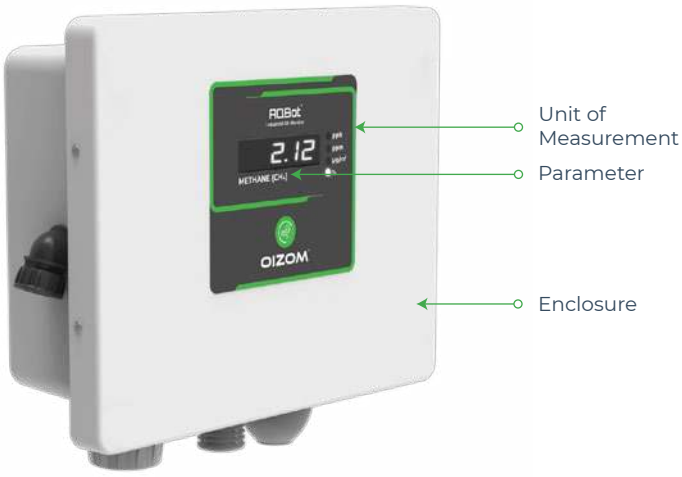
OIZOM®
REDEFINING RESOURCES

AQBot™

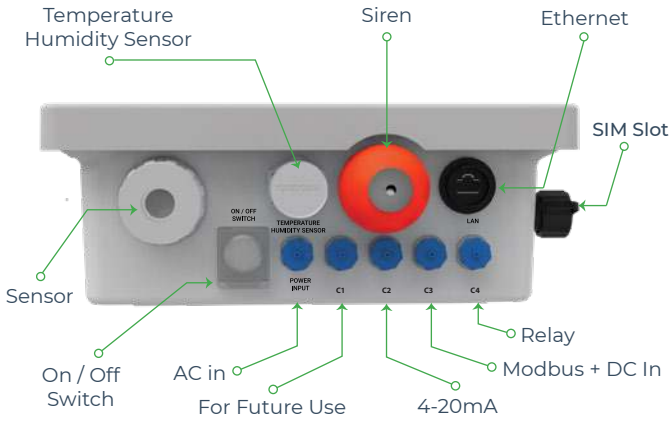
Industrial Grade Single Parameter Air Quality Monitor

About AQBot™



AQBot™ is an industrial grade single parameter air quality monitor with automation capabilities. AQBot™ Series offers a wide range of air quality parameters to choose from. AQBot™ product range consists of critical parameters and toxic gases like Total Volatile Organic Compounds (TVOC), Ammonia (NH_3), Hydrogen Sulfide (H_2S), Methane (CH_4), Carbon Monoxide (CO), Formaldehyde (CH_2O), Particulate Matter (PM_1, $PM_{2.5}$, PM_{10}, PM_{100}), Ambient Noise. The AQBot™ series is designed for easy operation.

The AQBot™ enclosure houses robust electronics to last long in extreme industrial conditions. It offers industry-standard connectivity options in addition to multiple modes of wired and wireless communications. Using a wide range of communication capabilities, AQBot™ enables the Industrial Internet Of Things (IIoT) which is the backbone of Industrial Revolution 4.0. AQBot™ can easily integrate with existing building monitoring or plant control systems.



Product Features

- Wide range of parameters
- On-device display
- Real-time data
- Data analytics software
- Built-in relay
- Alerts and notifications
- Compact
- Durable
- Wired commmunication
- Wireless commmunication
- Internal data storage
- Dedicated support

Key Benefits

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

Robust And Rugged
Durable enclosure to sustain harsh industrial conditions.

Relay-Based Automation
In-built relay operation for automation

Cloud Platform
Visualise and analyse data in the cloud. Easy data integration via APIs.

Easy to install
Effortless installation with versatile mounting arrangements.

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

AQBot™ Usecases

Industrial Fenceline
Comprehensively assess the environmental impact of industrial activities and monitor the fugitive emissions, and gas leaks on a real-time basis.

Environmental Automation
Improve your Environmental Process control by monitoring air pollution, odour and other environmental conditions on a real-time basis.

Wastewater
Monitoring odour intensity at waste water treatment plants can help regulate odour emission by appropriate maintenance on time.

Industrial EHS
Conduct Environmental audits and improve your ESG scores by optimizing the Environmental, Health, and Safety of the citizens.

Parameters

ID	Parameter	Range	Resolution	Min. Det.	Working Principle	Sensor Life
OZNH3_1 OZNH3_2 OZNH3_3	Ammonia (NH_3)	0-20 ppm 0-100 ppm 0-1000 ppm	0.3 ppm 0.3 ppm 2 ppm	0.3 ppm 0.3 ppm 2 ppm	Electrochemical Sensing	2 Years
OZCH4_1	Methane (CH_4)	500-1500 ppm	1 ppm	500 ppm	Molecular Property Spectrometer (MPS)	2 Years
OZH2S_1 OZH2S_2 OZH2S_3 OZH2S_4	Hydrogen Sulfide (H_2S)	0-1.5 ppm 0-50 ppm 0-200 ppm 0-2000 ppm	0.001 ppm 0.05 ppm 0.2 ppm 2 ppm	0.01 ppm 0.05 ppm 0.2 ppm 2 ppm	Electrochemical Sensing	2 Years
OZTVOC_1 OZTVOC_2	Total Volatile Organic Compounds (VOC)	0-40 ppm 0-200 ppm	0.001 ppm 0.05 ppm	0.005 ppm 0.05 ppm	Photo Ionization Detection (PID)	5000 Hours
OZPM_1 OZPM_2 OZPM_3 OZPM_4	Particulate Matter ($PM_{2.5}$) Particulate Matter (PM_{10}) Particulate Matter (PM_1) Particulate Matter (PM_{100})	Upto 5000 µg/m³ Upto 5000 µg/m³ Upto 5000 µg/m³ Upto 30 mg/m³	0.1 µg/m³	1 µg/m³	Optical Particle Counter	5000 Hours
OZN_1	Noise	up to 140 dBA	1 dB	0.5 dB	Capacitive	2 Years
OZCl2_1 OZCl2_2	Chlorine (Cl_2)	0-20 ppm 0-50 ppm	0.05 ppm 0.1 ppm	0.05 ppm 0.1 ppm	Electrochemical Sensing	2 Years
OZHCl_1 OZHCl_2	Hydrogen Chloride (HCl)	0-50 ppm 0-100 ppm	0.5 ppm 1 ppm	0.5 ppm 1 ppm	Electrochemical Sensing	2 Years
OZCH2O_1 OZCH2O_2	Formaldehyde (CH_2O)	0-10 ppm 0-50 ppm	0.05 ppm 0.1 ppm	0.05 ppm 0.1 ppm	Electrochemical Sensing	2 Years
OZCH3SH_1	Methyl Mercaptan (CH_3SH)	0-10 ppm	0.1 ppm	0.1 ppm	Electrochemical Sensing	2 Years
OZSO2_1 OZSO2_2 OZSO2_3	Sulfur Dioxide (SO_2)	0-10 ppm 0-100 ppm 0-2000 ppm	0.001 ppm 0.2 ppm 5 ppm	0.01 ppm 0.2 ppm 5 ppm	Electrochemical Sensing	2 Years
OZNO2_1 OZNO2_2 OZNO2_3	Nitrogen Dioxide (NO_2)	0-10 ppm 0-100 ppm 0-500 ppm	0.001 ppm 0.2 ppm 0.5 ppm	0.01 ppm 0.2 ppm 0.5 ppm	Electrochemical Sensing	2 Years
OZCO_1 OZCO_2 OZCO_3 OZCO_4	Carbon Monoxide (CO)	0-5 ppm 0-100 ppm 0-1000 ppm 0-50 ppm	0.01 ppm 0.1 ppm 0.75 ppm 0.05 ppm	0.01 ppm 0.1 ppm 0.75 ppm 0.05 ppm	Electrochemical Sensing	2 Years
OZNO_1 OZNO_2	Nitric Oxide (NO)	0-5 ppm 0-100 ppm	0.001 ppm 0.5 ppm	0.01 ppm 0.5 ppm	Electrochemical Sensing	2 Years
OZCO2_1	Carbon Dioxide (CO_2)	0-5000 ppm	1 ppm	400 ppm	NDIR	2 Years

Note - If a custom range and resolution of a sensor is required, please contact our team.

Specifications

General Specs

Processor	Quad-Core ARM Cortex A-72
Memory	2GB RAM, 8GB eMMC ROM
Internal data storage	Up to 12 months
Device interface	On-device software, API, Display
Display specification	6 digit 7 Segment Display

Electrical

Power supply	AC: 90VAC- 265VAC 50/60Hz
Power consumption	3.5 W (average)
Wiring connections	Pre-wired supplied with 2m cable

Communication

Wireless communications	Global 2G/3G/4G, LoRa, LTE, NB-IoT, Sigfox, Wifi (Any one)
Wired communications	Ethernet, Modbus TCP, Modbus RTU, RS-485, CANbus (Any one)
Analog output	1 x 4~20mA Current Loop with 12-bit Resolution
Relay outputs	2 programmable relays, volt free relay contacts (1NO, 1 NC)
Beacon/sounder	Built-in, RED flashing light with alarm sounder 95db @ 1m

Mechanical Specs

Operation temperature	-20 to +60°C
Operation humidity	0 - 90%RH, non-condensing
Storage conditions	10 - 40°C
Net weight	2.8 kg
Dimensions	210mm (W) × 258mm (H) × 105mm (D)
Installation method	Wall mount / Pole mount
Housing	NEMA-4X Fire-retardant FRP enclosure
Weather protection	Weather Resistant IP66 Enclosure

Sensing

Target gas	Refer parameter table
Gas sample mode	Natural diffusion
Warm up time	1 hour (cold start) for gas monitoring
Response time (t90)	< 60 Seconds
Signal refresh rate	5 Seconds
Measuring range	Refer parameter table
Accuracy	<±5%FS (at 20±5°C/ 50±20%RH)
Sensor life	Refer parameter table

Data and Calibration

1 Laboratory Calibration

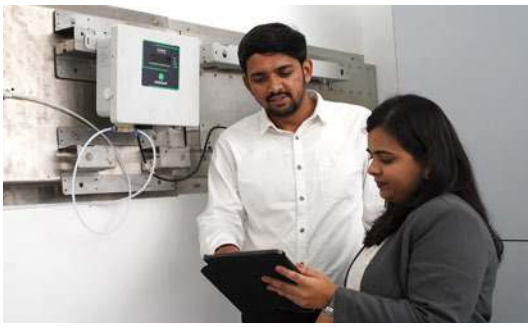
All air quality monitoring systems are calibrated at the ISO/IEC 17025:2017 certified calibration laboratory using standard NIST traceable calibration gas standards as per the international guidelines by USEPA.

2 Collocation Calibration

The monitors are operated adjacent to a custom built reference station housing U.S. EPA designated Federal Equivalent Method (FEM) for collocation calibration to ensure optimum data quality.

3 On-site Calibration

On-site calibration of Oizom devices can be performed using standard calibration gas cylinders of known concentration or by co-locating with a reference standard.



Industrial Applications

Paper And Pulp Industry

H_2S - Lime kiln and evaporator
TVOC - Chemical pulping, bleaching and evaporator
CO_2 - Fuel combustion, lime kiln
CH_3SH - Digester, black liquor storage, recovery boiler

Textile Industry

NO - Sizing process
TVOC - High temperature ovens - drying and coating
Cl_2 - Bleaching process
PM - Cotton handling process and boiler

Leather Industry

H_2S & NH_3 - Beamhouse, unhairing and liming process
TVOC - Finishing operations - drying
PM - Storage and handling of powdered chemicals
Cl_2 - Pickling process

Fisheries Industry

H_2S - Bacteriological and enzymatic decay
NO - Cooking and drying - fishmeal industry
TVOC - Direct and indirect fried dryers
NH_3 - Fish rotting

Cement Industry

CO - Kilns in clinker process
NO_2 - Rotary kiln and vertical shaft kiln, clinker
CO_2 - Limestone decarbonization and fuel combustion
PM - Packaging and ash handling system

Thermal Power Plants

CO - Fuel combustion in boiler
NO - Natural gas/oil/coal based fuel combustion
CO_2 - Boiler fuel combustion
PM - Ash extraction plant

Food And Beverages Industry

Cl_2 - In various disinfecting activities
NH_3 - Refrigeration and cooling systems
CO_2 - Carbonation and fermentation processes

Mining Industry

SO_2 & NO_2 - Extraction including blasting & crushing
CH_4 - Material destruction and natural disintegration
PM - Drilling, blasting and transportation

Wastewater Treatment Plants

CH_4 & CH_3SH - Sludge storage and anaerobic digestion
Cl_2 - Chlorination before outlet discharge

Meat Processing Plants

H_2S - Storage and ETP
CH_4 & CH_3SH - By product, storage & ETP

Dairy Industry

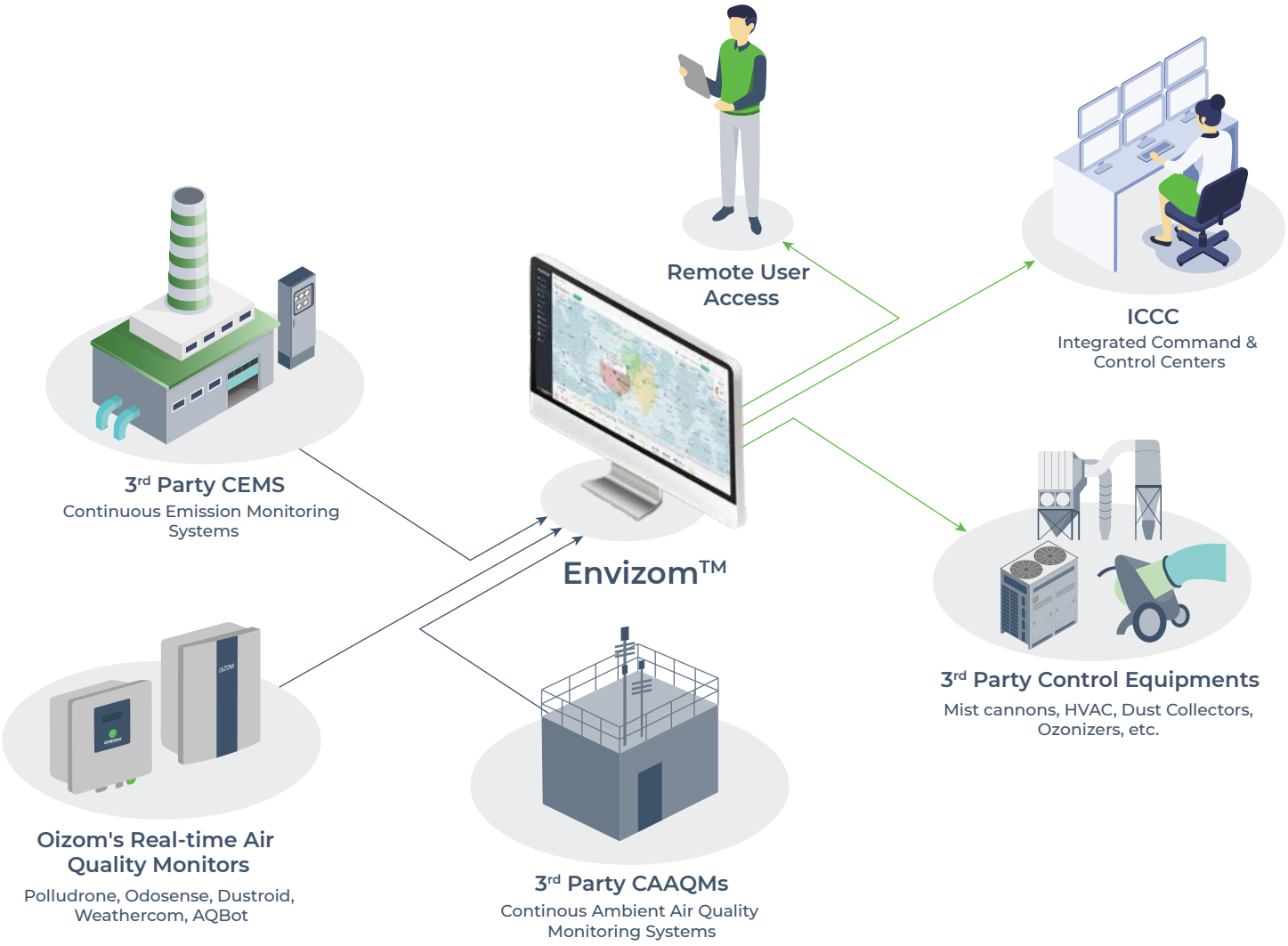
NH_3 - Manure storage and application
CH_4 - Manure in housing and enteric fermentation

All Industries

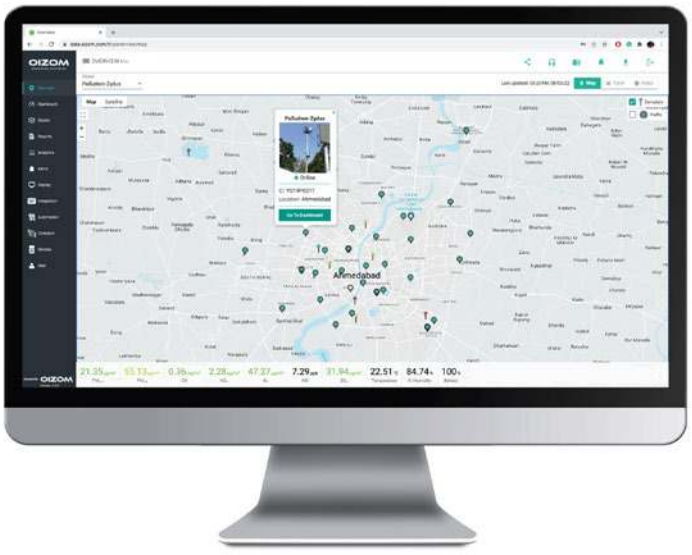
Noise - In every operation including rotary mechanical components

**This is an indicative list.*
Speak to our representative for your exact requirement.

Solution Architecture

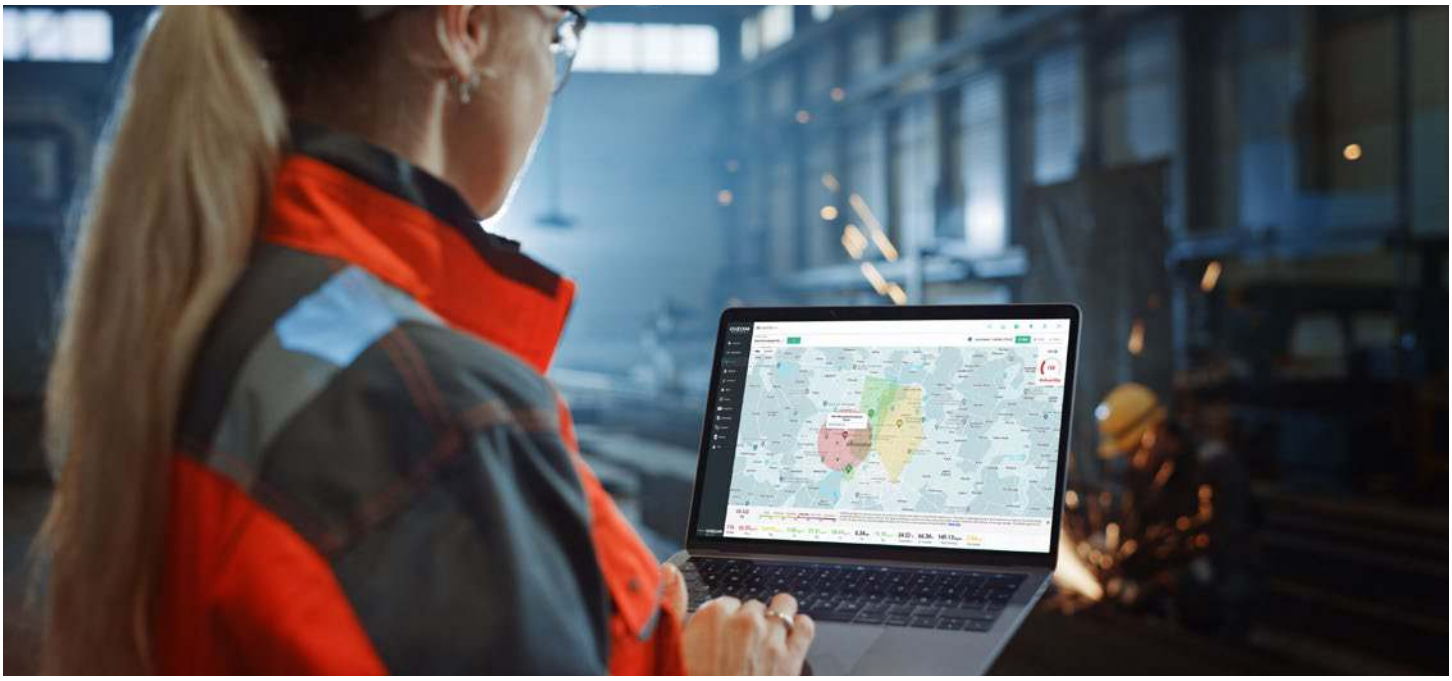


Envizom™ Air Quality Software



An on-device data software enables users to access the data, configure networks and sensors without any dependency on the internet. Users can also connect their smart devices to AQBot and view real-time data, perform on-site calibration, change network configuration, and change sensor configuration.

Envizom™ Features



- Real-time data
- Smart alerts
- User friendly interface
- Easy to Set Up
- One click share
- Data accessibility

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 chlorine gas at a common effluent treatment plant

AQBot™ Cl_2 is used for monitoring chlorine gas at a CETP in Jetpur, India.

India | July 2020 | Wastewater

Detecting and Monitoring CH_2O at Australia

Oizom installed AQBot™ with our partners - Ektimo in Australia to detect and monitor CH_2O (Formaldehyde) in workplaces.

Australia | May 2022 | EHS

Dust Monitoring at Ambuja Cement Factory in India

A cement factory in Raipur district of India opted for Oizom's AQBot™ to monitor dust particles in their factory and take preventive actions.

India | December 2022 | Industrial Fenceline

Case Studies

Dust Monitoring in Coimbatore, India

Oizom installed AQBot™ for monitoring PM in an iron casting company named VR Foundries located in Coimbatore, India.

India | August 2022 | Automation

Dust Monitoring at Manufacturing Company in Hyderabad, India

Oizom installed AQBot™ for PM monitoring in a manufacturing company named Grip Strapping Technologies Pvt Ltd located in Hyderabad.

India | July 2022 | Automation

Monitoring Formaldehyde in a Laminates Facility, India

Samarpan Laminates installed Oizom®'s AQBot™ for monitoring formaldehyde in their manufacturing facility situated in Morbi district of India.

India | May 2022 | Industrial EHS

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, odour, 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®

Odour Monitoring System

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

Dustroid®

Real-time Dust Monitor

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

Weathercom®

Automatic Weather Station

Weathercom® is an automatic weather station designed to measure various meteorological parameters.

OIZOM®
REDEFINING RESOURCES

Trusted by
60+ Countries

Solutions Installed in
65+ Cities

Total Devices Installed
1000+

Total Population Covered
200 million+

Global Presence

ISO 9001:2015 | ISO 14001 | MAKE IN INDIA

Accurate Air Quality Monitoring And Advanced Data Analytics

Get in touch

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