Pollusense

Portable Air Quality Monitor

OIZOM®
REDEFINING RESOURCES

About Pollusense

Pollusense is a Portable Air Quality Monitoring System that measures multiple toxic gases and particulate matter along with noise. The device offers a range of customizable parameters, making it ideal for various applications such as environmental impact assessments, industrial monitoring, environmental audits, mining, indoor air quality assessment, leak detection, construction sites, landfills, livestock management, and research.

Pollusense is a compact and briefcase-sized device that can be carried anywhere to get accurate air quality data. It also has an on-device display that lets users check parameters directly. The data collected by Pollusense can also be accessed through Oizom's Envizom™ environmental monitoring software, enabling comprehensive data visualisation and analytics.

Product Features

In-built display
View data directly on the device without relying on any smart devices.

Compact and lightweight
Lightweight and compact system that can be easily set up and transported.

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

Easy-to-carry
Carry anywhere you go and monitor air quality anytime.

Weather Resistant (IP65)
Durable enclosure designed to withstand extreme weather conditions.

Network Agnostic
Supports a wide range of connectivity options GSM/LTE/WiFi/LoRa/Ethernet/-Satellite.

Alerts and notifications
Receive timely notifications when parameters exceed predefined limits.

Patented Technology
Works on innovative e-breathing technology for higher data accuracy.

Internal Storage
Internal data storage capacity of up to 16 GB or 90 days.

Identity And Configuration
Geo-tagging allows you to get the exact location of the device, consisting of latitude and longitude coordinates.

Long battery life
Monitor the environmental parameters up to 24 hours without worrying about battery life.

Easy-to-set-up
Set up the device in no time and start getting accurate data.

Key Benefits

Quick Sensor stabilisation
Get real-time Gas data within 30 minutes* and Noise and PM data within 5 minutes.

Quick & Seamless Installation
Easily deployable at the surface level or on industrial tripods for real-time monitoring.

Multi-parameter Monitoring
Compatible with a wide range of parameters, including PM, Gases, and Meteorological parameters.

Secure Cloud Platform
Secure platform for visualising and analysing data with easy API integration for immediate action.

Robust and Rugged
Durable enclosure to sustain extreme climatic conditions.

Portable Device
It is easy to carry, transport, and deploy at any location.

Pollusense Usecases

Industries
Comprehensively assess gaseous emissions and the environmental impact of industrial activities to make data-driven measures for minimising their fatal effect.

Environmental Audit
Conduct environmental audits and improve your ESG scores by optimising the environmental health and safety of the citizens.

Wastewater
Monitor odour intensity at wastewater treatment plants to regulate odour emission by appropriate maintenance on time.

Mining
Monitor harmful gas emissions and dust levels during mining activities to protect the working environment and nearby communities.

*30 min - if the device has been turned off for < 24 hours, and 3 hours - if the device has been turned off for long

Pollusense Parameters

Parameter	ID	Range	Resolution	Min. Det.	Working Principle	Expected Sensor Life
Ammonia (NH_3)	OZNH3_4* OZNH3_2* OZNH3_3	0-10 ppm 0-100 ppm 0-1000 ppm	0.02 ppm 0.3 ppm 2 ppm	0.02 ppm 0.3 ppm 2 ppm	Electrochemical	2 Years
Methane (CH_4)	OZCH4_2	50-10,00,000 ppm	1 ppm	500 ppm	Molecular Property Spectrometer (MPS)	2 Years
Hydrogen Sulfide (H_2S)	OZH2S_5* OZH2S_2 OZH2S_3 OZH2S_4	0-10 ppm 0-50 ppm 0-200 ppm 0-2000 ppm	0.01 ppm 0.05 ppm 0.2 ppm 2 ppm	0.01 ppm 0.05 ppm 0.2 ppm 2 ppm	Electrochemical	2 Years
Total Volatile Organic Compounds (VOC)	OZTVOC_1* OZTVOC_2	0-40 ppm 0-200 ppm	0.001 ppm 0.05 ppm	0.005 ppm 0.05 ppm	Photo Ionization Detection (PID)	24 Months #
Particulate Matter ($PM_{2.5}$, PM_{10}, PM_1, PM_{100})	OZPM_1*	Upto 5000 µg/m³ for PM_1, $PM_{2.5}$, PM_{10} Upto 30 mg/m³ for PM_{100}	0.1 µg/m³	1 µg/m³	Optical Particle Counter	18 Months
Noise	OZN_1*	Up to 140 dB	1 dB	0.5 dB	Capacitive	2 Years
Chlorine (Cl_2)	OZCl2_1* OZCl2_2	0-20 ppm 0-50 ppm	0.05 ppm 0.1 ppm	0.05 ppm 0.1 ppm	Electrochemical	2 Years
Hydrogen Chloride (HCl)	OZHCl_1 OZHCl_2	0-50 ppm 0-100 ppm	0.5 ppm 1 ppm	0.5 ppm 1 ppm	Electrochemical	2 Years
Formaldehyde (CH_2O)	OZCH2O_1* OZCH2O_2	0-10 ppm 0-50 ppm	0.05 ppm 0.1 ppm	0.05 ppm 0.1 ppm	Electrochemical	2 Years
Methyl Mercaptan (CH_3SH)	OZCH3SH_1*	0-10 ppm	0.1 ppm	0.1 ppm	Electrochemical	2 Years
Sulfur Dioxide (SO_2)	OZSO2_4* OZSO2_2 OZSO2_3	0-20 ppm 0-100 ppm 0-2000 ppm	0.01 ppm 0.2 ppm 5 ppm	0.01 ppm 0.2 ppm 5 ppm	Electrochemical	2 Years
Nitrogen Dioxide (NO_2)	OZNO2_4* OZNO2_2 OZNO2_3	0-10 ppm 0-100 ppm 0-500 ppm	0.01 ppm 0.2 ppm 0.5 ppm	0.01 ppm 0.2 ppm 0.5 ppm	Electrochemical	1 Year 2 Years 2 Years
Carbon Monoxide (CO)	OZCO_5* OZCO_4 OZCO_2 OZCO_3	0-10 ppm 0-50 ppm 0-100 ppm 0-1000 ppm	0.02 ppm 0.05 ppm 0.1 ppm 0.75 ppm	0.02 ppm 0.05 ppm 0.1 ppm 0.75 ppm	Electrochemical	1 Year 2 Years 2 Years 2 Years
Nitric Oxide (NO)	OZNO_3* OZNO_2	0-10 ppm 0-100 ppm	0.02 ppm 0.5 ppm	0.02 ppm 0.5 ppm	Electrochemical	2 Years
Carbon Dioxide (CO_2)	OZCO2_1*	0-5000 ppm	1 ppm	400 ppm	Non-Dispersive Infrared	2 Years
Oxygen (O_2)	OZO2_1*	(0-25) %VOL	0.1 %VOL	0.1 %VOL	Electrochemical	2 Years
Ozone (O3)	OZO3_2*	(0-8) %VOL	0.01 ppm	0.01 ppm	Electrochemical	1 Year

TVOC Sensor Housing: 24 Months, TVOC Lamp is user replaceable: 5,000 hours

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.

*Indicates standard delivery timeline

Specifications

Technical

Processor	Quad Core ARM Cortex
Memory	2GB RAM / 16GB eMMC ROM
Device Interface	Display / On-device Software / API / Cloud Platform
Internal Data Storage	Up to 16 GB or 90 days

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/LTE) for remote diagnosis, FOTA updates, and cloud calibration

Mechanical

Size	503mm (L) x 406mm (W) x 193mm (H)
Weight	9 kg (Instrument weight)
Material	Waterproof (IPX7), dustproof (IP6X) & MIL-SPEC certified Case
Installation Method	Tripod Mount / Surface Level

Environmental

Operating Temperature	-20 °C to 60 °C
Operating Humidity	0-93% RH
Recommended Temperature	-20 °C to 45 °C
Recommended Humidity	15-90% RH
Storage Conditions	10 - 40°C

Connectivity Options		Specification
Wireless	GSM	Global 2G / 3G / 4G
	LTE	CAT-M1
	Wi Fi	AP Mode and Station Mode
	LoRa	868 MHz / 915 MHz
Wired	ETHERNET	Static / DHCP Configuration

Sensing

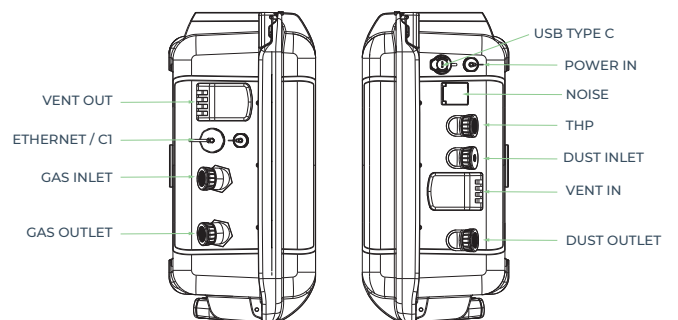|	
Gas sample mode	Active-Sampling
Warm-up time	Upto 30 min* for gas monitoring 15 min for Noise and PM monitoring

Electrical

Avg. Power Consumption	Up to 7 Watts
Power Input Options	AC: 100VAC- 240VAC 50/60Hz DC: 24V, 2A Type C: ≥ 45W PD
Battery	12.8V 12Ah / 153 Wh

VENT OUT
ETHERNET / C1
GAS INLET
GAS OUTLET

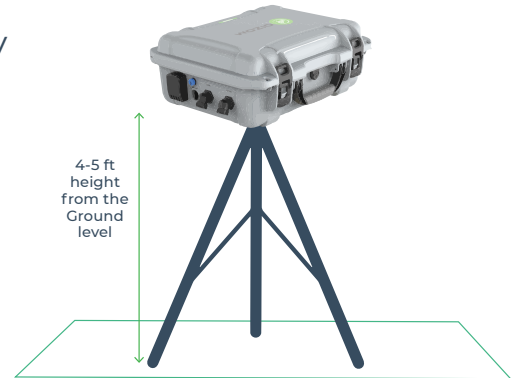USB TYPE C
POWER IN
NOISE
THP
DUST INLET
VENT IN
DUST OUTLET

*30 min - if the device has been turned off for < 24 hours, and 3 hours - if the device has been turned off for long
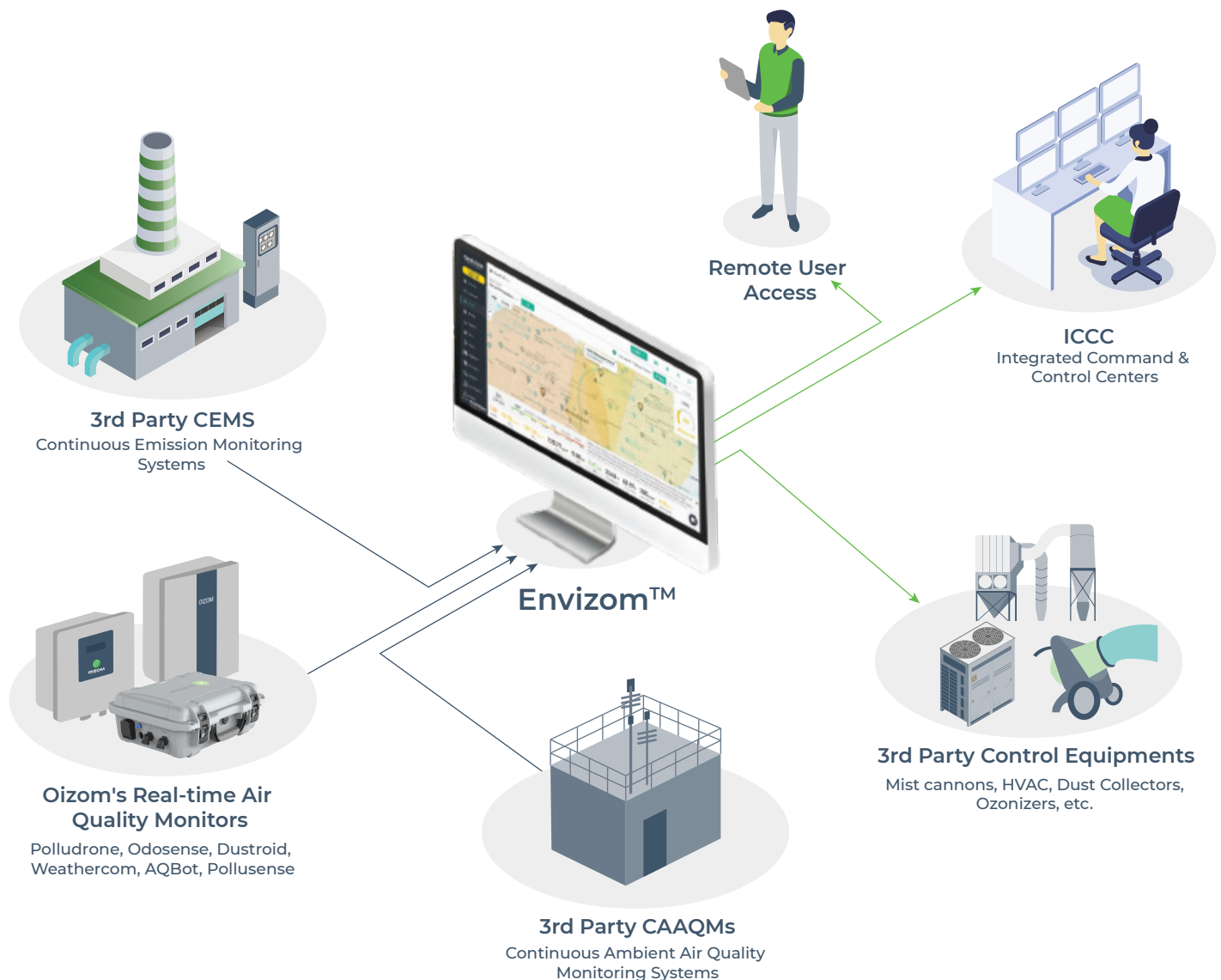
Functional Specifications

Proper location selection is critical for optimised data collection. It varies as per the purpose of the project. According to U.S. EPA QA handbook (Vol II, Section 6.0 Rev.1), the selection of locations should be based on monitoring purposes.

Preferred Mounting	Tripod Mount / Surface Level (preferably 270° open surrounding)
Installation Height	4-5 feet (1.2-1.5 meters)
Direction	As per minimum direct sunlight exposure
Setup	Recommended to setup the device under shade if the temp is above 35°C
Network Availability	Uninterrupted network connection

4-5 ft height from the Ground level

Solution Architecture

3rd Party CEMS
Continuous Emission Monitoring Systems

Oizom's Real-time Air Quality Monitors
Polludrone, Odosense, Dustroid, Weathercom, AQBot, Pollusense

Envizom™

3rd Party CAAQMs
Continuous Ambient Air Quality Monitoring Systems

Remote User Access

ICCC
Integrated Command & Control Centers

3rd Party Control Equipments
Mist cannons, HVAC, Dust Collectors, Ozonizers, etc.

Envizom™
Data Visualisation and Analytics Platform

Envizom™ is an Environmental visualisation and analytics platform for real-time air quality data acquisition. Our Environmental Data Interpretation Engine, powered by Artificial Intelligence & Machine Learning algorithms, provides highly accurate data and actionable insights, empowering users to make well-informed decisions. Envizom™ uses secured HTTPS servers for data storage. Alternatively, this data can also be stored on-premise local servers.

Envizom's dashboard module lets users visualise the device's data in various widgets for easy understanding. With analytics and report modules, users can compare the data and get automated reports of the various air quality parameters.

Envizom™ Capabilities

- **Real-time Data**
- **Easy to Integrate**
- **Smart alerts**
- **Advanced Analytics**
- **Automated Reports**
- **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.

Oizom® Gas Sensor

The Oizom® Gas Sensor (OGS) module is designed to accurately measure low concentrations of various gases at ppb, and ppm levels in the ambient air. The sensor is capable to monitor the point source gases on real-time basis. Each sensor is integrated into a metal casing along with the ultra-low-noise support electronics, which makes it compact and reliable. This allows accurate gas detection even at very low concentrations in the atmosphere.

1. Proprietary gas sensing technology

2. Independent calibration of each sensor

3. Low-noise electronic design

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 U.S. EPA.(Vol II, Section 6.0 Rev.1)

2 Collocation Calibration

Post lab 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.

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 monitoring company that offers accurate air quality monitoring solutions for better decision-making. Using our patented monitoring technology, Oizom's system monitors various environmental parameters related to Air Quality, Noise, Odour, Weather, Radiation, etc. Our data analytics platform derives various actionable insights for authorities, communities, and industries. With smart environmental solutions, Oizom® aims to empower future cities with reliable and accurate environmental monitoring.

Over the past decade, Oizom® has focused on environmental monitoring technology and solutions, and till now, we've deployed 3000+ devices. We are monitoring the environmental health of more than 200 million people worldwide. The solutions we provide are in 65+ major cities worldwide. With a network of partners, Oizom® has expanded its reach and made a strong presence in over 70 countries worldwide.

Other Oizom® Products

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.

Polludrone®
Ambient Air Quality Monitoring

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

AQBot™
Single Parameter Air Quality Monitor

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

OIZOM®
REDEFINING RESOURCES

Trusted by
70+ Countries

Solutions Installed in
65+ Cities

Total Devices Installed
3000+

Total Population Covered
200 million+

Global Presence

MCERTS | NABCB | TÜV INDIA | ISO 9001:2015 | ISO 14001 | MAKE IN INDIA

Changing the way Industries monitor air quality

Get in touch

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