OIZOM®
REDEFINING RESOURCES

Weathercom®

Automatic Weather Station

About Weathercom®

Weathercom® is an Automatic Weather Station (AWS) designed to provide continuous, real-time monitoring of local weather conditions. Unlike traditional stations that often require manual data collection or offer only broad regional data, Weathercom delivers hyper-local meteorological data across a comprehensive range of parameters. It measures key weather metrics including wind speed and direction, rainfall, ambient temperature, humidity, barometric pressure, light intensity, UV radiation, and even parameters like visibility and ambient noise.

Weathercom's real-time data feed enables on-time decision-making for weather-critical operations and early warnings for natural hazards. The system also supports weather data analytics and forecasting through historical trend analysis, helping users predict events and broadcast timely alerts. Weathercom's versatility makes it suitable for a broad range of use cases, such as seaports, coastal infrastructure, urban monitoring, roads, highways, agriculture, forestry, disaster management, and environmental research.

Product Features

Fully Solar Powered
The system works 100% on solar power, making it ideal for off-grid locations.

Weather Resistant (IP 66)
IP 66 Grade (certified) enclosure for endurance against harsh weather conditions.

Retrofit Design
Designed for seamless integration and easy deployment in existing infrastructure.

Over-The-Air Update
Automatically upgradeable from a central server without any onsite visit.

Compact
Lightweight and compact system that can be easily installed on a pole or wall.

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

Tested by IMD
Trusted by leading meteorological organisations/bodies, such as the India Meteorological Department, and following WMO guidelines.

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

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

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

Key Benefits

Robust and Rugged
Durable enclosure to sustain extreme climatic conditions.

Monitor Multi-parameter
Monitor a wide range of meteorological parameters, including wind, rain, temperature, humidity, pressure, Solar radiation, and several more.

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

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

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 Weathercom device can help detect coming 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 according to weather conditions.

Smart City
Pollution monitoring at strategic locations in a smart city enables city authorities to gain actionable insights for effective weather control.

Agriculture
Temperature and rainfall play an important role in crop growth. By monitoring weather and soil conditions, farmers gain valuable insights to manage their crops effectively.

Parameters

Sensors		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
	Direction		0-359°	1°	1°		
	Speed	OZWSD_2	0-80 m/s	0.1 m/s	0.01 m/s		
	Direction		0-359°	1°	1°		
Rain		OZRAIN_1	N.A.	0.25 mm	0.25 mm	Tipping Bucket	
		OZRAIN_2	N.A.	0.10 mm	0.10 mm		
Ambient Noise		OZN_2	Up to 140 dB	1 dB	0.5 dB	Capacitive	
Temperature		OZTEMP_1	-40°C to 125°C	0.01 °C	-40°C	Resistive/Photoacoustic	2 years
Humidity		OZHUM_1	100% Rh	0.10%	0.10%		
Barometric Pressure		OZPRES_1	300-1100 hPa	0.18 Pa	300 hPa		
Pyranometer Solar Radiation 300 - 1100 nm	Light Intensity	OZUV_1	Up to 100,000 Lux	1 Lux	1 Lux	Photoconductivity	2 years
	Visible Light		Upto 5000 Lux	0.1 Lux	0.1 Lux		
	Solar Radiation		0.1-100,000 uW/cm²	0.1 uW/cm²	0.1 uW/cm²		
	UV Index		0-12 Index	-	-		

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.

External Modules

Leaf Sensor

WETNESS
Range : 0-100%
Res. : 0.1%

TEMPERATURE
Range : -40~80°C
Res. : 0.1°C

Working Principle : Capacitance

Vibration Sensors

PPV: +/- 2G
Range frequency: 0.5 - 250 Hz
Range velocity: ±50 mm/s (±2 in/s)
Working Principle: MEMS

Soil Sensor

Measurement Types:
NPK, pH, EC, TEMP, HUM

Vibration, Soil and Leaf sensors are available as optional features upon specific customer requests.

Specifications

Mechanical

Size	360mm (H) x 328mm (W) x 200mm (D)
Weight	8 Kg (instrument weight)
Material	Aluminum Magnesium Alloy, Mild-steel (With Powder Coating), FRP
Certifications	CE, NEMA 4X, IP66, RoHS, PTCRB, FCC, ICASA, GCF

Electrical

Avg. Power Consumption	Up to 7 Watt (Actual consumption will vary 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	Up to 24 Hours
Battery Specs	Lithium iron phosphate (LiFePO4) battery cell with rated voltage 12.8V Capacity

Technical

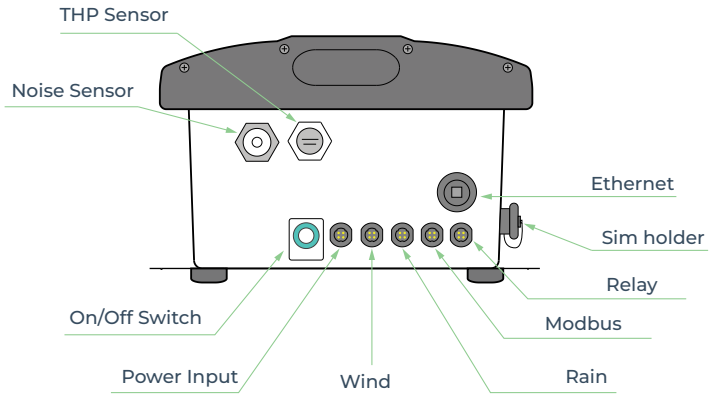
Processor	Quad Core ARM Cortex
Memory	2GB RAM 16 GB eMMC ROM
Device Interface	On-device Software / API / Cloud Platform
Internal Data Storage	Upto 16 GB or 90 days

Environmental

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

Communication

Data Interval	2-30 (configurable) minutes
Data-push Protocol	HTTPS post request to host server
Data-pull	HTTPS 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



	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
	Wi Fi	AP Mode and Station Mode
		Satellite
Wired	ETHERNET	Static / DHCP Configuration
	Modbus	RS485 RTU / TCP
	RELAY	2 Channel Relay Output

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.

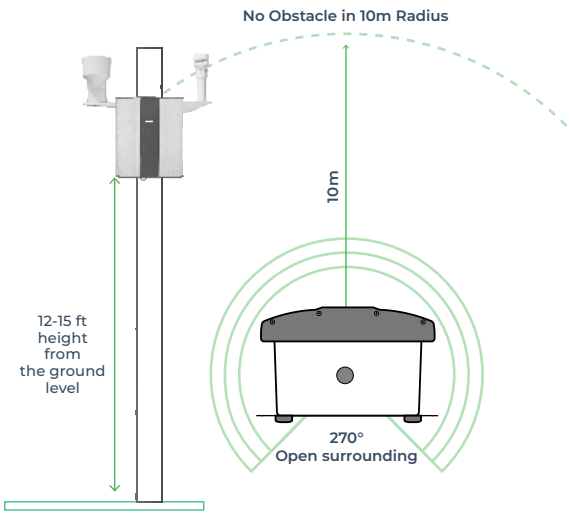
Temperature and Humidity
This sensor should be located 2 m above the surface.

Rain Gauge
It should be placed such that its mouth faces horizontally towards the sky.

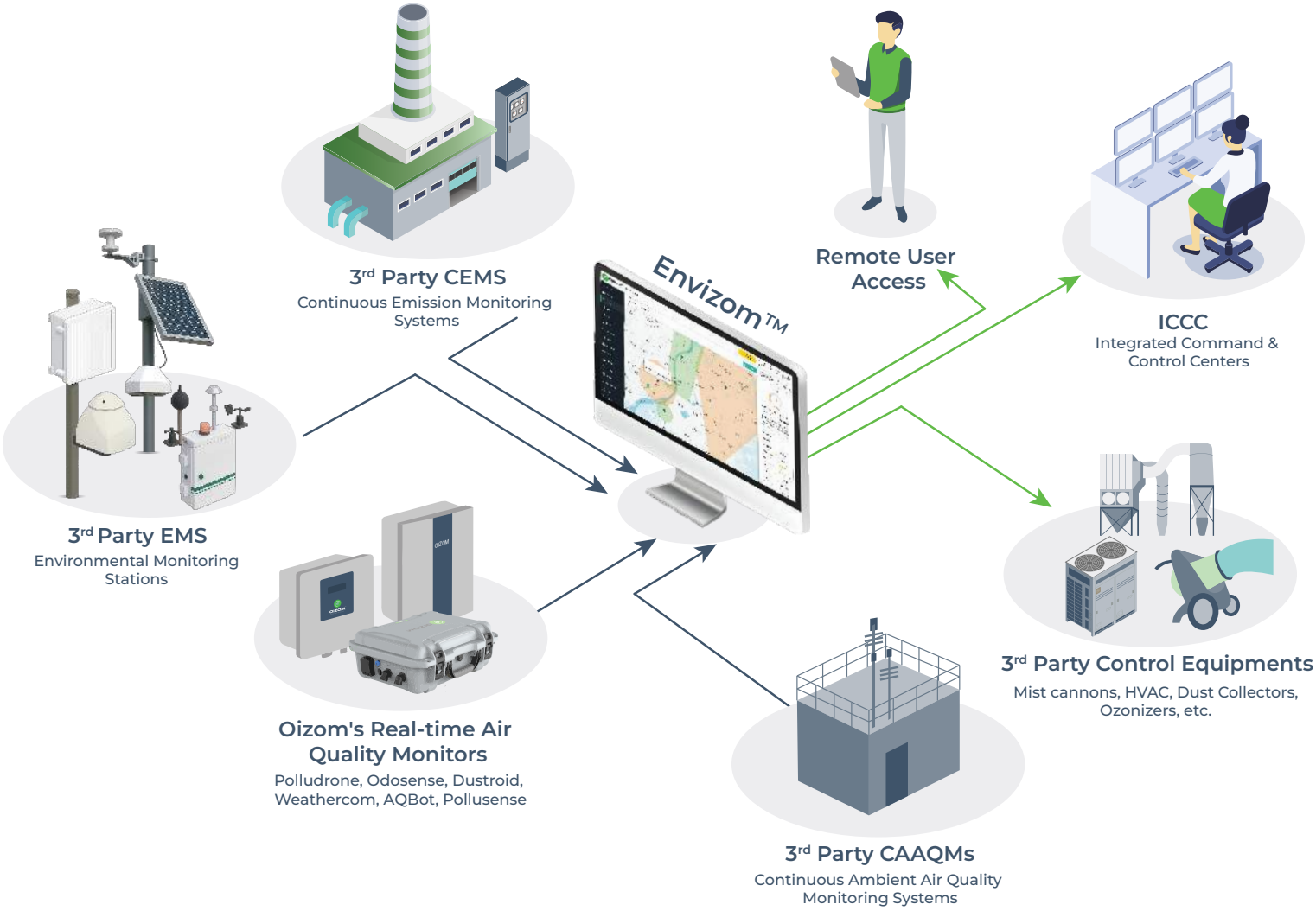
Solar Radiation
Pyranometer should be placed such that it has unrestricted incoming radiations from all directions.

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



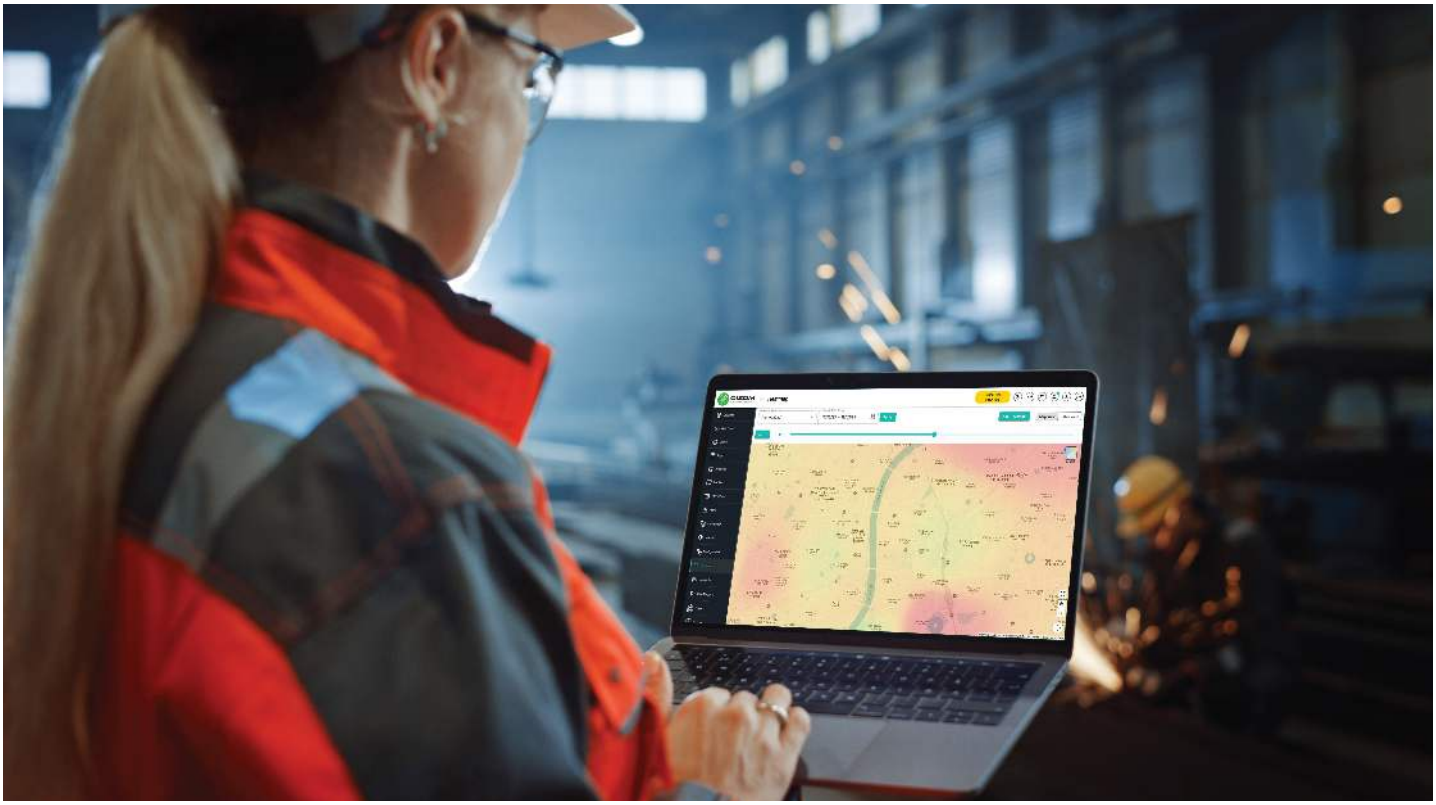
Envizom™

Data Visualisation and Analytics Platform

Envizom™ is Oizom's Environmental visualisation & analytics platform, built to turn complex air quality data into actionable insights. Providing remote visibility & control, it consolidates data from multiple sites, parameters, & devices into a single, intuitive dashboard. Our Environmental Data Interpretation Engine, powered by Artificial Intelligence & Machine Learning algorithms, provides accurate, real-time data, helps identify pollution sources, & understands directional trends. From city-wide comparisons to site-specific trends, smart multi-dimensional analytics enable comparisons across locations, parameters, & time spans. Envizom™ uses secure servers for data storage and on-premise storage is also supported.

On the Envizom™ platform, you can view wind and weather data through wind rose charts, which represent wind speed and direction over a specific period at a particular location. It also offers weather prediction using historical data, enabling users to plan activities proactively and take preventive measures.

Envizom™ Capabilities



- Wind Rose Chart
- Smart Alerts
- Automated Reports
- Easy to Integrate APIs
- Advanced Analytics
- AI-based Forecasting

Privacy First Platform

Data Privacy

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

Data Ownership

Envizom™ creates a secure 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.

SANS | OWASP | IEC 62443-4-1 | Security Tested | 100w Cybersecurity Practices | TCM SECURITY

Case Studies

The Liana Trust Utilizes Oizom's Weathercom® to Study Reptile Behavior

Oizom's Weathercom® has been installed by The Liana Trust to collect accurate weather data, aiding their research on reptile behavior and helping raise environmental awareness among local communities.

India | Weathercom | Research

Monitoring Weather at Adani Dighi Port, Maharashtra

Adani Dighi Port uses Oizom's Weathercom® for continuous weather monitoring, enabling better planning and operations by providing real-time environmental data at the port.

India | Weathercom | Seaport

Case Studies

Adani Solar Boosts Solar Plant Performance with Oizom's Weathercom®

To maximize energy output and ensure predictive maintenance, Adani Solar installed Oizom's Weathercom®. The system provides real-time weather insights for optimizing solar plant performance and operational planning.

India | Weathercom | Energy Generation

Weathercom® was Installed at the Advanced Institute of Wildlife Conservation to Study Biodiversity

The Advanced Institute of Wildlife Conservation uses Oizom's Weathercom® to analyze how weather patterns affect biodiversity. The system supports ecological research and helps develop effective conservation strategies.

India | Weathercom | Wildlife Conservation

Case Studies

Flood and Weather Monitoring in Colombia with Oizom's Weathercom®

Oizom's Weathercom® has been deployed in Colombia to monitor rainfall and flood conditions. The system provides early warnings to protect communities and improve disaster preparedness.

Colombia | Weathercom | Smart City

Portlinks India Improves Operationa Efficiency with Oizom's Weathercom®

Portlinks India installed Oizom's Weathercom® to gain real-time weather insights, enhancing logistics and operational efficiency while minimizing the impact of weather-related disruptions.

India | Weathercom | Seaport

About Oizom®

Leader in sensor based air quality monitoring

Monitors designed for easy and quick setup

Low powered solutions for multiple applications

Oizom® is an environmental company that offers accurate air quality monitoring solutions designed to deliver air quality insights for better decision-making. Using our patented e-breathing technology, we measure key environmental parameters including air quality, noise, odour, weather, radiation, etc. Our AI-enabled data analytics platform can derive various actionable insights and predict data for authorities, communities, and industries.

With a strong focus on data accuracy and reliability, our devices are powered by advanced technology and smart algorithms. From fixed installations to portable monitors, Oizom® offers scalable solutions that fit a wide range of applications, including construction, mining, industrial safety, smart infrastructure, and environmental compliance. Over the past decade, Oizom® has deployed over 3,500 environmental monitoring devices across 90+ major cities, helping track the environmental health of over 250 million people through a strong partner network in 80+ countries.

Other Oizom® Products

Dustroid®
Real-time Dust Monitor

Dustroid® is an online particulate monitoring system to measure various particulate matter sizes.

AQBot™
Single Parameter Air Quality Monitor

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

Polludrone®
Ambient Air Quality Monitoring

Polludrone® is an ambient air quality monitor that measures particulate matter, gases, and weather parameters.

Odosense®
Odour Monitoring System

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

Pollusense™
Portable Air Quality Monitor

Pollusense™ is a portable air quality monitor that measures multiple toxic gases and particulates.

OIZOM®
REDEFINING RESOURCES

Trusted by
80+ Countries

Solutions Installed in
90+ Cities

Total Devices Installed
3500+

Total Population Covered
250 million+

Oizom Customers

South African Weather Service
KERALA State Pollution Control Board
JSW Steel
LLOYDS METALS
adani Ports and Logistics
Gujarat State Petronet Ltd.
DFE pharma

Changing the way Industries monitor air quality

Get in touch

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