





## Technical Specification

Processor	Quad Core ARM Cortex
Memory	2GB RAM / 8GB eMMC ROM
Device Interface	On-device Software / API
Operating Temperature	-20 °C to 60 °C
Operating Humidity	0-95% RH

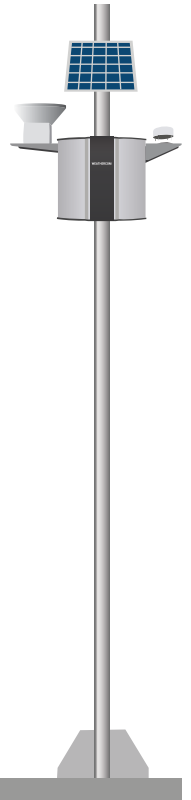
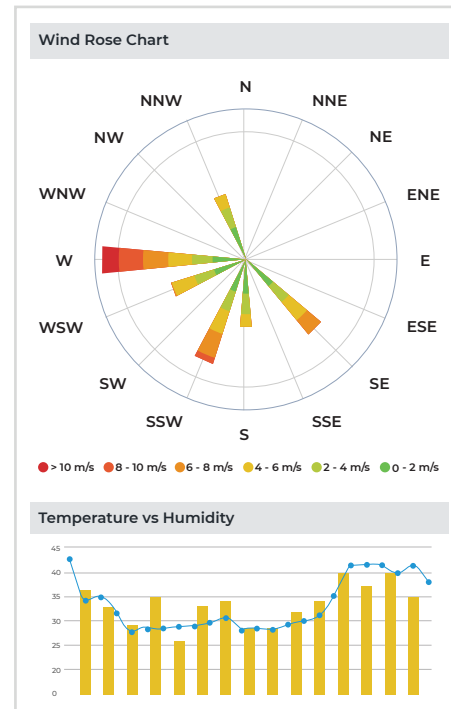
Connectivity Options		Specification
Wireless	GSM	Global 2G / 3G / 4G
	LORA	868 MHz / 915 MHz
	LTE	CAT-M1
	NB-Iot	CAT-NB1
	Sigfox	868 to 869 MHz, 902 to 928 MHz
	Wifi	AP Mode and Station Mode
Wired	Ethernet	Static / DHCP Configuration
	Modbus	RS485 RTU / TCP
	Relay Output	2 Channel

## Communication

Data Interval	2-30 minutes (configurable)
Data-push Protocol	HTTP post request to host-server
Data-pull	HTTP request on device IP
Firmware Updates	Over the Air
Standby Connectivity	GSM (2G/3G) for remote diagnosis, FOTA updates and cloud calibration

## Power

Avg. Power Consumption	5 Watt (Actual consumption depends upon the number of parameters)
Power Input Options	External 110-230V AC 50-60Hz, 40Watt Monocrystal Solar Panel
SMPS Specs	24V, 2Amps output UL-62368 & CAN/CSA C22.2 Certified
Battery Backup Time	12 Hours
Battery Specs	Lithium iron phosphate (LiFePO4) battery cell with rated voltage 12.8V Capacity 6Ah



## Parameters

ID	Parameter	Range	Resolution	Min. Detection	Working Principle	Expected Sensor Life
Ws	Wind Speed	0-40 m/s	0.1 m/s	0.1 m/s	Ultrasonic	3 years
Wd	Wind Direction	0-359°	1°	1°		
Fl	Flood Monitoring	Upto 765 cm	1 cm	1 cm	Tipping Bucket	
Rm	Rainfall Monitoring	N.A.	0.5 mm	0.5 mm	Capacitance	
Noise	Ambient Noise	Up to 140 dB	1 dB	30 dB		
Li	Light Intensity	Up to 1,00,000 Lux	1 Lux	1 Lux	Photoconductivity	
UV	UV Radiation	0.1-100,000 uW/cm <sup>2</sup>	0.1 uW/cm <sup>2</sup>	0.1 uW/cm <sup>2</sup>		
Lv	Visible Light Intensity	Upto 5000 Lux	0.1 Lux	0.1 Lux		
Temp	Temperature	-40 °C to +125 °C	0.01 °C	-40 °C	Solid State Semiconductor Sensing	
Hum	Humidity	Up to 100% Rh	0.10%	0.10%		
Bmp	Barometric Pressure	300-1100 hPa	0.18 Pa	300 hPa		

## External Modules

(optional) 1



Flood Sensor

Ultrasonic sensor

2



Soil Moisture Sensor

Capacitive Sensing

3



Noise Sensor

Capacitance

## Functional Specification

### 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 & Direction:** Wind sensor should be at least 10 m above the surface to avoid hindrance by buildings.

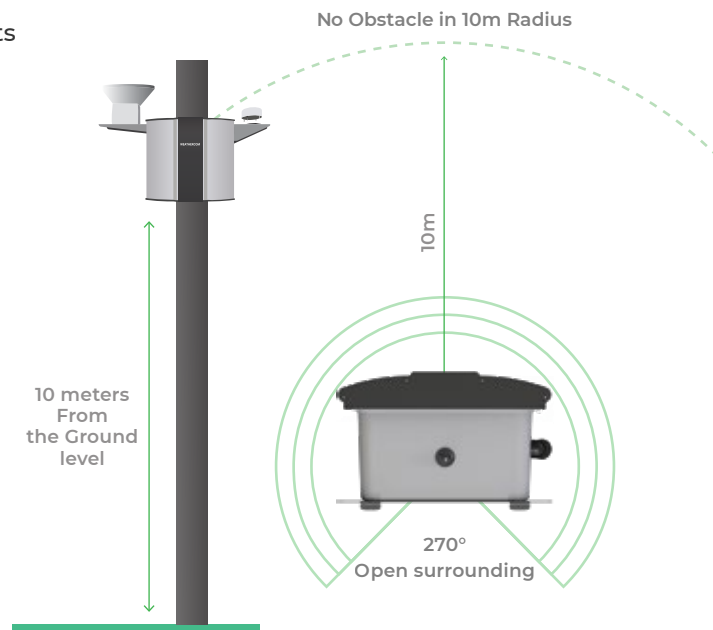
**Temperature & Humidity:** This sensor should be located 2 m above the surface.

**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	Equipment : 2 meters Wind Sensor : 10 meters
Direction	As per maximum direct sunlight exposure (if ambient-light monitoring is a preference)
Power Availability	Constant AC supply within a 2-meter range from the unit or solar panel
Network Availability	Uninterrupted network connection



### Operation:

Weathercom uses different measurement principle for each parameter.

**Wind Speed & Direction:** It is measured as the time taken by an ultrasound to travel through the wind.

**Temperature, Humidity & Pressure:** These parameters are measured by a proportional change in the corresponding resistance within the sensor.

**Rainfall:** Rainwater monitoring gauge consists of a tilted tipping bucket mechanism. The bucket has a capacity of each tip 0.01" ~ 0.25mm, beyond which it tilts.

**Solar Radiation:** Radiation is measured by converting sunlight received into electric energy by the semiconductors.

### Maintenance:



**Spot-Calibration:** The frequency of calibration is decided based on the atmospheric conditions and individual sensor drift (mentioned in the parameter table) to ensure data accuracy. Spot calibration can be performed using reference equipment which can be a recently calibrated Oizom device.



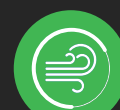
**Diagnosis/Debugging:** Power and network availability are the prime check in case of equipment failure. If the issue is still unresolved after remote diagnosis, on-site troubleshooting can be planned by an engineer.



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