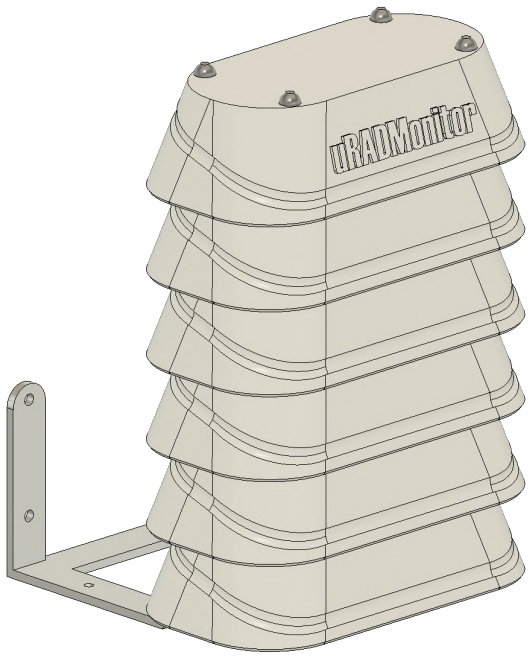
uRADMonitor® CITY
Environmental Monitoring

Temperature, relative humidity, barometric pressure, Particulates PM1, PM2.5, PM10, ozone O3, carbon monoxide CO, nitrogen dioxide NO2, sulfur dioxide SO (*) with 1PPB resolution

(*) optional electrochemical cell for H2S / Hydrogen sulphide, for a total of 4 active cells installed



Hardware version 5

Characteristics

- 8 high-quality digital sensors that monitor 10 air quality parameters
- Built-in GPS module for real location
- Multiple connectivity options including GSM, WiFi, LoRaWAN, NB-IOT, Ethernet
- Stevenson ASA housing for outdoor use
- Built-in speaker for notifications
- Direct and cloud access to data via API
- USB port for power, data access, debugging and configuration
- Optional: internal battery and SDCARD

Applications

- Ambient air monitoring / in cities
- Monitoring offices and production spaces
- Smart cities
- IOT / Internet of Things

Description

uRADMonitor® CITY is a fixed automatic monitoring station that tracks a total of 10 important air quality parameters. It follows the international requirements for the determination of the air quality index. It has been specifically designed to meet low concentration levels in ambient air. It is therefore intended for monitoring the ambient air in homes, offices or cities. Comes in a Stevenson housing made of UV resistant ASA plastic for direct outdoor use. The data is exported to the uRADMonitor® network and can be accessed in real time using the cloud API or directly over the local network.
Using the available connectivity options and low power consumption, this device can be deployed for a wide variety of field applications. Its versatility is combined with convenient cloud-based data access with an API to access measurements directly from the uRADMonitor cloud.

Sensors

The device uses a high-quality laser scattering sensor to measure the concentration of PM1.0, PM2.5 and PM10 particles in the air. Four additional sensitive electrochemical sensors measure trace levels of carbon monoxide, sulfur dioxide, nitrogen dioxide and ozone in the air. A built-in fan ensures active air flow through the sensing elements. Three MEMS sensors redundantly read ambient temperature, barometric pressure and humidity.

SENSOR	PARAMETER	MIN	MAX	RESOLUTION	ACCURACY	INTERVAL[1]	LIFESPAN[2]
MEMS	Temperature	-40 °C	+85 °C	0.5 °C	± 1°C	-40..+100°C	5 years
	Humidity	0% RH	100% RH	1% RH	± 2%		
	Baromertric Pressure	300 hPa	1100 hPa	1 Pa	± 0.25%		
Laser scaterring	PM1	0 µg/m³	1000 µg/m³	1 µg/m³	±1%	-40..+85°C	5 years
	PM2.5	0 µg/m³	1000 µg/m³	1 µg/m³	±1%		
	PM10	0 µg/m³	1000 µg/m³	1 µg/m³	±1%		
Electrochemical	Ozone	0 ppm	1 ppm	1 ppb	± 1.5%	-20..+50°C	2 years [3]
Electrochemical	Nitrogen Dioxide	0 ppm	1 ppm	1 ppb	± 1.5%	-20..+50°C	2 years [3]
Electrochemical	Sulphur Dioxide	0 ppm	1 ppm	1 ppb	± 1.5%	-20..+50°C	2 years [3]
Electrochemical	Carbon Monoxide	0 ppm	10 ppm	1 ppb	± 1.5%	-20..+50°C	2 years [3]

(1) Using the sensor outside the recommended temperature range may shorten its life
(2) Estimated for normal conditions of use. Device maintenance is recommended after the shortest sensor lifetime (2 years).
(3) Operating time until the original signal decays by 50%.

Specifications

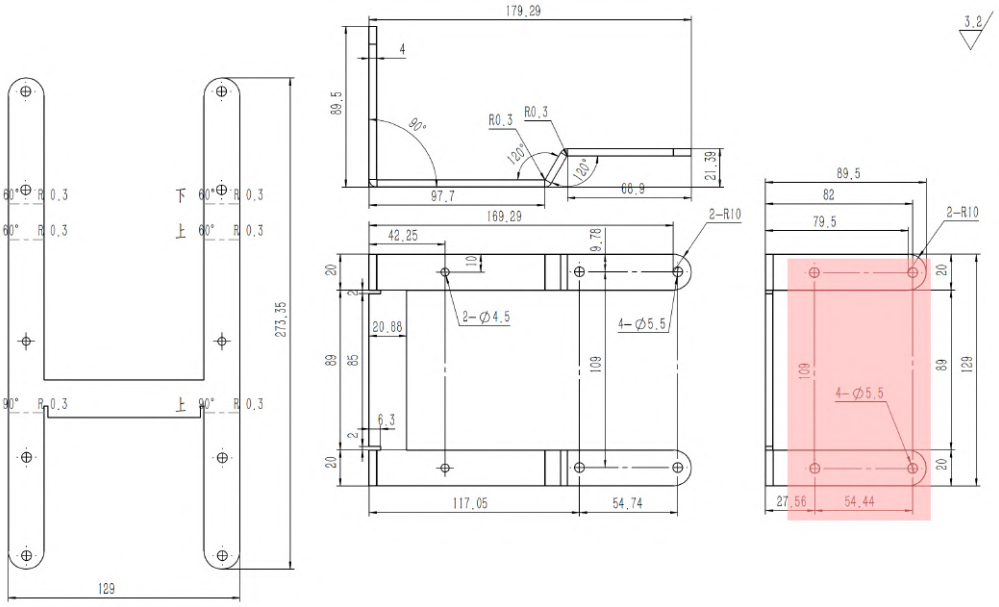
	uRADMonitor® CITY
Power supply	5V micro USB and / or 6 - 50V DC (Passive POE supported)
GPS	yes
SDCARD / battery / mobile use	optional
Enclosure protection	Stevenson ASA plastic housing, resistant to UV, rain, snow ready for outdoor installation
Dimensions	25x20x10cm, excl. support
Mass	1.25 kg, excl. support
Recommended use	Temperature: -20°C to +65°C Humidity: 0RH to 95RH
Mounting support	INOX A3 stainless steel support for wall or post mounting

Usage conditions

- **Power:** Be careful when connecting the unit to the power source
- **Outdoor use and exposure to the elements:** Thanks to its protective outer casing, uRADMonitor® CITY can be used outdoors without any additional protection.
- **Precautions:** Do not expose the device to a large amount of dust, such as in woodworking centers. Do not expose the device to solvents or a large amount of concentrated chemical vapors (acetone, paints, alcohol, butane, propane, etc.), as the sensors may wear out or the measurements may become inconclusive.

Installing the unit

- For mounting, use the holes in the steel bracket, marked in red below. Be sure to properly connect the power cord and, if applicable, the network cord, and secure it against vibration where necessary. If your device comes with RADIO connectivity, connect the antenna the first time.



Warranty

uRADMonitor® Model CITY is covered by a 12-month warranty against any defects in material or workmanship under normal use.

Calibration of sensors

The sensors used in uRADMonitor® CITY, especially those for determining gas concentration, offer measurements at a resolution of 1PPB, a value that is difficult to match with other products on the market. This performance is the result of an extremely careful electronic design, where the useful signal is differentiated from the noise level by innovative methods.

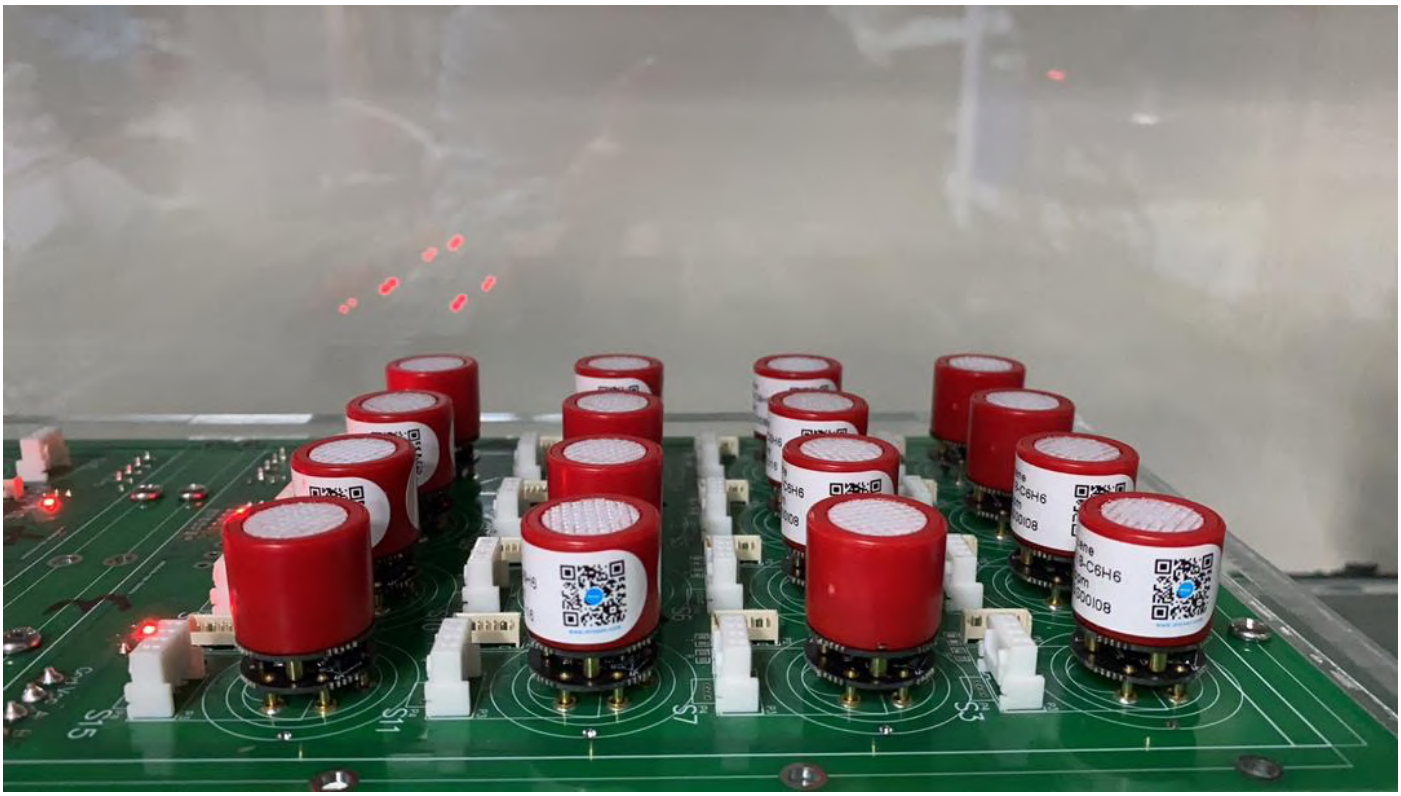


Image: Individual testing of electrochemical cells, illustrative photo

As these aspects are extremely sensitive, each gas cell is individually tested in the laboratory to ensure final performance of the uRADMonitor® CITY devices and an operator-endorsed laboratory test sheet is issued. Thus our sensors will be able to measure with very good accuracy the smallest variations of the tracked gases.

Certification of uRADMonitor CITY sensors

Data accuracy has been one of the priorities of uRADMonitor® since the beginning. We have made every effort to certify and verify the accuracy of our devices in specialized laboratories. uRADMonitor® CITY has benefited from the following laboratory tests:

- AIRPARIF AIRLAB 2021, France, hardware version 1
- AIRPARIF AIRLAB 2023, France, hardware version 4

More details at https://www.uradmonitor.com/uradmonitor-is-winner-at-paris-airlab-challenge-2023/

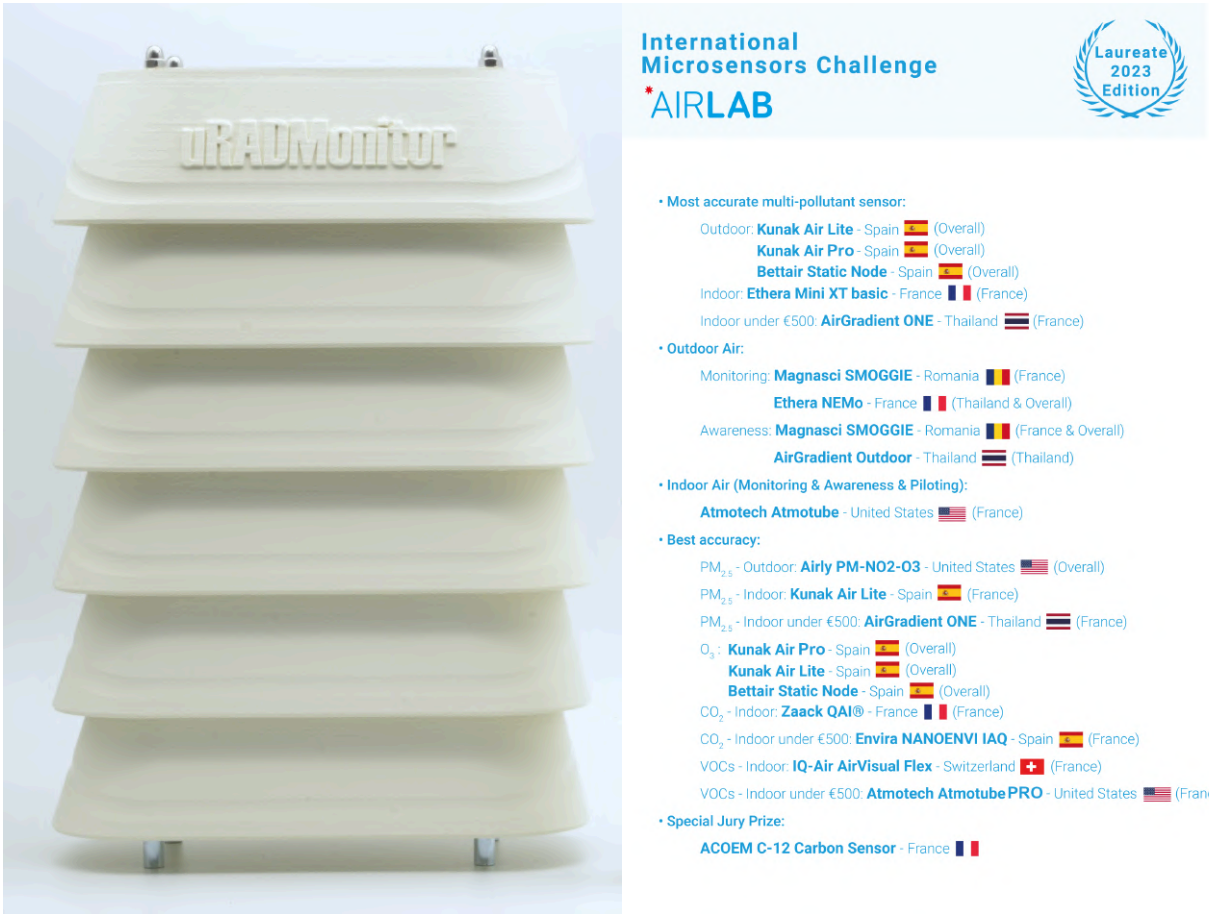


Image: uRADMonitor took 2 prizes at the sensor competition organized by AIRPARIF France in 2023

Critical Applications Disclaimer

uRADMonitor sensors are designed to operate in a wide range of harsh environments and conditions. However, it is important to avoid exposure to high concentrations of solvents during storage, installation and operation. Due to the nature of the technology used, any sensor may fail to meet specifications without prior warning. We have made every effort to ensure the reliability of all our sensors, but where life safety is an application performance requirement, and where practical, we recommend that all gas sensors and instruments using sensors are properly verified prior to use. In all cases of critical applications, such as those where life safety is a system performance requirement, we recommend providing redundancy in the sensor side, power side, and Internet connectivity side. Magnasci SRL does not assume responsibility for direct or indirect damages resulting from the use of uRADMonitor® products.

More information

Visit www.uradmonitor.com or contact us at support@uradmonitor.com for questions or additional information.

Magnasci SRL

The Magnasci SRL company was founded in 2015 in Timișoara and managed to gain international recognition with uRADMonitor®, a complex product that quickly became the first global environmental monitoring network, present at planetary scale . All key development steps were implemented locally, from electronics design, prototyping, hardware software development, server software, security, large database architecture, server backend and user interface.

SAN FRANCISCO
Finalist
Hackaday Prize
2015

ARAD
First prize at
Regional
Innovation Fair
2015

BUCUREȘTI
Winner at
Innovation Labs
2016

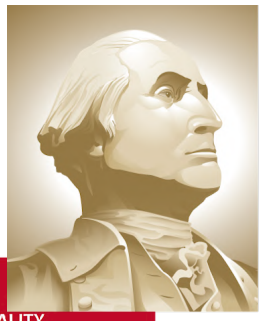
2017
CROWDFUNDING
2 campaigns
IndieGogo for
over 100,000 $

GLOBAL SPREAD
Over 3500
uRADMonitor
sensors installed
on the planet.
2020

AIRLAB **2021** 2023
France
uRADMonitor
technology
receives two
awards

"Excellence in
Innovation
Award" **2022**
from Orange

In the more than 8 years of its existence, the company has developed several types of sensors that are now present in more than 60 countries, being used by universities, research institutes and municipalities.



THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, DC

Thank you for trusting us and using the **uRADMonitor®** systems, an innovative technology #madeinro .