

# Nanoenvi IAQ LoRa

1.3.1

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# Chapter 1. REVISION CONTROL

Revision	Changes
V1.2.1	First version
V1.2.3	Noise sensor specifications added
V1.3.2	Minor fixes and product information added

# Chapter 2. PRODUCT DESCRIPTION

## 2.1. Description








### 2.1.1. Air quality measurements to improve people’s lives



Nanoenvi™ IAQ is a device designed and manufactured by Envira Sostenible S.A. so that building managers and owners can make decisions to improve the comfort, well-being and health of people based on real air quality data. Nanoenvi™ IAQ lets you set up wireless networks of indoor air quality sensors to provide real-time information about the air we breathe. Nanoenvi™ IAQ is suitable for use in homes, workplaces, classrooms, hospitals, conference rooms, garages, laboratories, cinemas, theatres, vehicles and any other indoor space where people spend their time.

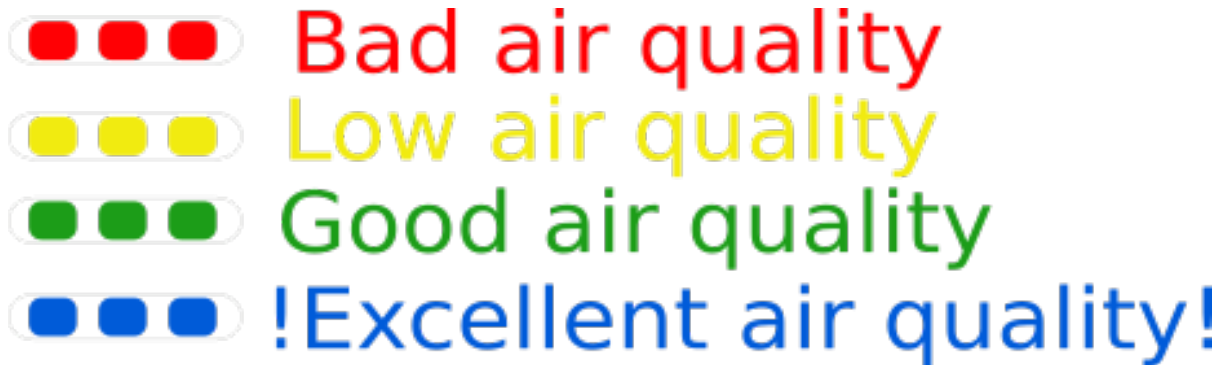
### 2.1.2. Measure up to 10 variables with just one device

Nanoenvi™ IAQ is capable of measuring temperature, humidity, atmospheric pressure and concentration of CO<sub>2</sub>, CO (optional), noise level (optional), VOCs, PM1, PM2.5, PM4 and PM10.

			
PM1, PM2.5, PM4 and PM10	carbon monoxide	carbon dioxide	volatile organic compounds
			
relative humidity	ambient pressure	temperature	

### 2.1.3. Air quality traffic light

The lights on the Nanoenvi™ IAQ change colour depending on the air quality. This allows people to see air quality immediately and to ensure appropriate and efficient ventilation.



### 2.1.4. Quick installation

Nanoenvi™ IAQ is designed for quick and easy installation.

By means of its USB port, the device can be configured before it is installed. The configuration can be changed remotely via downlink messages.

Once installed, Nanoenvi™ IAQ will measure air quality continuously and will automatically manage reconnection if there is a communication network or power failure.

### 2.1.5. Zero maintenance

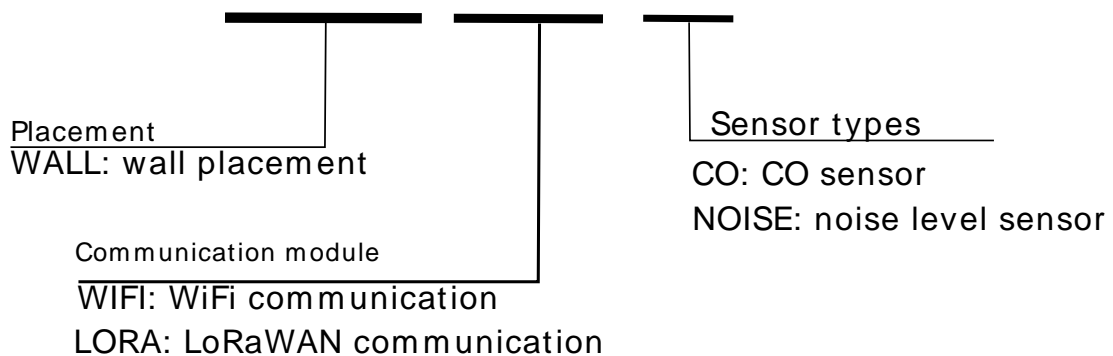
Nanoenvi™ IAQ requires no specific maintenance. Additionally, it implements configuration messages that allow you to see the status of the device, perform software updates and change the configuration remotely. In this way, building managers or integrators can manage the devices installed without having to travel or incur additional costs.

### 2.1.6. Accuracy and reliability

Nanoenvi™ IAQ includes the latest indoor air quality measurement technology. In order to achieve this, Envira Sostenible S.A. trusts and relies on European manufacturers that offer state-of-the-art technology, with the highest quality standards.

## 2.2. Product reference

**NE\_IAQ\_WALL\_WIFI\_CO**



### 2.3. Content of the package

The Nanoenvi™ IAQ box purchased includes:





1. Nanoenvi™ IAQ.
2. Power supply with power adapter and plug adapters:
  - Type G (UK)
  - Type B (USA)
  - Type C (Europa)
  - Type I (Australia)
3. Packaging.
4. Wall bracket.

## 2.4. Product overview

Figure 2.1. Front view of the Nanoenvi™ IAQ with wall bracket

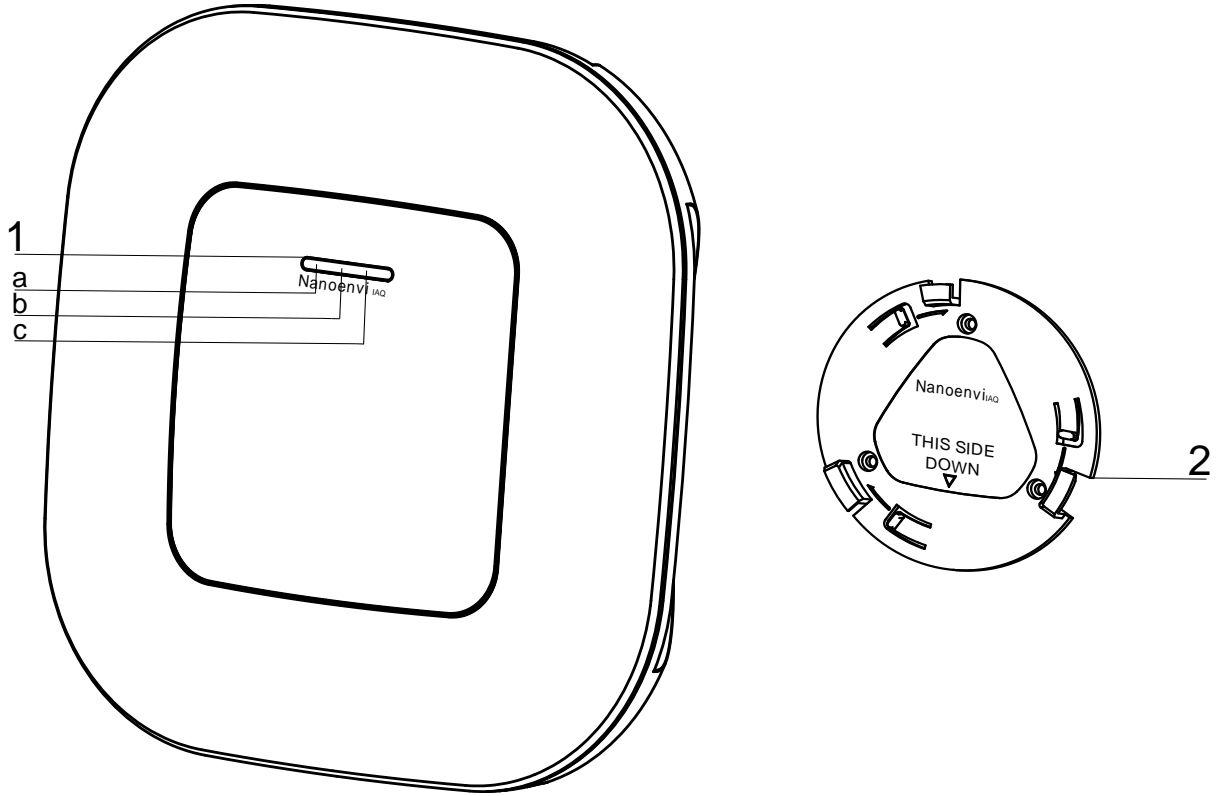
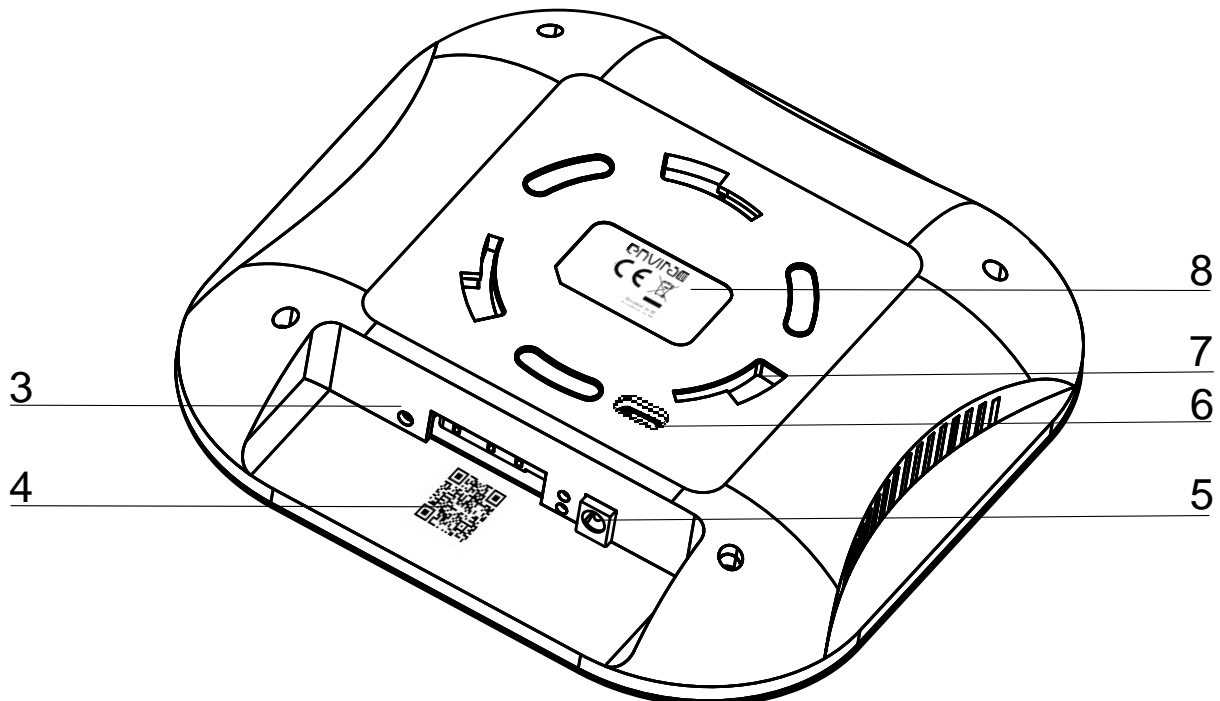


Figure 2.2. Back view of the Nanoenvi™ IAQ





1. LED status lights:
  - a. LED1
  - b. LED2
  - c. LED3
2. Wall fastening.
3. Configuration mode button (also referred to as 'AP mode button'). Not used in the LORA variant.
4. QR code for automatic onboarding of LoRaWAN.
5. Power connector.
6. USB-C connector, used to configure and update the device's firmware.
7. Wall bracket
8. CE marking.

# Chapter 3. Technical specifications

## 3.1. General specifications

**Table 3.1. General specifications**

Parameter	Value
Supply	Input: 100-240V AC @ 50-60 Hz (power supply included). Output: 5 V DC External power adapter
Maximum consumption	5 W
Average consumption	2,5 W
Working conditions	10 ~ 55 ° C / 5 ~ 90 % RH (no condensation)
Storage conditions	10 ~ 55 ° C / 5 ~ 90 % RH (no condensation)
IP protection	IP21
Sensors	CO (optional), CO2, atmospheric pressure, VOCs, PM1, PM2.5, PM4, PM10, temperature, humidity and noise (optional)
Weight of package	800 g
Weight of device	340 g
Dimensions	189x189x37 mm
Conformity marking	
Made in	

## 3.2. Especificaciones de sensores

### 3.2.1. CO sensor technical characteristics

Accuracy	± 5%
Measurement range	0 ~ 5000 ppm
Operational range	-10 ~50 °C, 10 ~95 % RH
Calibration	Initial laboratory calibration
Response time	60 seconds

Technology	Electrochemical
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### 3.2.2. CO2 sensor technical characteristics

Accuracy	± 30 ppm
Measurement range	400 ~ 10000 ppm
Operational range	0 ~50 °C, 0 ~95% RH
Calibration	Self-calibrating
Response time	20 s (63 %)
Technology	NDIR

### 3.2.3. PM sensor specification

Accuracy for PM1 and PM2.5	±10 µg/m3 for measurements in range from 0 to 100 µg/m3 and ±10 % for measurements in range from 100 to 1000 µg/m3
Accuracy for PM4 and PM10	±25 µg/m3 for measurements between 0 and 100 µg/m3 and ±25% for measurements between 100 and 1000 µg/m3
Measurement range	0 ~1000 µg/m3
Operational range	-10 ~ 60 °C y 0 ~ 95 % RH
Calibration	Initial factory calibration
Response time	1 s

### 3.2.4. Pressure sensor technical characteristics

Accuracy	±10 hPa
Measurement range	500 hPa to 1150 hPa
Operational range	-40 a 105 °C
Calibration	Factory calibrated
Response time	N/A

### 3.2.5. Temperature sensor specification

Accuracy	± 1 ° C
Measurement range	0 ~65 °C

Operational range	0 ~100 % RH/ -20 ~ 85 °C
Calibration	Not required
Response time	8 s

### 3.2.6. Relative humidity sensor technical characteristics

Accuracy	±5 % RH
Measurement range	10 ~95 % RH
Operational range	0 ~100 % RH/ -20 ~ 85 °C
Calibration	Not required
Response time	8 s

### 3.2.7. VOC sensor technical characteristics

Accuracy	30% on value measured
Measurement range	0 ~ 60000 ppb
Operational range	5 ~90 % RH/ 5 ~55 °C
Calibration	Autocalibration
Response time	< 30 s
Technology	Metal oxide

### 3.2.8. Noise level sensor technical characteristics

Accuracy	Not characterized, qualitative measurement
Measurement range	0 ~ 100 % of noise level
Operational range	0 ~ 95 % RH/ 0 ~ 60 °C
Calibration	Factory calibrated
Frequency measured	20 - 20000 Hz

## 3.3. Communications characteristics

### 3.3.1. LoRaWAN communication

LoRaWAN version	1.0.4
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LoRaWAN communication	OTAA
Device type	Class A
Scope	Depends on distance to gateway and/or obstacles present
Maximum transmission power	14dBm
Maximum sensitivity reception	-137 dBm
LoRaWAN region supported	EU868
Data rate	Fixed, (ADR not supported) DR3 (SF9)
Data sending period	70 seconds
Configuration	USB-C or LoRaWAN downlink messages

# Chapter 4. Contact

## 4.1. Contact information

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