

Senseair Aercast

Battery powered and wireless IAQ Monitor

Senseair Aercast is an advanced and versatile 4-in-1 IAQ monitor. It measures CO₂ concentration, temperature, humidity and barometric pressure in the ambient air accurately without need for additional compensation – true read. The measured parameters are conveniently combined into one common indicator – the Senseair Index – describing how your performance is affected by the ambient air. Research shows that the air around us significantly affects our health and performance. Aercast puts you in control of the surrounding environment and secures your top performance.

Thanks to the ultra-low power sensor, the Aercast is possible to run on batteries for at least 2 years, depending on the actual configuration.

The measured data is shown on a high resolution display and the overall indoor air quality is intuitively indicated by the stylish LED elements. The data is wirelessly transmitted using an open protocol and can be viewed using a laptop dashboard or a smart phone app.

Senseair Aercast is provided as a white-label product that could be branded with your own logotype. The product complies with ASHRAE standard 189.1 (± 50 ppm @ 1000ppm of measured CO₂ value)



Standard specification

Measured gas	Carbon dioxide (CO ₂)
Operating principle	Non-dispersive infrared (NDIR)
Measurement range	
CO ₂	400–5000ppm
Temperature	0–50°C
Relative Humidity	0–100%RH
VOC (optional)	0–500IAQ
Accuracy (CO ₂)	± 30 ppm $\pm 3\%$ of reading
Dimensions	148 x 58 x 29 mm
Life expectancy	<15 years (battery 2 years)
Power supply	2x AA Lithium batteries (included)
Communication	BLE LoRa (optional)

Key benefits

- Maintenance free ¹
- 4 sensors in one housing
- Battery-powered
- IoT connected using the market's leading radio interfaces
- IAQ indication on display as well as intuitive LEDs
- Remote IAQ monitoring through cloud based portal
- Available as a white-label product

Note 1: Except battery replacement, no maintenance required in normal indoor air as ABC (Automatic Baseline Correction) is used.



Senseair Aercast™ Technical Specification

General Performance:

Storage Temperature and Humidity Range	-20–70°C, 0–85%RH,
Life Expectancy	<15 years (battery life length 2 years)
Maintenance Interval	Maintenance-free ¹
Display	LCD memory display with CO ₂ (ppm), Temperature (°C) and Humidity (%RH)
Warm-up Time	≤1min
Operating Temperature Range	0–50°C
Operating Humidity Range	0–85%RH, non condensing humidity environment, max 40g H ₂ O/m ³ air
Operating Environment	Residential and commercial indoor environment

Electrical / Mechanical:

Power source	2x 3.6V AA lithium batteries
Power Consumption	1mW average at 60s measurement interval
Peak Power Consumption	80mW without network communication

CO₂ Measurement:

Sensing Method	Non-dispersive infrared (NDIR) waveguide technology
Sampling Method	Diffusion
Response Time (T1/e)	<3min
Measurement Range	400–5000ppm _{vol} , extended range up to 10000ppm
Accuracy	±30ppm ± 3% of reading (@15–35°C and 0–80%RH) ^{2,3,4}
Pressure Dependence	Pressure compensated
Measurement Interval	User configurable, default 60s

Temperature Measurement:

Measurement Range	-40–85°C
Accuracy	±0.1°C (@ 25°C), ±1.0°C (@ 0–50°C)
Repeatability	±0.25°C (@ 17–28°C)
Response Time	<6min (Air velocity of 0.15m/s)

Relative Humidity Measurement:

Measurement Range	0–85%RH
Accuracy	±3%RH (@ 20–80%RH, @ 25°C)

VOC Measurement (Optional):

Measured gases	Ethane, Isoprene, Ethanol, Acetone, Carbon Monoxide
Measurement Range	0–500 IAQ
Accuracy	3 IAQ (@ 20–80%RH)
Sensor to sensor deviation	15 IAQ (@ 20–80%RH)

Communication interface

BLE	Bluetooth 4.2 low energy, Tx power +8dBm, Rx Sensitivity -90 dBm, range up to 200 m
LoRa (optional)	User configurable

Note 1: Except battery replacement, no maintenance required in normal indoor air as ABC (Automatic Baseline Correction) is used.

Note 2: In normal IAQ applications, accuracy is defined after minimum three (3) ABC-periods of continuous operation with ABC.

Note 3: Accuracy is specified over operating temperature range. Specification is referred to certified calibration mixtures. Uncertainty of calibration gas mixtures (±1% currently) is to be added to the specified accuracy for absolute measurements.

Note 4: Repeatability is included. Uncertainty of calibration gases (±1%) is added to the specified accuracy.