

Sensedge Technical Specifications

(SE-100)



Product Overview

The Sensedge is a premium commercial air quality monitor for healthy buildings and workplaces, featuring a stunning touchscreen display. It provides real-time data, cloud-based analytics, and integrates with building management systems for automated air quality control.

Product Features

Default sensors

Particulate Matter (PM_{2.5}, PM₁₀),
TVOC, CO₂, Relative Humidity,
Temperature

Crystal-clear display screen

Vibrant, high-resolution display that delivers real-time air quality data at a glance. Quickly assess indoor conditions without needing external devices or applications.

Onboard memory & battery

Built-in battery as a backup that can last up to 8 hours, as well as 8GB of onboard memory—capable of storing multiple years of air quality data.

Replaceable sensor modules

Modules can be swapped in seconds providing a cost-effective way to maintain long-term accuracy and avoid the traditional calibration process.

Sensor Specification

Particulate Matter Sensor

Sensor technology

Laser particle sensor (Light scattering)

Mass concentration size range

PM_{2.5}: 0.3 to 2.5 µm

PM₁₀: 0.3 to 10.0 µm

Mass concentration range

0 to 1,000 µg/m³

Mass concentration accuracy for PM_{2.5}

0 to 30 µg/m³: ±3 µg/m³

30 to 1000 µg/m³: ±10 % m.v.

Mass concentration accuracy for PM₁₀

0 to 30 µg/m³: ±3 µg/m³

30 to 1000 µg/m³: ±15 % m.v.

Sensor output resolution

1 µg/m³

Calibration

Calibrated against standardized aerosol mix

WELL specification requirements

Adjustable particle density (K-factor) to accommodate project/region specific particulate profile.

Complies with [WELL Performance Verification Guidebook](#) to be used in WELL certification.

TVOC Sensor

Sensor technology

Multi-pixel metal oxide sensor (MOx)

Target gas profile

Complex mixture of 22 VOCs¹ as defined by Molhave et al.

Measurement range

0 - 60,000 ppb

Accuracy

±15 % ±8 ppb

Sensor output resolution

1 ppb

Calibration

Calibrated against ethanol

Sampling process

Passive

WELL specification requirements

Calibration gas: ethanol

Target gas profile (ppb=µg/m³ conversion factor under STP): 22 VOC mixed per Molhav et al. (1 ppb = 4.57 µg/m³)

Complies with [WELL Performance Verification Guidebook](#) to be used in WELL certification.

CO₂ Sensor

Sensor technology

Non-dispersive infrared (NDIR)

Measurement range

400 to 2,000 ppm²

Up to 10,000 ppm extended range³

Accuracy

± 40 ppm ± 3%⁴ (Comply with ANSI/ASHRAE Standard 62.1-2022)

Sensor output resolution

1 ppm

Target gas

CO₂

Temperature Sensor

Sensor technology

Digital sensor

Measurement range

-20 °C - 100 °C

Accuracy

±1 °C

Comply with WELL⁵

Sensor output resolution

0.01 °C

Relative Humidity Sensor

Sensor technology

Digital sensor

Measurement range

0 - 100 %RH

Accuracy

±5 % RH

Sensor output resolution

0.01 % RH

Device Specification

Power

USB-C: 100-240V AC (5V 1.8A DC)
Onboard Battery:
Capacity & voltage: 5200 mAh @ 4.2 V
Usage time: 8 hours
Power Consumption:
Average: 6W
Peak: 10W

Connectivity

Wi-Fi:
2.4 GHz 802.11 b/g/n
Security supported: 64/128 WEP, WPA-PSK, WPA2-PSK, WPA, WPA2 Personal
Ethernet:
IEEE 802.3
Data rate: Up to 100 Mbps

Integration

BACnet/IP
Modbus/TCP
Cloud MQTT
On premise MQTT
Open API

Installation

Methods:
Surface mount
Drywall mount

Languages

English
German
Traditional Chinese
Simplified Chinese

Operating conditions

Operating temperature: 0 - 50 °C
Operating humidity: 5 to 95 %RH, non-condensing

Data Logging & Storage

Frequency of readings (Log interval):
1 minute, 1 hour, 1 day
Data push interval: 1 minute⁶
Onboard memory:
8 GB (> 50,000,000 data points)
Micro SD card:
Support 32GB or smaller - SD card not included

Modules & Calibration

Compatible modules:
KM-100: Particulate Matter (PM_{2.5}&PM₁₀)
KM-103: TVOC, Temperature, and Relative Humidity
Calibration: Calibration via replaceable sensor modules

Security

Kaiterra's platform architecture meets the most stringent security standards and is regularly subjected to 3rd party penetration tests. Read more about our security [here](#).

Certifications

Quality: RESET Grade B
Building Automation:
BTL: Certified under the BACnet Smart Sensor (B-SS) device profile

Display

7" full-color touchscreen

Size & Weight

184 mm x 146 mm x 48 mm (7.2" x 5.7" x 1.9")
800 g (1.76 lbs)

1. n-Hexane, n-Nonane, n-Decane, n-Undecane, 1-Octane, 1-Decene, Cyclohexane, m-Xylene, Ethylbenzene, 1,2,4-Trimethylbenzene, n-Propylbenzene, α-Pinene, n-Pentanal, n-Hexanal, Iso-propanol, n-Butanol, 2-Butanone, 3-Methyl-3-butanone, 4-Methyl-2-pentanone, n-Butylacetate, Ethoxyethylacetate, 1, 2-Dichloroethane
2. Extended exposure to concentrations below 400 ppm may result in incorrect operation of ABC algorithm and should be avoided.
3. Sensor provides readings in the extended range but the accuracy may be lower than that specified in the table.
4. The accuracy specification covers environments ranging from 0-50°C and 0-80% RH, and complies with indoor air quality standards ANSI/ASHRAE Standard 62.1-2022 at 25°C.
5. As a RESET Certified Grade B air quality monitor, this device automatically meets technical requirements for this parameter.
6. Customizable upon request