



# Sensedge Square Technical Specifications

(SQ-100)



## Product Overview

The Kaiterra Square provides real-time, accurate measurements of PM<sub>2.5</sub>, TVOC, and CO<sub>2</sub> concentrations, as well as temperature and relative humidity readings. With multiple power, connectivity, and installation options, the Kaiterra Square is made to the satisfaction of building owners, facility managers, tenants, and employees.

## Product Features

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### Default sensors

Particulate Matter (PM<sub>2.5</sub>, PM<sub>10</sub>),  
TVOC, CO<sub>2</sub>, Relative Humidity,  
Temperature

### Customizable

Customize the device with your  
choice of parameters, colors, and  
branding. MOQ required.

### Installation

Designed to seamlessly recess into a  
standard 86-type in-wall box,  
ensuring quick and straightforward  
installation

# Sensor Specification

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## Particulate Matter Sensor

### Sensor technology

Laser particle sensor (Light scattering)

### Mass concentration size range

PM<sub>2.5</sub>: 0.3 to 2.5 µm

PM<sub>10</sub>: 0.3 to 10.0 µm

### Mass concentration range

0 to 1,000 µg/m<sup>3</sup>

### Mass concentration accuracy for PM<sub>2.5</sub>

0 to 100 µg/m<sup>3</sup> ±10 µg/m<sup>3</sup>

100 to 500 µg/m<sup>3</sup> ±10 % m.v.

### Sensor output resolution

1 µg/m<sup>3</sup>

### Calibration

Calibrated against standardized aerosol mix

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## TVOC Sensor

### Sensor technology

Multi-pixel metal oxide sensor (MOx)

### Target gas profile

Complex mixture of 22 VOCs<sup>1</sup> 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

Diffusion

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## CO<sub>2</sub> Sensor

### Sensor technology

Non-dispersive infrared (NDIR)

### Measurement range

400 to 2,000 ppm<sup>2</sup>

Up to 10,000 ppm extended range<sup>3</sup>

### Accuracy

± 40 ppm ± 3%<sup>4</sup> (Comply with ANSI/ASHRAE

Standard 62.1-2022)

### Sensor output resolution

1 ppm

### Target gas

CO<sub>2</sub>

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## Temperature Sensor

### Sensor technology

Digital sensor

### Measurement range

-40 °C - 125 °C

### Accuracy

±1 °C

### Sensor output resolution

0.01 °C

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## Relative Humidity Sensor

### Sensor technology

Digital sensor

### Measurement range

0 - 100 %RH

### Accuracy

±5 % RH

### Sensor output resolution

0.01 % RH

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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.

# Device Specification

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## Power

100-240 V AC (SKU: QA086403A)

12-30 V DC (SKU: QD086403A) PoE

## Connectivity

Wi-Fi:

2.4 GHz 802.11 b/g/n

Security supported: 64/128 WEP, WPA-PSK,

WPA2-PSK, WPA, WPA2 Personal

## Integration

Cloud MQTT

On premise MQTT

Open API

## Installation

Recessed dry wall mount

Recessed electrical box mount

## Operating conditions

Operational temperature: 0 - 50 °C

Operational 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 minute

Onboard memory: 1 hour of data

## Size & Weight

Length: 90 mm (3.5 in)

Width: 90 mm (3.5 in)

Height: 50 mm (2.0 in)

164.8 g (0.36 lbs)