

SV23 Air Quality Sensor



Overview

The SV23 Air Quality Sensor is a cloud-managed device for monitoring indoor air quality and ambient environment conditions. Like the SV21, it measures temperature and relative humidity, while also introducing measurements for indoor pollutants like particulate matter and volatile organic compounds.

This sensor is well suited for environments like bathrooms and locker rooms, where organizations can detect vaping or concerning noise disturbances. It is also well suited for monitoring air quality in offices and other indoor spaces, enabling organizations to track CO2 levels, AQI, the RESET Viral Index, and more. The SV23 also collects extensive data that can be used to meet requirements for leading green building certifications like RESET, LEED or WELL.

Organizations additionally benefit from alerts for offline devices, 24/7 support, and automatic firmware updates, helping to ensure their sensors are operational and improving over time.

Key features

Multifaceted coverage

- 8 ambient environment readings help organizations protect people and assets
- 9 air quality readings help organizations optimize the respiratory health of building occupants

Easy, durable install

- Durable, vandal-resistant design and an optional accessory support secure wall or ceiling mounting
- PoE-only connection coupled with intuitive software brings devices online in minutes

Superior performance

- Bandwidth-friendly design, operating at <5 kbps per device, enables enterprise scale
- 365 days onboard storage of air quality sensor data supports compliance and operational needs



SV23

Tech specs

**SV23**

Power and network

Power consumption	4W	Connectivity	RJ-45 cable connector for Network/PoE connection
Power input	IEEE 802.3af PoE	LED indicator	System power and status indicator

General

Operating temperature	23.0°F to 113.0°F / -5.0°C to +45.0°C Indoors	Offline mode	Continues sampling and storing data on device
Operating humidity	0.0 to 95.0%	Sampling frequency	5 seconds
Storage	Device: up to 365 Days Cloud: up to 365 Days	Warranty	10 years

Compliance and availability

Availability	USA, CA, IN, UK, EU, AUS, NZ, MX	Compliance & safety	FCC Part 15B Class B, ICES-003 Class B, NDAA, UKCA, CE, RCM, VCCI, KCC, BIS, NOM, UL/cUL/IEC 62368-1, ECA, CAK, NCC, RURA, UCC
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Software capabilities

Alerts	Device status, specific alerts for each sensor reading based on duration and reading level	Sensor events	Configurable events for every on-device sensor reading
Alert notifications	Configurable SMS and email notifications	Sensor zones	Configurable alerts based on a group of sensors



SV23
Tech specs



SV23

Mechanical

Dimensions	Length: 6.96in / 170mm Width: 6.67in / 169.5mm Height: 1.8in / 48.0mm	Weight	19.54oz / 554.0g
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Dimensions



Installation

Included accessories	Mounting plate, installation kit, T10 security torx screwdriver, mounting screws, washers, drywall anchors and wing nut	Mounting options	Horizontal & vertical for wall and ceiling mounts
Popular install locations	Open office area (on ceiling) bathroom/locker room (on ceiling)		



SV23

Tech specs

**SV23**

Onboard sensors

Temperature	Sensor: CMOS Operating Range: -5.0 to 45.0°C (23.0 to 113.0°F) Typical Accuracy: $\pm 0.5^{\circ}\text{C}$ ($\pm 0.9^{\circ}\text{F}$), Max $\pm 1.0^{\circ}\text{C}$ / ($\pm 1.8^{\circ}\text{F}$)	Mold risk index	Sensor: Formula derived from other sensors Range: 0-3 Index
Relative humidity	Sensor: CMOS Operating Range: 23.0 to 113.0°F / -5.0 to 45.0°C Typical Accuracy: $\pm 0.9^{\circ}\text{F}$ / $\pm 0.5^{\circ}\text{C}$, Max $\pm 1.8^{\circ}\text{F}$ / $\pm 1.0^{\circ}\text{C}$	CO₂	Sensor: Photoacoustic Range: 0.0 - 40,000.0 ppm Typical Accuracy: 400.0 ppm - 1000.0 ppm $\pm 75.0\text{ppm}$ 1001.0 ppm - 2000.0 ppm $\pm (40.0\text{ ppm} + 5.0\%$ of reading)
PM2.5	Sensor: Laser scattering optical Sensor Range: 0 - 1000 $\mu\text{g}/\text{m}^3$ Typical Accuracy: 0 - 100 $\mu\text{g}/\text{m}^3$: $\pm 25\text{ }\mu\text{g}/\text{m}^3 + 5\%$ m.v.	Noise level	Sensor: MEMS microphone Range: 20 - 120 dB SPL (A-Weighted) Typical Accuracy: $\pm 5\text{ dB}$
PM4.0	Sensor: Laser scattering optical Sensor Range: 0 - 1000 $\mu\text{g}/\text{m}^3$ Typical Accuracy: 0 - 100 $\mu\text{g}/\text{m}^3$: $\pm 25\text{ }\mu\text{g}/\text{m}^3$ 100 - 1000 $\mu\text{g}/\text{m}^3$: $\pm 25\%$ m.v.	Air quality index	Sensor: U.S. Air Quality Index derived from multiple sensors, Range: 0 - 500.0
PM10.0	Sensor: Laser scattering optical Sensor Range: 0 - 1000 $\mu\text{g}/\text{m}^3$ Typical Accuracy: 0 - 100 $\mu\text{g}/\text{m}^3$: $\pm 25\text{ }\mu\text{g}/\text{m}^3$ 100 - 1000 $\mu\text{g}/\text{m}^3$: $\pm 25\%$ m.v.	Vape index	Sensor: Proprietary formula derived from multiple sensors Range: 0 - 100.0
TVOC index	Sensor: MOX Range: 0.0 - 500.0	Heat Index	Sensor: Formula derived from other sensors Range: 23 °F to 160 °F
Motion	Sensor: Passive infrared sensor, FoV: 120.0°	Dew point index	Sensor: Formula derived from other sensors Range: 32°F to 95°F
Humidex	Sensor: Formula derived from other sen- sors Range: 0-50	RESET® viral index	Sensor: Formula derived from other sensors Range: 0% - 100%



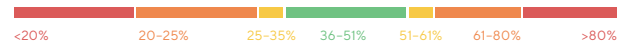
Reading overview | ambient environment indicators

Temperature



SV23 temperature measurements are accurate from 23°F – 113°F (-5 – 45°C). As with other data streams, users can customize temperature alerts if a space is kept at a temperature outside of the recommended green zone.

Relative humidity



Relative humidity is the amount of moisture in the air compared to what the air can hold at that temperature.

Heat index



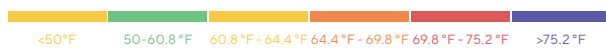
The heat index represents what the temperature feels like to the human body when relative humidity is combined with the temperature. It is derived from our existing temperature and humidity readings and uses the National Weather Service's heat index chart to calculate the reading value.

Humidex



Similar to the heat index and commonly used in Canada, Humidex indicates how hot it feels to the average person. It is calculated using a formula developed by Canadian meteorologists.

Dew point index



Dew point is the temperature at which air cools enough for water vapor to condense into dew or frost. Industries from transportation to agriculture often use this index to predict and mitigate risks from conditions like frost or fog.

Mold risk index



The Mold Risk Index assesses the likelihood of mold growth in confined, unventilated spaces based on temperature and humidity levels. Higher temperatures combined with elevated humidity create ideal conditions for mold spores to thrive, making these factors key indicators of potential mold growth.



Reading overview | ambient environment indicators

Noise level



A measure of total noise level at the sensor. OSHA regulations state that noise levels cannot exceed 90 dBA over an 8 hour period, or 95 dBA over a 4 hour period.

Motion

A measure of changes in infrared light absorption caused by the motion of warm bodies, as measured by a passive infrared sensor. Powered by the same technology as motion sensors for intrusion detection, a motion event indicates human/animal motion or other large changes in infrared activity.

Tamper detection

Indicates if your device has been moved or tampered with.



Reading overview | air quality indicators

Carbon dioxide (CO₂)



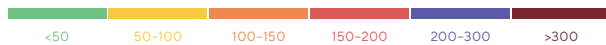
CO₂ measurements capture the absolute level of CO₂ in an environment. At levels of 800ppm or less, CO₂ is harmless. Between 800 and 2000ppm, CO₂ levels can be harmful to health, at levels above 2000ppm, CO₂ can be extremely harmful to human health.

Vape index



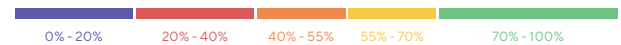
Verkada's Vape Index is a score derived from multiple sensors that is strongly correlated with vaping and/or smoking activity. Vape Index measurements outside of the green zone indicate suspected vaping/smoking activity, but could also reflect smoke or fumes from other sources. Smoke from cooking, burning fuel or wildfires may register highly on the Vape Index.

Air quality index



The U.S. AQI measures total air pollution and provides benchmarks for healthy values. When AQI exceeds 100, air quality is unhealthy - at first for certain sensitive groups of people, then for everyone as AQI values get higher.

RESET® viral index



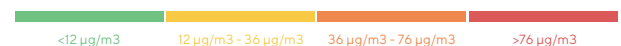
The RESET® Viral Index is designed to assess the likelihood of airborne virus transmission in indoor spaces, using research on virus transmission and applying it to continuous monitoring.

TVOC



TVOC is a total measure of Volatile Organic Compounds, which are chemicals that evaporate into the air and are emitted by cleaners, paints, varnishes, fragrances and hundreds of other products. Examples include benzene, ethylene glycol and formaldehyde. Measured as a TVOC index, VOCs are measured as a group because of their cumulative effects, with high TVOC values associated with negative health impacts.

PM 2.5

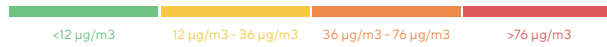


Particulate Matter 2.5 (PM 2.5) refers to tiny inhalable particles or droplets in the air that are less than 2.5 microns in width. PM 2.5 captures particulates from dust, vehicle exhaust, burning fuels, cooking, smoking and vaping. These particles can have a negative health impact.



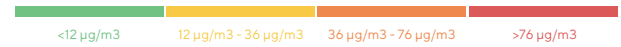
Reading overview | air quality indicators

PM 4.0



Particulate Matter 4.0 (PM 4.0) refers to tiny inhalable particles or droplets in the air that are less than 4.0 microns in width. PM 4.0 captures particulates from dust, vehicle exhaust, burning fuels, cooking, smoking and vaping. These particles can have a negative health impact.

PM 10.0



Particulate Matter 10.0 (PM 10.0) refers to tiny inhalable particles or droplets in the air that are less than 10.0 microns in width. PM 10.0 captures particulates from dust, vehicle exhaust, burning fuels, cooking, smoking and vaping. These particles can have a negative health impact.



Ordering information

Air Quality Sensors pricing

Model number	Description	US cost (MSRP) ^{USD}	WW cost (MSRP) ^{USD}
SV23-HW	SV23 Air Quality Sensor Hardware	\$999	\$999

Air Quality Sensors accessories pricing

Model number	Description	US cost (MSRP) ^{USD}	WW cost (MSRP) ^{USD}
ACC-SV-MOUNT-1	Reinforced Sensor Mount	\$89	\$89

Air Quality Cloud License pricing (new/capacity increase)

Model number	Description	US cost (MSRP) ^{USD}	WW cost (MSRP) ^{USD}
LIC-SV-1Y-CAP	1-Year SV License, Capacity Increase	\$249	\$249
LIC-SV-3Y-CAP	3-Year SV License, Capacity Increase	\$599	\$599
LIC-SV-5Y-CAP	5-Year SV License, Capacity Increase	\$999	\$999
LIC-SV-10Y-CAP	10-Year SV License, Capacity Increase	\$1,999	\$1,999

Air Quality Cloud License pricing (renewal)

Model number	Description	US cost (MSRP) ^{USD}	WW cost (MSRP) ^{USD}
LIC-SV-1Y-RNW	1-Year SV License, Renewal	\$249	\$249
LIC-SV-3Y-RNW	3-Year SV License, Renewal	\$599	\$599
LIC-SV-5Y-RNW	5-Year SV License, Renewal	\$999	\$999
LIC-SV-10Y-RNW	10-Year SV License, Renewal	\$1,999	\$1,999