

# Air Quality Monitoring for Every Environment



## Overview

### Indoor Air Quality (IAQ) monitoring with Verkada

Verkada's all-in-one Air Quality Sensors allow you to stay up to date with the conditions of your environment.

Indoor air quality has a direct impact on health. With Verkada's sensor platform, you can monitor IAQ to protect against disease transmission, enhance cognitive performance and improve all-around wellbeing—right from your fingertips.

Verkada helps keep people and environments safe with native air quality integration into your physical security platform, including:

- Simple, all-in-one sensors
- Real-time monitoring
- Native integration with Cameras and Alarms

## Getting started

With a collection of up to 14 sensor readings, the SV20 Series Sensors let you easily monitor the health and safety of your environments. Like the rest of the Verkada lineup, the Verkada SV20 Series Air Quality Sensors are simple to install, scale and customize, giving you everything you need to ensure safe air quality and elevate building performance.

### Verkada protects your environment against:



High CO2 from  
Poor Ventilation



Toxic Gasses,  
Chemicals & Odors



Indoor Vaping  
& Smoke



Toxic Mold from  
High Humidity



Dust, Particulates  
& Allergens



Loud or Dangerous  
Noise Levels

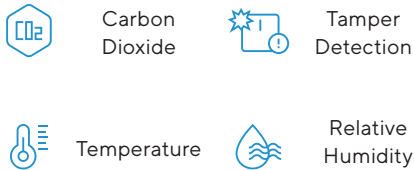


## Models available

The SV20 Series offers three robust models to meet your air quality needs.

### SV21

All in One Air Quality Sensor

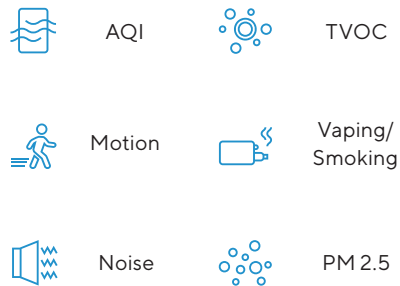


#### Best for

Meeting Rooms  
Classrooms  
Server Rooms

### SV23

Everything in the SV21 Plus

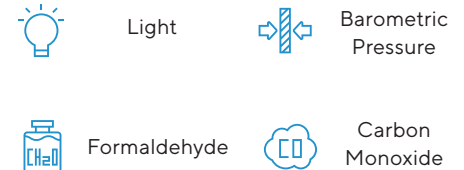


#### Best for

Vape Detection  
Air Quality  
Offices

### SV25

Everything in the SV23 Plus



#### Best for

Health Monitoring  
Specialty Monitoring  
Green Buildings

## Quickly install PoE devices

The SV20 Series gives customers the ability to choose the right sensor for their specific use case. At the same time, Verkada's simple-to-install PoE devices allow organizations to deploy sensors across a range of environments in minutes. Once installed, Verkada Command functions as your management hub for devices, alerts, Verkada Camera and Alarm integrations, proactive building improvements and more.

## Stay on top of Air Quality essentials

Verkada's robust yet simple-to-install and manage system allows organizations to stay ahead of indoor air quality essentials to create safe, productive environments. Indoor air quality has a direct impact on health and by monitoring IAQ, organizations can protect against disease transmission, enhance cognitive performance and improve all-around wellbeing – from a single, unified platform.





## Verkada's Cloud-Based Sensor



### Cloud-based sensor

Verkada's SV20 Series instantly connects to the cloud via Ethernet

### Easy to scale

No servers, databases, or on-prem clients to manage – simply just plug in and monitor

### Centralized management

Modern platform enables secure access on any device from anywhere in the world

## Benefits of monitoring Indoor Air Quality with Verkada

### Add context with video

Pair your Verkada Sensor with a Verkada Camera to gain visual evidence into environmental conditions. Spot events, identify problematic conditions, protect your people and assets – all on a single pane of glass.

### Create safer, smarter environments

Integrate air quality monitoring with Physical Access Control, Guest Management and more to maintain a safe indoor environment, promote energy savings and establish trust among employees and visitors.

### Remote monitoring for an added layer of protection

Augment air quality monitoring with water leak and glass break detection, 24/7 professional monitoring and more to further detect anomalies and protect people and assets.

### IAQ anywhere with Verkada Command Mobile

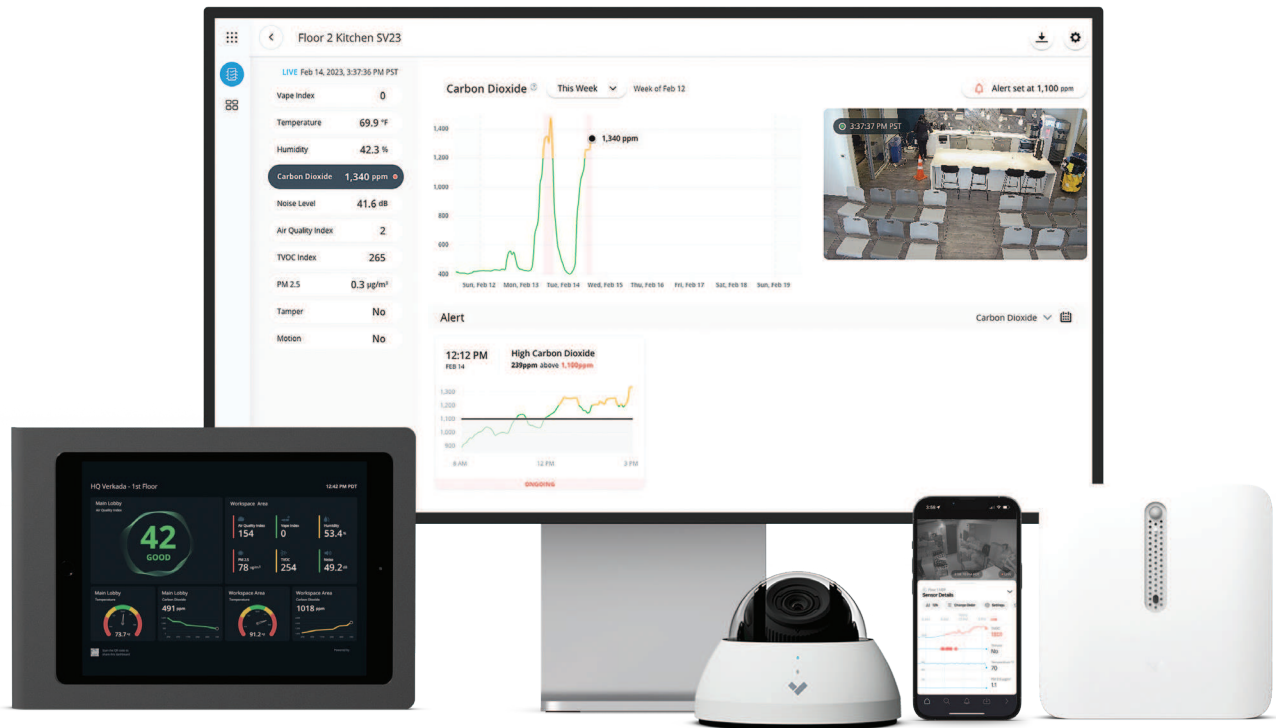
Set up devices, monitor air quality and manage events on any device with Verkada's top-rated mobile application. Native Verkada integration gives context and tools to spot trends and resolve issues on the go.





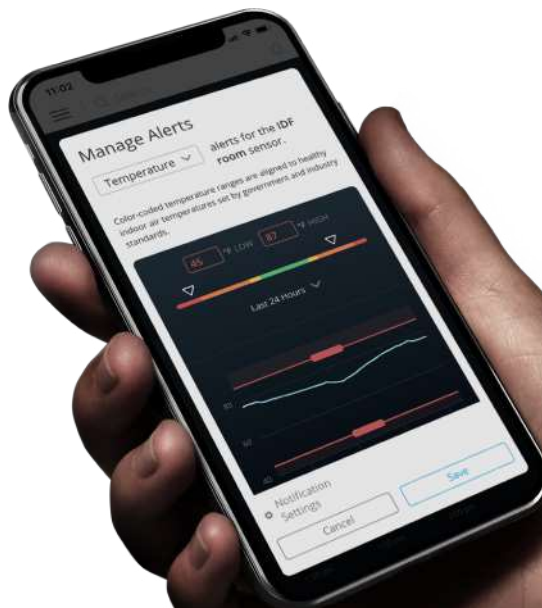
## A cloud-first approach to Air Quality monitoring

With Verkada's cloud-first system, you can manage air quality across your environment with a single cloud-based system. Centered on Verkada Command, Verkada's system allows you to manage devices, environments, displays alerts and more across devices with Verkada's integrated, single-pane-of-glass platform.



## A leading app to manage Air Quality

In addition to Verkada Command on a standard internet browser, Verkada also offers a leading mobile app for managing air quality essentials. Command Mobile, allows you to set up devices, configure and view alerts and more – at the tap of a finger.





## Visualize and Display Your Environmental Data With Dashboards



### Dashboards overview

Sensor dashboards allow organizations to easily visualize, analyze and display readings across all of sensor devices. Dashboards are included with every Sensor software license and allow you to quickly configure custom dashboards to better protect your environment.

#### To get started, simply:

- Configure Sensors in your environment with simple-to-install devices and intuitive management platform.
- Use the Sensor dashboards feature in Verkada Command to configure dashboard visualizations as needed for your environment.

#### Dashboards allow you to:

- Choose how to aggregate and visualize readings across locations, data types, or time periods.
- Combine different data tiles into a single dashboard to stay up to date at a glance.
- Display dashboard information dynamically on any 3rd party device including iPads, TV displays, computers and other displays.

With Verkada Sensor dashboards, you can visualize your data across all environments and can keep employees, students and visitors informed of current environmental conditions, such as indoor air quality.





## Sensor overview

Verkada has recommended sensor value ranges based on data from the Environmental Protection Agency (EPA), the World Health Organization (WHO), the Occupational Safety and Health Administration (OSHA) and the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE).

Color-coded sensor ranges are aligned to these government and industry standards for healthy indoor environments.

### The SV21 can show the following data streams in Command:

#### Temperature



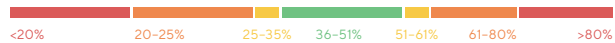
SV21 temperature measurements are accurate from 23°F – 122°F (-5 – 45°C). As with other data streams, users can customize temperature alerts if a space is kept at a temperature outside of the recommended green zone.

#### Carbon Dioxide (CO<sub>2</sub>)



CO<sub>2</sub> measurements capture the absolute level of CO<sub>2</sub> in an environment. At levels of 800ppm or less, CO<sub>2</sub> is harmless. Between 800 and 2000ppm, CO<sub>2</sub> levels can be harmful to health, at levels above 2000ppm, CO<sub>2</sub> can be extremely harmful to human health.

#### Relative Humidity



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

#### Tamper Detection

Indicates if your device has been moved or tampered with.



## Sensor overview

The SV23 can measure everything the SV21 can, as well as:

### Noise Level



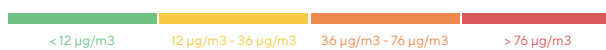
A measure of total noise level at the sensor. OSHA regulations state that noise levels cannot exceed 90 dBA over an 8 hour period, or 95 dBA over a 4 hour period.

### 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.

### PM 2.5



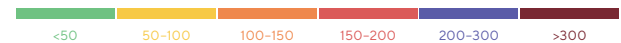
Particulate Matter 2.5 (PM 2.5) refers to tiny inhalable particles or droplets in the air that are less than 2.5 microns in width. These particles can have negative health effects and are caused by dust, vehicle exhaust, burning fuels, cooking, smoking and vaping.

### 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.

### 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.

### 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.



## Sensor overview

The SV25 can measure everything the SV23 can, as well as:

### Carbon Monoxide (CO)



Carbon Monoxide (CO) is an odorless, colorless gas that can be deadly. Measured in parts per million (ppm), CO is found in the fumes produced anytime fuel is burned on trucks, engines, stoves, grills or furnaces. Left undetected, CO can build up indoors and poison people or animals who breathe it.

### Formaldehyde



Formaldehyde is a colorless, flammable gas that is used in many common compounds such as building materials, paints, fertilizers and as a byproduct of combustion from fuel-burning appliances or cigarette smoke. Formaldehyde has a strong odor and can cause irritation of the skin, eyes, nose and throat and can cause some types of cancer.

### Ambient Light

With Verkada Sensors, you can understand light patterns, ensure a safe occupant experience and help improve building energy savings. Measured in lux, Ambient Light readings allow you to see light conditions in real time and set alerts based on customized thresholds to protect and optimize your spaces.

### Barometric Pressure

Barometric pressure, or atmospheric pressure, is a measure of the weight of air. Measured in hectoPascals (hPa), barometric pressure is impacted by the outdoor climate and indoor conditions like running HVAC systems or temperature.





## Sensor Tech Specs

	SV21	SV23	SV25
Temperature	Sensor: CMOS, Operating Range: -5 to 45° C (23 to 113° F) Typical Accuracy: $\pm 1^{\circ}$ C Units: $^{\circ}$ C / $^{\circ}$ F		
Humidity	Sensor: CMOS, Operating Range: 0 - 95% non-condensing Typical Accuracy: $\pm 3\%$ @ 25° C		
CO <sub>2</sub>	Sensor: Photoacoustic, Range: 0 - 40,000 ppm Typical Accuracy: 400 ppm - 1000 ppm $\pm 75$ ppm 1001 ppm - 2000 ppm $\pm (40 \text{ ppm} + 5\% \text{ of reading})$		
PM2.5	Sensor: Laser Scattering Optical, Sensor Range: 0 - 10000 $\mu\text{g}/\text{m}^3$ Typical Accuracy: 0 - 100 $\mu\text{g}/\text{m}^3$ : $\pm 10 \mu\text{g}/\text{m}^3$ 100 - 1000 $\mu\text{g}/\text{m}^3$ : $\pm 10\%$		
TVOC Index	Sensor: MOX Range: 0 - 500		
Air Quality Index	Sensor: U.S. Air Quality Index, derived from multiple sensors, Range: 0 - 500		
Vape Index	Sensor: Proprietary formula derived from multiple sensors, Range: 0 - 100		
Motion	Sensor: Passive Infrared Sensor, FoV: 120°		
Noise	Sensor: MEMS Microphone, Range: 20 - 120 dB SPL (A-Weighted) Typical Accuracy: $\pm 5$ dB		
CO	Sensor: Electrochemical, Range: 0 - 1000 ppm		
Formaldehyde	Sensor: Electrochemical Range: 0 - 5000 ppb Accuracy: $\pm 20$ ppb or $\pm 20\%$ m.v., whichever is larger		
Light	Sensor: CMOS Range: 0 - 7000 lux Typical Accuracy: $\pm (6+5\% \text{ reading})$ lux		
Barometric Pressure	Sensor: Piezoresistive Range: 300hPa - 1250 hPa Typical Accuracy: $\pm 50$ Pa		
Dimensions / Weight	L: 170mm W: 169.5mm H: 48mm, 500g / 17.64oz	L: 170mm W: 169.5mm H: 48mm, 554g / 19.54oz	L: 170mm W: 169.5mm H: 48mm, 568g / 20.04oz
Calibration	Factory calibrated		
Power	Power Consumption: 4W, Power Input: IEEE 802.3af PoE		



Sensor  
Tech Specs

	SV21	SV23	SV25
Connectivity	RJ-45 cable connector for Network/PoE connection		
LED Indicator	System power and status indicator		
Operating Range	-5°C to +45°C (23°F to 113°F)		
Sampling Frequency	5s		
Device Storage	Up to 365 days		
Cloud Storage	Up to 365 days		
Offline Mode	Continues sampling and storing data on device		
Operating Area	Indoor		
Availability	USA, Canada, India, UK, EU, Rest of World <sup>1</sup>		
Compliance & Safety	FCC Part 15B Class B, ICES-003 Class B, NDAA		
Mounting	Horizontal & Vertical for Wall and Ceiling Mounts		
Included Accessories	Mounting Plate, Installation Kit (with T10 Security Torx Screwdriver, Mounting Screws, Washers, Drywall Anchors & Wing Nuts)		
Anticipated Installation Locations	Server room closet (on ceiling or rack) Open office area (on ceiling) Bathroom/locker room (on ceiling) Closed rooms (on ceiling or on wall) Manufacturing floors (on ceiling or on wall) Hard goods storage facilities (on ceiling or on wall)		

1. There may be additional country-level requirements surrounding sales and installation; please consult with your local Verkada reseller for additional information.



## Alarms integration with Professional Monitoring for Sensors

### Meet your Virtual Guard

Verkada offers a 24/7 professional monitoring service to review and respond to events from your Sensors. Monitoring is provided by three fully redundant, U.S.-based, UL listed central stations with Five Diamond Certification from The Monitoring Association.

#### Assess the situation

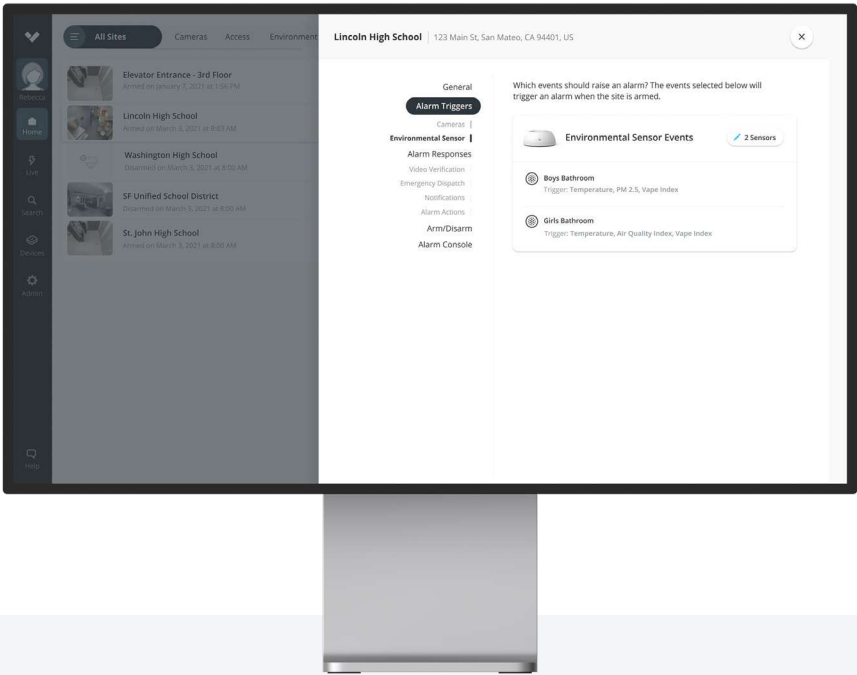
- Events from your SV20 Series Air Quality Sensor (including motion and noise alerts) can be configured as alarm triggers. While your site is armed, agents will review video footage of these events from nearby cameras in real time.
- If the video footage reveals a threat to people or property, or if no nearby camera is available, an alarm will be raised.

#### Make contact

- When an alarm is raised, agents will call and send SMS messages to the predetermined contact list.
- If there's a visible emergency in progress, agents will contact local emergency services immediately.

#### Take action

- If a threat is confirmed by someone on the contact list, or if no one can be reached, agents will dispatch local first responders to the site address.
- All events can be reviewed, archived and accessed from Command for incident investigation.



## Alarm License pricing

Model Number	Description	Cost (MSRP) USD
LIC-BA-1Y	1-Year Alarm License	\$1,500
LIC-BA-3Y	3-Year Alarm License	\$4,500
LIC-BA-5Y	5-Year Alarm License	\$7,500
LIC-BA-10Y	10-Year Alarm License	\$15,000

### LIC-BA Alarm License

Professional monitoring of Verkada Sensors is included in the Alarm License. The Alarm License includes access to the cloud-managed Verkada Alarms platform and unlimited review of events. One Alarm License is required for each unique site address, with no limit on monitored devices.



# Ordering Information

## Sensor pricing

Model Number	Description	Cost (MSRP) USD
SV21-HW	SV21 Air Quality Sensor Hardware	\$699
SV23-HW	SV23 Air Quality Sensor Hardware	\$999
SV25-HW	SV25 Air Quality Sensor Hardware	\$1,299
LIC-SV-1Y	1-Year Sensor License	\$249
LIC-SV-3Y	3-Year Sensor License	\$599
LIC-SV-5Y	5-Year Sensor License	\$999
LIC-SV-10Y	10-Year Sensor License	\$1,999