Enhance the Health, Safety, and Comfort of Your Indoor Environments

Overview

Verkada Air Quality Sensors empower organizations to optimize the health, safety, and comfort of their indoor environments with an all-in-one sensor device. Organizations can monitor a broad range of air quality and ambient environment conditions, effectively respond to deviations in sensor readings with real-time alerts and integrated video insights, and analyze and share the condition of their indoor environments using detailed reporting functionality.

Organizations can use air quality sensors to tackle diverse challenges, from protecting networking equipment to minimizing the risk of viral disease transmission. Using Command, Verkada's cloud-based management platform, organizations can easily scale and manage their deployments across sites. They can monitor all sensors in one place, edit settings for a group of sensors at once, and aggregate data across sensors for global insights.

Key Features

Comprehensive coverage

- 10+ ambient environment readings help organizations protect people and assets
- 10+ 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

Air Quality Sensor Models & Supported Readings

For a detailed overview of each reading, including measurement scales, see the Reading Overview section of this document.



	SV21	SV23	SV25
Ideal for	IT closets / server rooms and cold storage areas	Bathrooms, locker rooms, corridors, classrooms & meeting rooms	Laboratories and production zones
10 Year Warranty	✓	✓	✓
Sensors	4	10	15
		Ambient Environment	
Temperature	✓	✓	✓
Relative Humidity	✓	✓	✓
Heat Index	✓	✓	✓
Humidex	✓	✓	✓
Dew Point Index	✓	✓	✓
Mold Risk Index	✓	✓	✓
Tamper Detection	✓	✓	✓
Noise Level	–	✓	✓
Motion	–	✓	✓
Ambient Light	–	–	✓
Barometric Pressure	–	–	✓
Audio Recording	–	–	✓
		Air Quality Monitoring	
Carbon Dioxide	✓	✓	✓
Vape Index	–	✓	✓
TVOC	–	✓	✓
Air Quality Index	–	✓	✓
RESET® Viral Index		✓	✓
PM 2.5, PM 4.0, PM 10.0	–	✓	✓
Carbon Monoxide	–	–	✓
Formaldehyde	–	–	✓

Common Use Cases

Vape detection

Identify vaping incidents in restricted areas like bathrooms and locker rooms

Key Readings: Vape Index

Asset protection

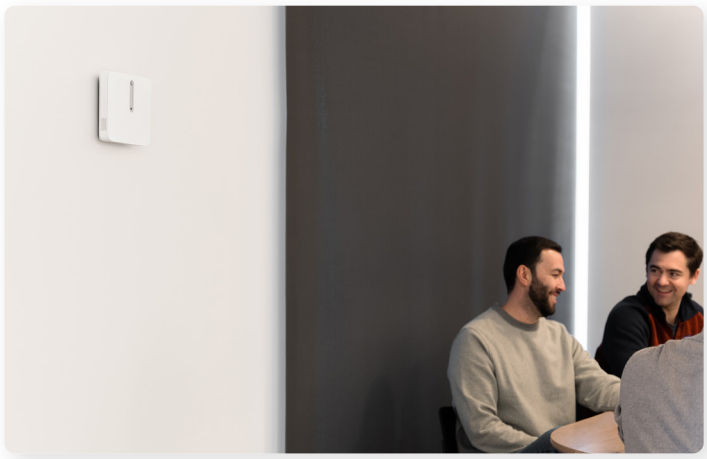
Protect assets, like networking equipment, from costly downtime or damage

Key Readings: Temperature, Relative Humidity

Environment, health & safety

Keep environments safe for workers and support OSHA compliance

Key Readings: Noise, TVOC, PM2.5, Formaldehyde and more



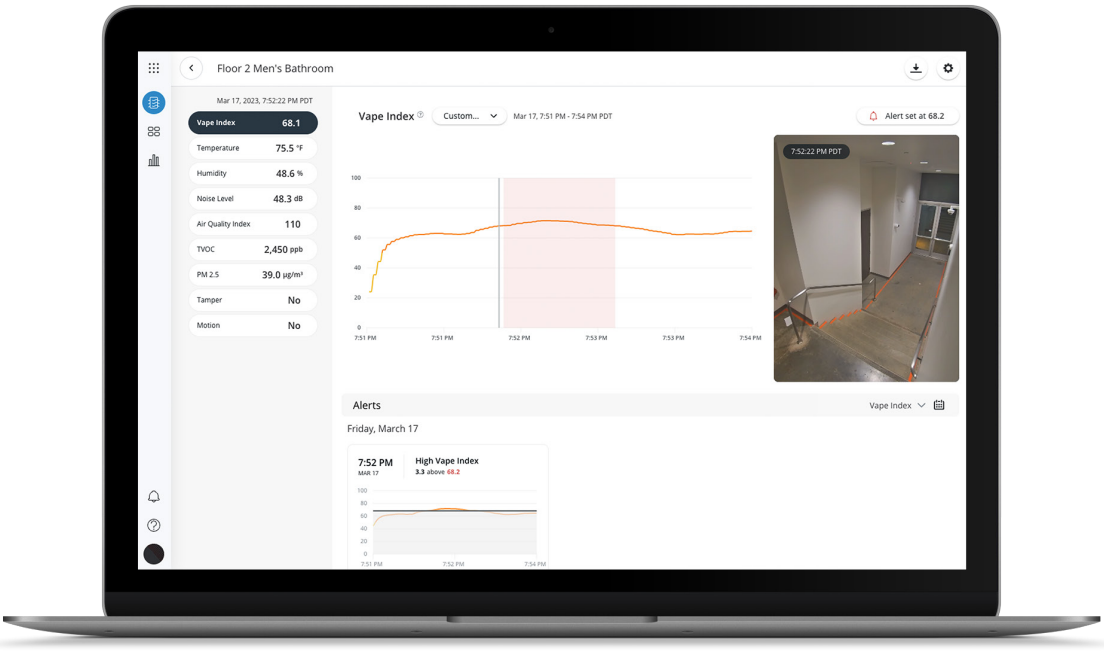
Indoor air quality monitoring

Identify harmful pollutants and optimize building occupants' respiratory health

Key Readings: CO2, AQI, PM2.5, and more

Real-Time Alerts & Video Insights

Swiftly Identify and Investigate Reading Deviations



Real-time alerts and video insights empower organizations to effectively address unwanted changes in their environmental conditions. Organizations can define thresholds for every sensor reading that, when surpassed, will trigger and log a sensor event. They can customize these event thresholds or use preset thresholds for readings like vape index, temperature, relative humidity, and noise level.

Organizations can create notification processes to be alerted in real time when events are triggered, with a live link that immediately directs recipients to sensor data. They can also pair sensors with native of third-party camera footage to add valuable visual context. In the case of temperature, relative humidity, and related alerts, Verkada also integrates with the BACnet protocol, allowing buildings to automatically adjust their HVAC in response to relevant deviations.

Key Features

Real-time alerts

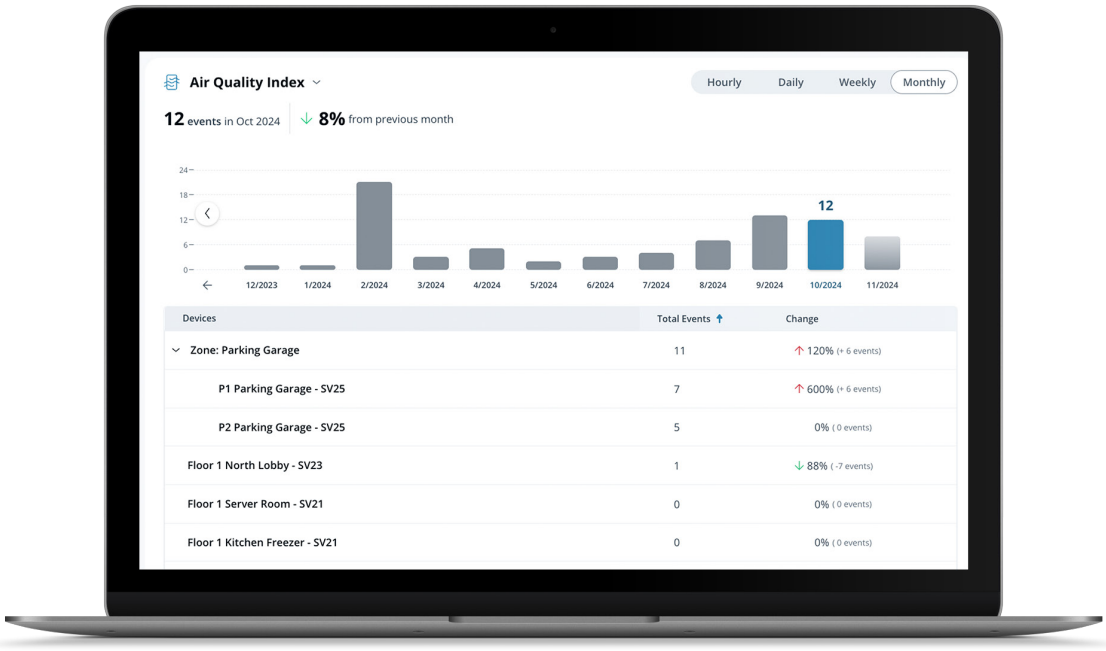
- Optimize notification channels (SMS, email, mobile app), users, timing, and schedules to ensure deviations are addressed
- Group sensor devices into zones and define notifications at a zone level to reduce redundant alerts
- Bulk edit event triggers and alerts across zones and sites to minimize manual work and enforce consistent standards

Video insights

- Overlay sensor data on Verkada camera footage or view side-by-side for easy event interpretation
- Use people detection capabilities from Verkada cameras to track people of interest associated with sensor events
- Leverage pre-built integrations or APIs to connect sensor event data with third-party video management systems

Monitoring & Reporting at Scale

Monitor and Analyze Reading Trends Across Sites



In Verkada Command, organizations can leverage a rich set of functionality to monitor, analyze, and report on their sensor deployments. They have the flexibility to zoom into a particular reading for one sensor or examine current readings and trends across sensors, zones, and sites.

Organizations can centrally access all sensor data and use it to support different operational and compliance needs. For example, manufacturing facilities can export reading data on noise levels to show they are in compliance with OSHA policies across sites, or school districts can analyze vape index trends to identify schools in most need of student intervention.

Key Features

Ongoing monitoring

- View color-coded graphs to easily track reading trends and identify concerning spikes
- Keep track of all ongoing events via a live event view on the Command homepage
- Visualize and display sensor readings with easy-to-configure dashboards across one or more sensors

Cross-site analytics & reporting

- Access, review, and export all sensor events via a comprehensive event log for each sensor device
- Analyze reading trends across sensors and sites to identify problematic areas or showcase progress
- Export sensor reading and event data in a shareable format, or extract data via API for reporting or analysis purposes

Feature Spotlight | Dashboard

Organizations can visualize sensor reading values across one or more sensors by creating custom dashboards in Verkada Command. They can dynamically share these dashboards to any email or phone number and display them on third-party devices like iPads or televisions using live links. Organizations can build trust among building occupants by publicly showcasing their dashboards and keeping occupants informed of current environmental conditions, such as indoor air quality.

Dashboards can feature a mix of tiles, depicting average or sensor-specific reading values. These tiles can span multiple pages, which will automatically cycle through in Command or on the display screen.

Key Features

Metric Tile

Aggregate reading values across multiple devices and display average

Line Graph Tile

Display the last 24 hours' worth of data for one reading from a single device

Sensors Reading Tile

Display multiple current reading values from a single device

Gauge Tile

Aggregate reading values across multiple devices and display average on a scale

List Tile

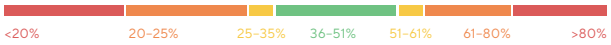
Aggregate reading values across multiple devices and display as a table

Reading Overview | Ambient Environment Indicators

Temperature

SV23 and SV25 temperature measurements are accurate from -5°C to 45.0°C (23°F to 113.0°F). SV21 temperature measurements are accurate from -32°C to 45.0°C (-25°F to 113.0°F) for all sensor readings with the exception of CO2. For the SV21, CO2 readings are accurate down to -5°C to 45.0°C (23°F to 113.0°F), and temperatures below -5° C may damage the CO2 sensor. 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.

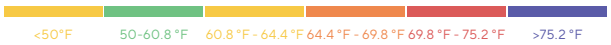
Heat Index

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.

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.

Audio Recording

An audio recording system powered by an omnidirectional digital microphone that can record up to 365 days of audio on any SV25 device. Audio recording is disabled by default and also comes with standard privacy features that ensure audio recording capabilities are deployed in a way that respects individuals' privacy.

Tamper Detection

Indicates if your device has been moved or tampered with.

Reading Overview | Air Quality Indicators

Carbon Dioxide (CO_2)

CO_2 measurements capture the absolute level of CO_2 in an environment. At levels of 800ppm or less, CO_2 is harmless. Between 800 and 2000ppm, CO_2 levels can be harmful to health, at levels above 2000ppm, CO_2 can be extremely harmful to human health.

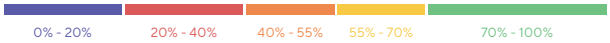
Vape Index

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

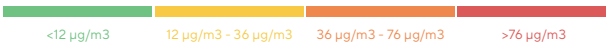
TVOC is a total measure of Volatile Organic Compounds, which are chemicals that evaporate into the air and are emitted by cleaners, paints, varnishes, fragrances and hundreds of other products. Examples include benzene, ethylene glycol and formaldehyde. Measured as a TVOC index, VOCs are measured as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

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.

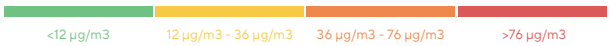
Reading Overview | Air Quality Indicators

PM 2.5



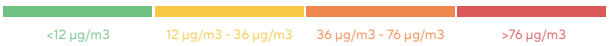
Particulate Matter 2.5 (PM 2.5) refers to tiny inhalable particles or droplets in the air that are less than 2.5 microns in width. PM 2.5 captures particulates from dust, vehicle exhaust, burning fuels, cooking, smoking and vaping. These particles can have a negative health impact.

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.

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.

Ordering Information

Air Quality Sensors 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
SV25-HW-F	SV25-F Air Quality Sensor Hardware	$1,449
SV25-128-HW	SV25 Air Quality Sensor Hardware	$1,449

Air Quality Sensors Accessories Pricing

Model Number	Description	Cost (MSRP) USD
ACC-SV-MOUNT-1	Reinforced Sensor Mount	$89

Air Quality Cloud License Pricing (New/Capacity Increase)

Model Number	Description	Cost (MSRP) USD
LIC-SV-1Y	1-Year Regular Sensor License	$249
LIC-SV-3Y	3-Year Regular Sensor License	$599
LIC-SV-5Y	5-Year Regular Sensor License	$999
LIC-SV-10Y	10-Year Regular Sensor License	$1,999
LIC-SV-1Y-CAP-G	1-Year SV License for Government, Capacity Increase	$374
LIC-SV-3Y-CAP-G	3-Year SV License for Government, Capacity Increase	$899
LIC-SV-5Y-CAP-G	5-Year SV License for Government, Capacity Increase	$1,499
LIC-SV-10Y-CAP-G	10-Year SV License for Government, Capacity Increase	$2,999

Ordering Information

Air Quality Cloud License Pricing (Renewal)

Model Number	Description	Cost (MSRP) USD
LIC-SV-1Y-RNW	1-Year SV License, Renewal	$249
LIC-SV-3Y-RNW	3-Year SV License, Renewal	$599
LIC-SV-5Y-RNW	5-Year SV License, Renewal	$999
LIC-SV-10Y-RNW	10-Year SV License, Renewal	$1,999
LIC-SV-1Y-RNW-G	1-Year SV License for Government, Renewal	$374
LIC-SV-3Y-RNW-G	3-Year SV License for Government, Renewal	$899
LIC-SV-5Y-RNW-G	5-Year SV License for Government, Renewal	$1,499
LIC-SV-10Y-RNW-G	10-Year SV License for Government, Renewal	$2,999

Air Quality Sensors Additional Resources

SV21 Datasheet

SV23 Datasheet

SV25 Datasheet

SV25-F Datasheet

Sensors for Education Solution Overview

Vaping & Smoking Detection Solution Overview