



Verkada SV20 Series Air Quality Sensors

User Guide

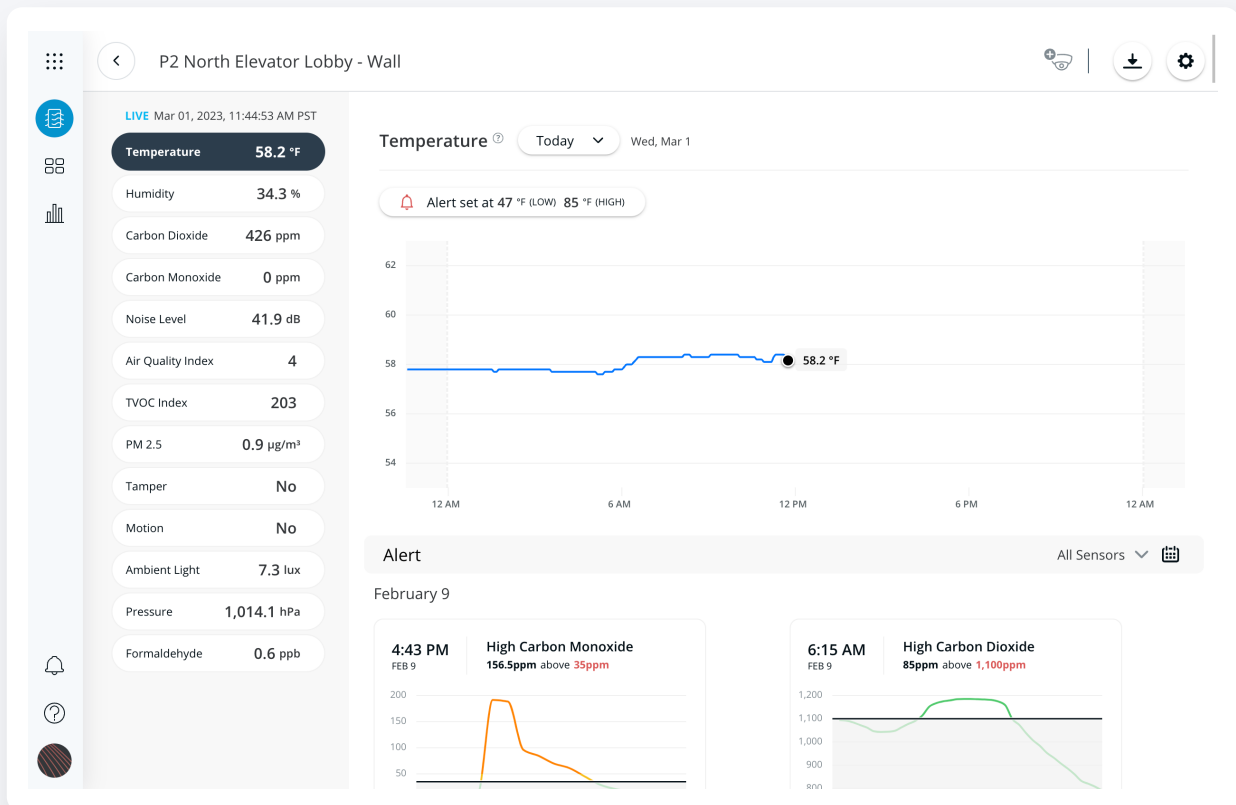
Overview

Verkada's SV20 Series Sensors are all-in-one devices for monitoring environmental changes in your physical space. With a collection of 14 sensor readings, the SV20 series simultaneously measures air quality, temperature, humidity, motion, noise and more. Each SV20 device can be managed from Verkada's web-based Command platform. Users can configure the device to display which sensor data they wish to monitor, as well as set custom alerts for when certain thresholds are exceeded. Users receive alert notifications in real-time, allowing for fast and proactive responses.



Platform overview

Sensors are managed, configured and monitored through Verkada's web-based Command platform.



Native video integration

From Command, Sensors can be paired with a Verkada Camera to gain greater visibility of what occurred at a given event. This integration is made possible through Verkada's all-in-one platform, enabling users to effortlessly add cameras without additional software or configurations.

Set Up: Mounting

Mounting location

SV20 Series Sensors can be mounted on the ceiling or on the wall. Ceiling mounting is best for use cases such as vape detection and pollution monitoring while wall mounting is best for use cases including CO₂ monitoring and carbon monoxide monitoring.

What to avoid

Since particles and chemicals in the air must come into contact with the SV20 series to be detected, it is important to keep the device away from sources of accelerated air flow. Doing so will ensure the air diffuses normally into the device.

Testing your Sensor

To ensure that your sensor is properly installed for vape detection, CO₂ monitoring and more, follow the simple steps below.

1. Light a match near sensor and let the smoke blow up into the sensor.
2. Look at the Vape Index, TVOC and PM2.5 index readings in the Verkada Command platform.
3. Reposition or configure as needed to ensure that your sensor is properly capturing all environmental information.



Set up: alerts

To get the best results from your SV20 Series Sensors, you can set up custom event thresholds and alerts so that you get notified anytime there is an abnormal environmental condition in your facility. Event thresholds will populate events in the Sensor Details page of Verkada Command, and customizable alerts will notify selected users when an alert occurs in your environment.

Alert Levels

Sensor Reading
Vape Index ▼

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. In particular, smoke from cooking, burning fuel, wildfires, etc. may register highly on the Vape Index.

80.3

Last 24 Hours ▼

100

50

0

6pm9pm12am3am6am9am12pm3pm

Notify: [Search users](#)

No users receiving notifications.

⚙ Notification Settings

CancelSave

Set custom thresholds

After clicking into a site from the main Sensor page, select the Vape Index button across the top. Then click the red rectangle that says “Alert set at” or “Set alert”. From there, users can customize the threshold at which they want to receive an alert.

Notify users

Once a threshold is set, administrators can set which users should receive alerts. These users will need to have an account in Command. When a threshold is met, the predetermined users will receive an alert to take action.

Manage alert settings

For each user, set the days of the week and hours for when an alert can be set. Custom alerts are ideal for teams that work on different schedules, or to reduce unnecessary notifications on weekends or after work hours.

Use cases

Overview – Indoor Air Quality (IAQ) monitoring with Verkada

High levels of indoor pollutants like PM2.5 particulates, TVOCs and excessive humidity can cause throat irritation and can irritate those with asthma. Similarly, high humidity levels damage equipment and reduce energy efficiency and pollutants like carbon monoxide can be deadly at high concentration levels. Across these environmental factors and others, Verkada's system of indoor air quality monitors offers a complete, end-to-end air quality monitoring solution allowing you to stay ahead of air quality essentials.

Simple to install, scale and customize, Verkada's SV20 Series Sensors give you everything you need to ensure safe air quality and elevate building performance. Verkada's solution allows you to monitor and protect against common indoor air quality pollutants including:

- PM2.5 (fine particulate matter)
- Carbon dioxide (CO₂)
- Volatile organic compounds (VOCs)
- Carbon monoxide (CO)
- Formaldehyde

These pollutants can come from a variety of sources such as building products, furnishings, pesticides, appliances and more. In fact, many indoor environments often suffer from poor air quality as a byproduct of day-to-day activity occurring in the space: dust, pollen, germs and more spread across an environment as people work, learn and commute through spaces.

Air quality monitoring allows you to know what is going on in your indoor environment and, importantly, to alert and notify about important events as they occur. With Verkada's air quality sensors you can, for example, get alerts when CO₂ levels rise above 1,000 ppm so that you can increase the ventilation, pollution and more in an indoor environment.



Use cases – CO₂ monitoring

Indoor CO₂ levels can have a direct impact on the health and safety of indoor environments. According to the Minnesota Department of Health, the level of CO₂ indoors depends upon:

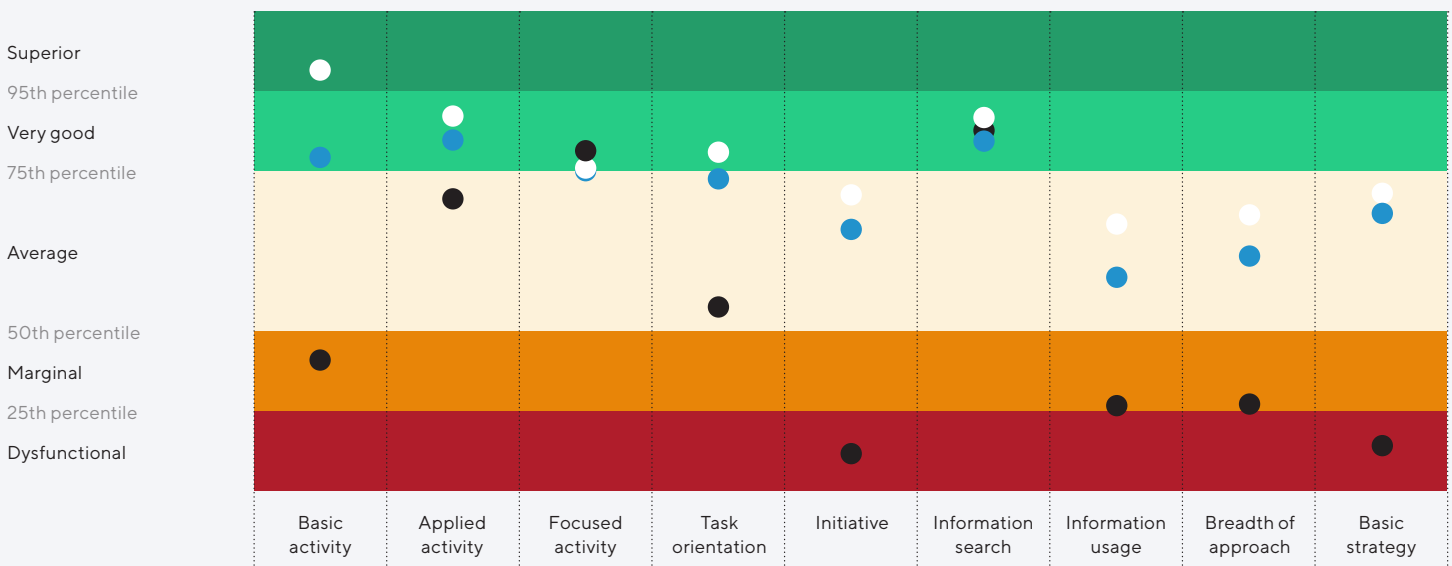
- The number of people present
- How long an area has been occupied
- The amount of outdoor fresh air entering the area
- The size of the room or area
- Whether combustion by-products are contaminating the indoor air (e.g., idling vehicles near air intakes, leaky furnaces, tobacco smoke)
- The outdoor concentration

At levels of several hundred parts per million (ppm) or lower, CO₂ is not harmful to humans. At levels of 1,000 ppm or higher, however, CO₂ can contribute to a feeling of sluggishness and impaired decision-making. Additionally, high-levels of CO₂ correlate with increased health risks and viral disease transmission. Many indoor spaces have poor ventilation and outdated HVAC systems, making CO₂ monitoring even more important. About 85% of recently installed HVAC systems in California’s K-12 classrooms, for example, were found to not provide adequate ventilation.

One influential study by the Lawrence Berkeley National Laboratory, for example, found that levels of CO₂ commonly found in crowded rooms decreased people’s performance on decision-making tests across 7 of 9 scales of performance.

Verkada’s combination of a powerful, simple-to-install CO₂ monitor and an intuitive cloud-based management platform help organizations monitor CO₂ levels and keep indoor spaces safe. Verkada’s SV21 CO₂ Monitor is a PoE device that can be plugged in and online in minutes. At the same time, Verkada Command provides a central hub for management, events and alerts.

Impaired decision-making due to High CO₂ Levels



Use cases – Vape detection

All in one vape detection

Verkada's Vape Detection solution detects vape, smoke and other pollutants based on our proprietary vape detection algorithm. The Verkada system uses a combination of environmental sensors and security cameras to detect and track vape usage, giving you an all-in-one solution to vaping.

Cloud-based system

Easy-to-install, fully integrated security platform that you can manage from multiple devices—anywhere.

Automated tools + alerts

Capture environmental changes, such as TVOC, PM2.5 and motion to identify vape events. Set up event thresholds based on the conditions in your environment and receive SMS and email alerts as events happen.

Privacy-enabled

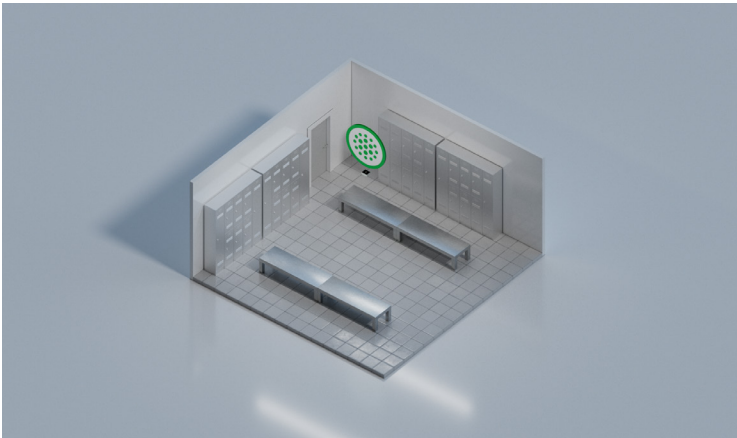
Deploy units and pair with cameras outside privacy enabled areas to catch events in a privacy enabling manner that lets you connect the dots between a vape event and an individual by recording entry and exit with video integration.

Log events over time

Verkada's system tracks vaping events over time, so you can identify patterns and investigate as needed.



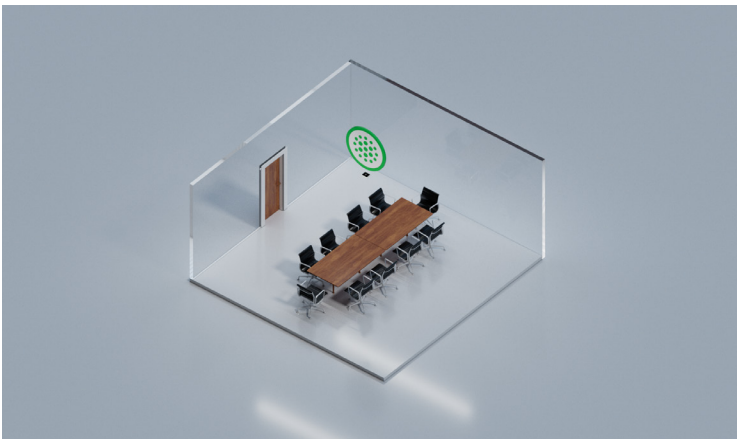
Native Camera + Air Quality Sensor use cases



Private areas

Vaping and smoking often occur in private spaces like restrooms and locker rooms. This is especially the case for schools, where students will vape discretely in places like bathroom stalls.

To ensure privacy, Cameras should be placed outside of these areas and positioned at a point of entry. When reviewing events, this will allow users to see who came and went during an incident.



Public areas

For non-private areas, such as classrooms, hallways or open spaces, users may place Sensors and Cameras in the same area at their discretion.

For the best context and visibility, have cameras positioned towards areas of interest. This can include directly under where the sensor is and where vaping/ smoking behavior is likely to occur.



Asset protection

Verkada's system of Air Quality Sensors can also help organizations monitor and protect assets across their organization. With integrated Air Quality, Video Security and more, customers can protect important business assets from harmful environmental conditions.

Use cases include:

- IDF closets for temperature and humidity control
- Monitoring manufacturing production
- Warehouse storage
- Commercial refrigeration monitoring
- Protecting healthcare or laboratory space
- Monitoring to prevent humidity damage



Disclaimer on investigations

The SV20 Series Sensors measures air quality events. In the case of vaping, the Sensors measure events indicative of vaping and smoking, but cannot provide proof of a vaping incident. Administrators should use the SV20 Series Sensor vape index and Verkada Camera integration to help with investigations and monitor vaping activity and patterns. Administrators can use data from both Verkada Camera and Sensor products for physical evidence and as the basis for further disciplinary/legal actions.

About Verkada

Verkada is leading the cloud-managed enterprise building security industry by enabling more than 15,700 organizations across 73 countries to protect their people and property in a way that respects individuals' privacy. Designed with simplicity in mind, Verkada offers six product lines — video security cameras, door-based access control, environmental sensors, alarms, guest and mailroom management — that provide unparalleled visibility through a single secure cloud-based software platform.

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