SV25-F
FIPS-Validated Air Quality Sensor

Overview

The SV25-F air quality sensor is a FIPS-validated device for monitoring indoor air quality and ambient environment conditions. It provides a broad range of readings, from temperature and relative humidity to indoor pollutants like particulate matter and formaldehyde.

The SV25-F can be deployed in a variety of indoor environments. It can be used in server rooms to safeguard networking infrastructure against extreme temperatures or humidity. In indoor environments, the SV25-F tracks CO2, AQI, the RESET® Viral Index, and more to promote healthier air quality for building occupants. For workspaces, it helps to support OSHA compliance by monitoring for excessive noise and heat index levels, among other parameters.

Organizations can use this device with either Command or Command in AWS GovCloud, and the SV25-F provides FIPS encryptionin-transit and encryption-at-rest as a default. Federal 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

Comprehensive coverage

- 11 ambient environment readings help organizations protect people and assets
- 11 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

FIPS-Validated SV25-F Sensor
Tech Specs

SV25-F

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	-5.0°C to +45.0°C (23.0°F to 113.0°F) 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	**Compliance & Safety**	FCC Part 15B Class B, ICES-003 Class B, NDAA, FY2019 NDAA compliant, TAA compliant

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

FIPS-Validated SV25-F Sensor
Tech Specs

SV25-F

Mechanical

Dimensions	Length: 170.0mm / 6.7in Width: 169.5mm / 6.7in Depth: 48.0mm / 1.9in	**Weight**	568.0g / 20.0oz

Dimensions

170.0mm / 6.7in

48.0mm / 1.9in

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	Manufacturing floors (on ceiling or on wall) Hard goods storage facilities (on ceiling or on wall)		

FIPS-Validated SV25-F Sensor
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SV25-F

Onboard Sensors

|			
Temperature	Sensor: CMOS Operating Range: -5.0 to 45.0°C (23.0 to 113.0°F) Typical Accuracy: ± 0.5°C (± 0.9°F), Max ± 1.0°C / (± 1.8°F)	**Mold Risk Index**	Sensor: Formula derived from other sensors Range: 0-3 Index
Relative Humidity	Sensor: CMOS Operating Range: 0.0 - 95.0% non-condensing Typical Accuracy: ± 3.0% @ 25.0°C	**CO₂**	Sensor: Photoacoustic Range: 0.0 - 40,000.0 ppm Typical Accuracy: 400.0 ppm - 1000.0 ppm ± 75.0ppm 1001.0 ppm - 2000.0 ppm ± (40.0 ppm + 5.0% of reading)
PM2.5	Sensor: Laser scattering optical Sensor Range: 0 - 1000 µg/m3 Typical Accuracy: 0 - 100 µg/m3: ± 25 µg/m3 + 5 % m.v	**Noise Level**	Sensor: MEMS microphone Range: 20 - 120 dB SPL (A-Weighted) Typical Accuracy: ± 5 dB
PM4.0	Sensor: Laser scattering optical Sensor Range: 0 - 1000 µg/m3 Typical Accuracy: 0 - 100 µg/m3: ± 25 µg/m3 100 - 1000 µg/m3: ± 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 µg/m3 Typical Accuracy: 0 - 100 µg/m3: ± 25 µg/m3 100 - 1000 µg/m3: ± 25% m.v.	**Vape Index**	Sensor: Proprietary formula derived from multiple sensors Range: 0 - 100.0
CO	Sensor: Electrochemical Range: 0 - 1000ppm	**Barometric Pressure**	Sensor: Piezoresistive Range: 300hPa - 1250 hPa Typical Accuracy: ±50 Pa
Formaldehyde	Sensor: Electrochemical Range: 0.0 - 5000.0ppb Accuracy: ±20.0ppb or ±20.0% m.v., which- ever is larger	**Audio Recording**	Sensor: Omnidirectional microphone
Ambient Light	Sensor: CMOS Range: 0.0 - 7000.0 lux Typical Accuracy: ±(6.0+5.0% of reading) lux	**Audio Retention**	From 90 days to 365 days
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: 23 °F to 122 °F
Humidex	Sensor: Formula derived from other sensors Range: 0-50	**RESET® Viral Index**	Sensor: Formula derived from other sensors Range: 0% - 100%

Reading Overview | Ambient Environment Indicators

Temperature

<47	47–61	61–64	64–78	78–81	81–92	>92

SV25 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.

Relative Humidity

<20%	20–25%	25–35%	36–51%	51–61%	61–80%	>80%
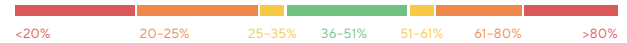
Relative humidity is the amount of moisture in the air compared to what the air can hold at that temperature.

Heat Index

| <80 °F	80 °F - 91 °F	91 °F - 103 °F	103 °F - 125 °F	>125 °F

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

<15	15-29	29-39	39-46

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

<50°F	50-60.8 °F	60.8 °F - 64.4 °F	64.4 °F - 69.8 °F	69.8 °F - 75.2 °F	>75.2 °F
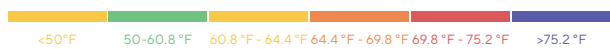
Dew point is the temperature at which air cools enough for water vapor to condense into dew or frost. Industries from transportation to agriculture often use this index to predict and mitigate risks from conditions like frost or fog.

Mold Risk Index

0	1	2	3

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

<85	85-95	95-105	>105

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 (CO₂)

<1,200	1,200–2,000	2,000–5,000	>5,000

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

|			
0–10	10–50	50–80	> 80

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

<50	50–100	100–150	150–200	200–300	>300
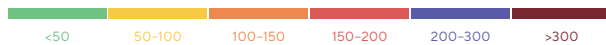
The U.S. AQI measures total air pollution and provides benchmarks for healthy values. When AQI exceeds 100, air quality is unhealthy - at first for certain sensitive groups of people, then for everyone as AQI values get higher.

RESET® Viral Index

0% - 20%	20% - 40%	40% - 55%	55% - 70%	70% - 100%
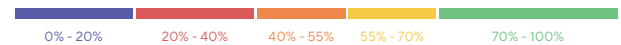
The RESET® Viral Index is designed to assess the likelihood of airborne virus transmission in indoor spaces, using research on virus transmission and applying it to continuous monitoring.

TVOC

<200	200–300	300–400

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)

|				
<35	35–50	50–200	200–400	>400

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

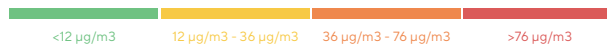| <12 µg/m3 | 12 µg/m3 - 36 µg/m3 | 36 µg/m3 - 76 µg/m3 | >76 µg/m3 |
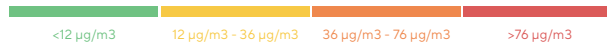
Particulate Matter 2.5 (PM 2.5) refers to tiny inhalable particles or droplets in the air that are less than 2.5 microns in width. PM 2.5 captures particulates from dust, vehicle exhaust, burning fuels, cooking, smoking and vaping. These particles can have a negative health impact.

PM 4.0

| <12 µg/m3 | 12 µg/m3 - 36 µg/m3 | 36 µg/m3 - 76 µg/m3 | >76 µg/m3 |
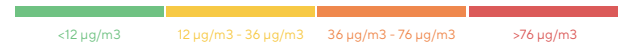
Particulate Matter 4.0 (PM 4.0) refers to tiny inhalable particles or droplets in the air that are less than 4.0 microns in width. PM 4.0 captures particulates from dust, vehicle exhaust, burning fuels, cooking, smoking and vaping. These particles can have a negative health impact.

PM 10.0

| <12 µg/m3 | 12 µg/m3 - 36 µg/m3 | 36 µg/m3 - 76 µg/m3 | >76 µg/m3 |

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

| <100 | 100-500 | 500-750 | >750 |

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
SV25-HW-F	SV25-F Air Quality Sensor Hardware	$1,449
SV25-128-HW	SV25-F 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 Sensors Software License Pricing (New/Capacity Increase)

Model Number	Description	Cost (MSRP) USD
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

Air Quality Sensors Software License Pricing (Renewal)

Model Number	Description	Cost (MSRP) USD
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