Improve safety, productivity and sustainability with CabGuard™

A comprehensive solution for improving operator safety

Operating in severe environments poses inherent risks to your most valuable assets, your people. CabGuard™ has been designed to help manage those risks and keep your team safe and healthy by comprehensively monitoring the operator cabin environment. CabGuard™ uses state-of-the-art smart sensing technologies, cloud-based monitoring, and intelligent engineering to provide real-time data and protection for:

- particulates
- temperature
- humidity
- pressure
- carbon dioxide
- vibration
- air quality index (AQI)

Knowledge is power

Whether you are using newer machinery with positive pressure cabins and air filtration, or legacy equipment with lower levels of protection from dust and other contaminants, CabGuard™ provides a valuable tool for assessing the operator cabin environment. In the case of positive pressure cabs, CabGuard™ can assure that these systems are operating within expected parameters of filtration and pressure. In addition, CabGuard™ enhances the value of positive pressure systems by adding protection against dangerous concentrations of CO_2, and VOCs, as well unsafe temperature, humidity and/or vibration levels.

Reduce accidents and improve productivity

Operator fatigue caused by poor cabin conditions can lead to loss of concentration, reduced reaction times and accidents. CabGuard™ allows managers to take preemptive action when conditions reach unsafe levels, thereby protecting both operators and machinery from costly accidents and loss of production.

Cloud-based data & remote alerts

CabGuard™ includes access to a cloud-based dashboard where environmental data can be tracked and monitored in both real-time as well as on a historical basis. The CabGuard™ System can be configured to send alerts to designated maintenance and engineering personnel in the event that a monitored parameter exceeds specified limits.

Communications flexibility

The CabGuard™ System supports BLE 5.2, CAN bus J1939, NB-IOT / LTE-M cellular and GPS protocols. In addition, CabGuard has been designed to work with industry-standard maintenance management platforms so that data and alerts can be communicated directly to existing monitoring systems.

No data subscription required

CabGuard™ does not require a data subscription for operation; limited access to cloud-based data and remote alerts is included in the purchase price.

CabGuard™
Active Cab Air Monitoring System

DustGuard, Corp.
950 S Pine Island Rd
Suite A-150
Plantation, FL 33324

www.dustguardcorp.com

Phone: 954.756.6270

Controller Specifications

DustGuard Particle Sensor Housing
- Remote cabin-environment analysis
- 163x131x81.3 mm enclosure size
- 180x65 mm mounting points (preferably mounted on shock mounts)
- Rugged PU rubber molded housing
- Easy to install binder-connectors for providing power and other (optional) IO
- 3 SMA (F) connectors for Cellular (optional), GPS (optional) and Satellite (optional) communications

ECU Environmental Ratings
- Operating temperatures: -10°C to +60°C
- Storage temperature: -40°C to +70°C
- Built in anti-vibration and shock resistance

Electronic Control Unit (ECU)
- Configurable thresholds for all analysis parameters
- Variable sampling rates
- Local user interface through LED's and an iPhone/Android app
- Onboard data storage
- 10V to 30V input power, 200 mA
- Communications:
  BLE 5.2
  Cellular: NB-IOT / LTE-M
  GPS (standard)
  CAN j1939 (option)
  3 Dry contacts (Ok, Warning, Danger signals)
  Satellite communications (option)

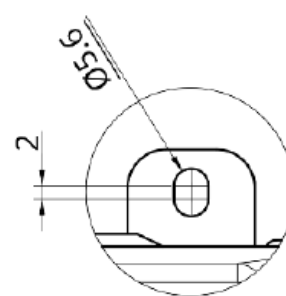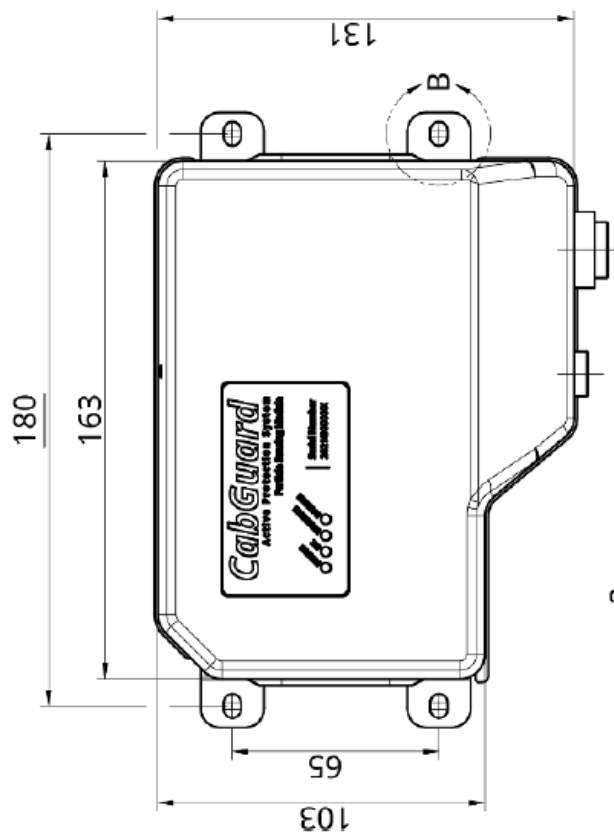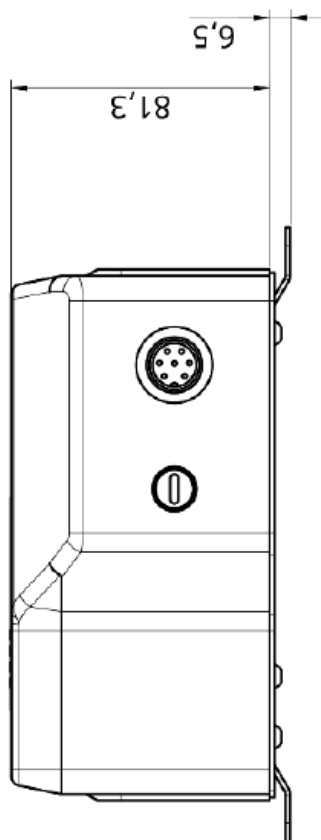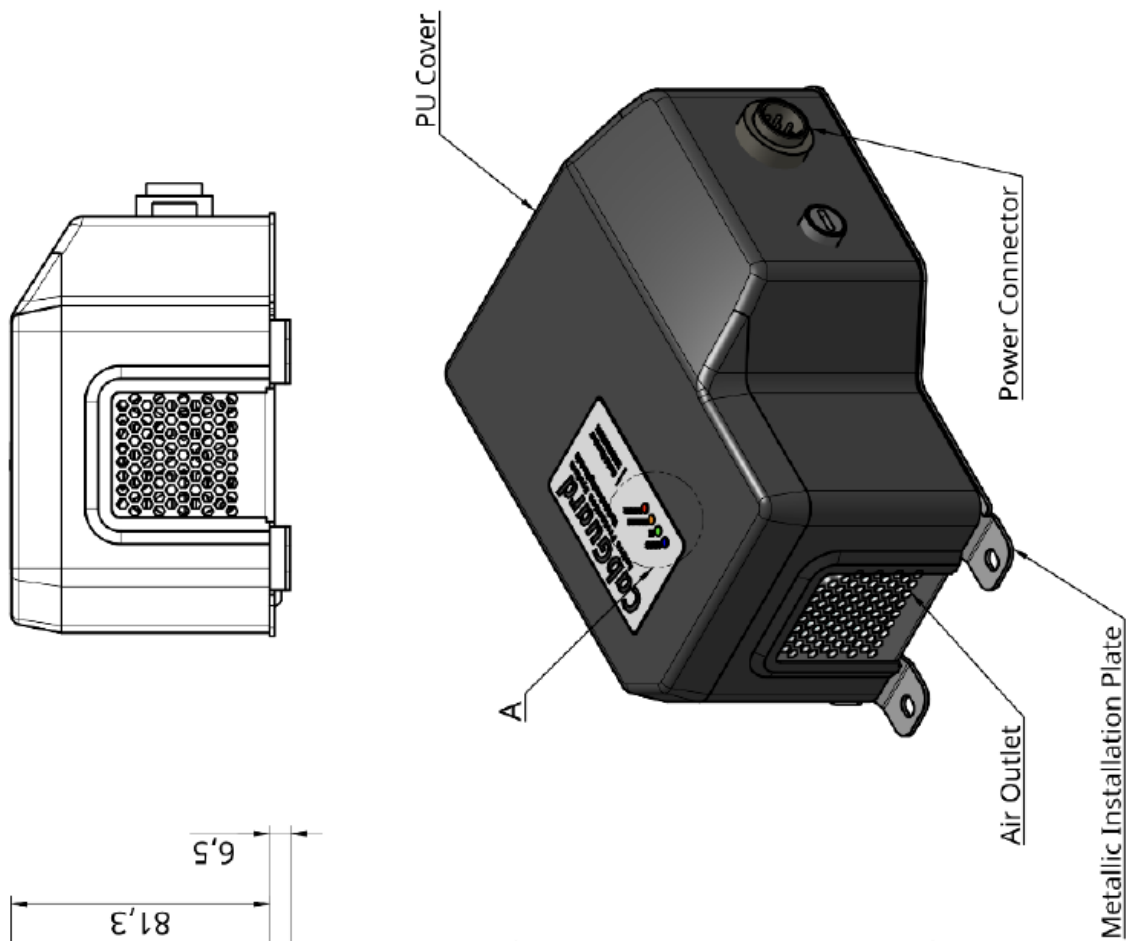## Sensors
- Particle Sensor
  MCERTS certified
  High accuracy laser scattering measurement
  Contamination resistant technology
- Pressure
- Temperature
- Humidity
- CO2
- VOC/VSC (Air Quality Index)
- Vibration

Sensor Specifications

Parameter	Working Principle	Range	Accuracy	Minimum Detection
Particulate Matter 0.5 (PM0.5)	Active Monitoring	0 to 3000 #/cm3	±100 #/cm3	1 #/cm3
Particulate Matter 1.0 (PM01.0	Active Monitoring	0 to 1000 μg/m3 0 to 3000 #/cm	±10 μg/m3 ±100 #/cm3	1 μg/m3 1 #/cm
Particulate Matter 2.5 (PM2.5)	Active Monitoring	0 to 1000 μg/m3 0 to 3000 #/cm	±10 μg/m3 ±100 #/cm3	1 μg/m3 1 #/cm3
Particulate Matter 4.0 (PM4.0)	Active Monitoring	0 to 1000 μg/m3 0 to 3000 #/cm	±25 μg/m3 ±250 #/cm3	1 μg/m3 1 #/cm3
Particulate Matter 10 (PM10)	Active Monitoring	0 to 1000 μg/m3 0 to 3000 #/cm	±25 μg/m3 ±250 #/cm3	1 μg/m3 1 #/cm3
Temerature	Active Monitoring	-40 to 125 °C	±0.2°C	-40°C
Humidity	Active Monitoring	0 to 100 %RH	±2%	0.1%
Pressure	Active Monitoring	0 to 1,100 hPa	±0.12 hPA	1 hPa
CO2 Sensing	Active Monitoring	0 to 40,000 ppm	±(40 ppm + 5%)	1 ppm
Air Quality Index (AQI)	Active Monitoring	0 to 500	±15	1
3-Axis Vibration	Active Monitoring	+/- 1 ~ 64g	+/- 0.01%	+/- 75 μg

CabGuard™
Active Cab Air Monitoring System

PU Cover

Power Connector

A

Metallic Installation Plate

Air Outlet

6,5

81,3

131

B

180

163

Ø5,6

2

B
1:1

Mounting Holes Dimensios

65

103

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Active Cab Air Monitoring System