



Halo Product FAQ UPDATE 1.22.19

What is Halo?

- HALO is an IoT IP Multi Sensor device with a patent pending. HALO has its own web browser for configuration of IP addressing, event notification and alarm thresholds. It also has a live view sensor status for monitoring.
- HALO can detect the following gasses with its multi-sensor array:
 - Whippets
 - Ethanol, Propanol, and Hydrogen levels
 - Ammonia (nitrous oxide)
 - Volatile organic compounds (glue solvents)
 - CO2
- The HALO provides Air Quality Monitoring
 - Detection of Vaping and Smoking
 - Detection of dangerous chemicals
 - Temperature and Humidity
- HALO has aggression detection and shot detection systems utilizing MEMS microphones. There is a light sensor, and, in the future, we will investigate correlating the gunshot detection with gun muzzle flash detection.

How does Halo Send Alerts?

- HALO provides any VMS a MJPEG stream which shows the current status/readings of its sensors. The stream is provided via a standard RTSP request. Each sensor in the system has the ability to set its alarm notification points.
- Alarm notifications are provided in several different ways:
 - VMS Event Integration
 - EMAIL/TEXT Notification
 - IO Trigger
- Currently Milestone XProtect is supported by HALO with Video Insight/Panasonic/Sentry VMS next up for integration. The XProtect Event Manager integration is able to discern the cause of the alarm and whether it is a set or reset of an alarm condition. Similarly, email/texts will provide the cause of the alarm and whether it is a set or reset condition.
- If the customer is going to take advantage of the MJPEG stream that HALO can output, then the customer will need a Milestone Device License, for each HALO, As Milestone “thinks” this input is a “camera”.

- If the customer is using HALO as ONLY a sensor, then no Milestone Device License is necessary, BUT, the customer would have NO VISUAL of HALO in their VMS Client software. Milestone would ONLY receive triggers which could invoke Rules created by an administrator. They COULD monitor The HALO activity SEPERATELY in a Web Browser, connecting to the embedded web page of HALO.
- They COULD however MONITOR HALO using an embedded webpage display in the Milestone Smart Client and “sneak” around the need for a Device License. This method would not provide recordings of the MJPEG stream.
- The only time a Milestone Device License is necessary is if the MJPEG stream is brought into the VMS for monitoring/recording.
- HALO also has two relays where an output can be set on an alarm condition. Of course, the cause of the alarm condition is not known if more than two sensors can generate an alarm.
- HALO integrates with Milestone using the Generic Events feature and does not require a device license.
- Halo can supply any VMS with a video stream of its LIVE View Sensor status. A VMS device license is required to display the live video.
- The HALO I/O’s are primarily for connection to Fire/Burg panels, not required for Milestone integration.

What are the technical aspects and mounting details of HALO?

- HALO is POE powered, and consumes approximately 5W with a Max of 7.5W. We are still testing this, and it could be closer to 3-4W when all is complete.
- HALO is recessing ceiling mounted and requires a 120mm hole in a ceiling panel or sheet rock.
- The coverage area is different for each sensor. The Vape Detector and Chemical Sensors are specified for a 12x12 room. Larger rooms/areas will require multiple HALO devices. We are still working on measuring the aggression and gunshot ranges.

Are all sensors always running or can you choose which you want to run?

- All the sensors readings appear on the display, but the user has to explicitly set limits for those sensors to create events. Effectively the same thing. However, I can see where the end customer does not want to bring other items to attention and might want the display turned off for a particular sensor. We can add this as a roadmap item.

How does it detect sound the demo unit does not show that on any of the readers?

- It has a detection microphones that is not recording conversations but decibel level readings. It is on the roadmap to show the audible levels on the demo screen with the other readings and should have shortly Q4. We have two MEMs microphones that analyze frequency and dB responses.

What does the email or text say or look like for the notification?

- This will be programmable by end user. Short messages like “Vape detected in Bathroom HS-5” would work best. We can set up branded alerts “Your A+ Halo detected vape in Bathroom HS-5” message itself will have the time stamp.

Is there different pricing they have a lot of bathrooms so do we lease with buy out option?

- Buy only right now. If they are just doing bathrooms and locker rooms pricing will be standard. They would likely see discounts on services for doing more sensors at one time also. Volume discounts would apply in larger quantities if they wanted in all classrooms, stairwells, etc.

What is the maintenance on the units does it have to be calibrated or anything every so often?

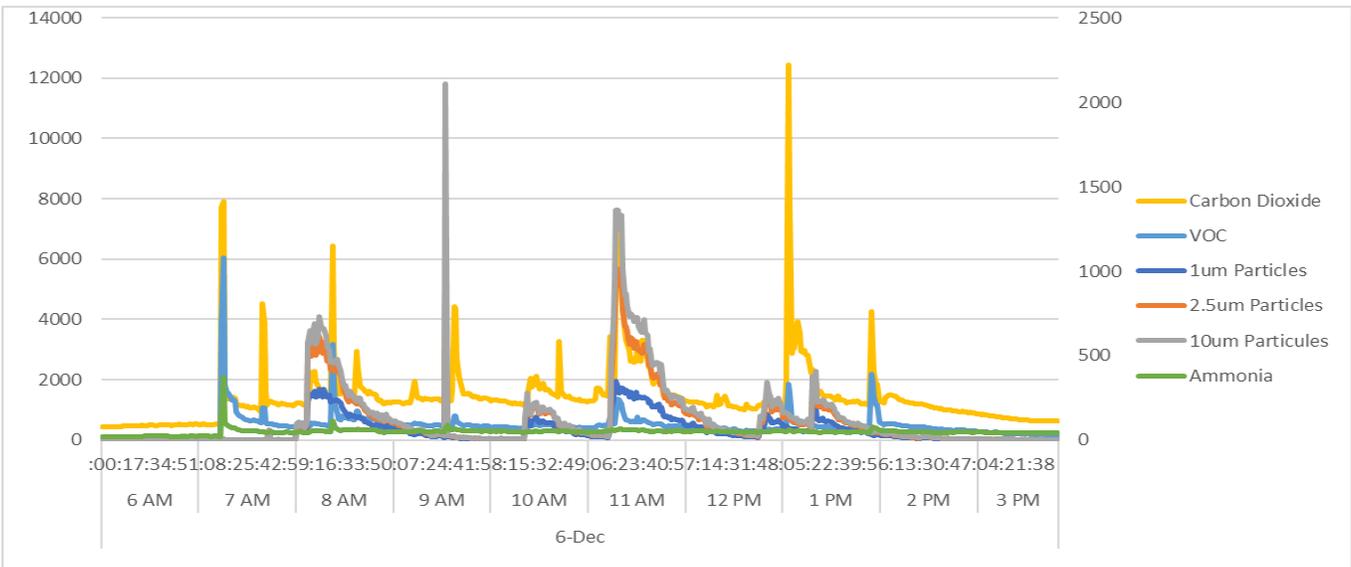
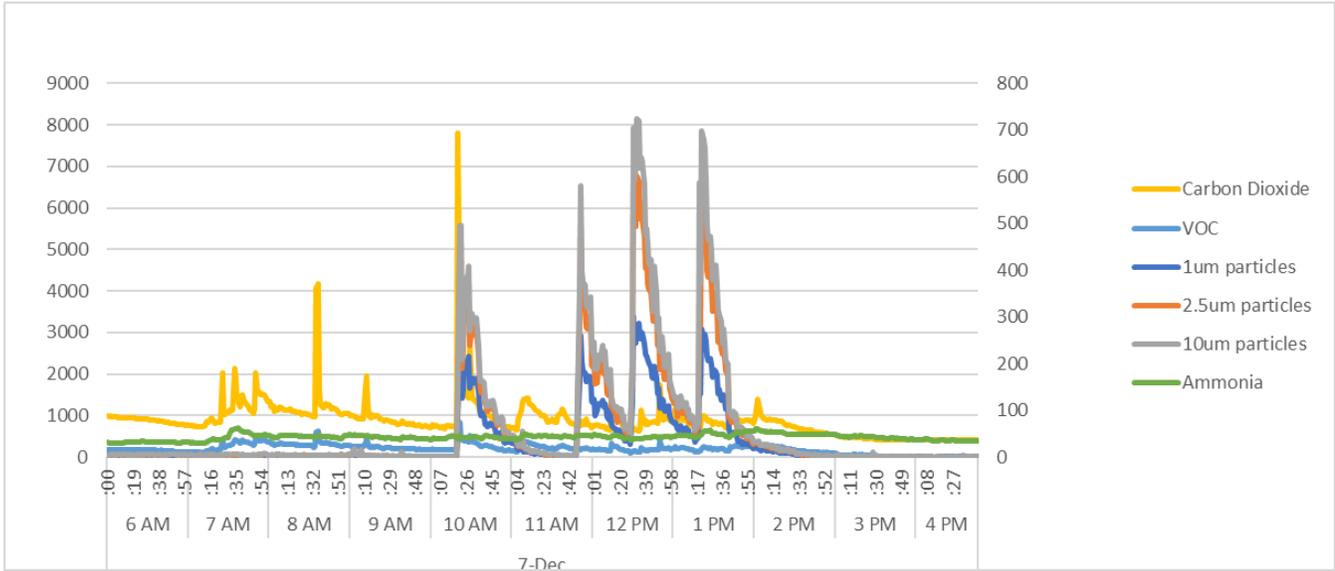
- We don’t know what we don’t know right now. The recommended outside cleaning/vacuuming for a smoke detector is every 6 months – we should follow this industry recommendation. There is a fan built into the unit that should also be cleaned and the casing will need to be taken off, we will provide the screwdriver in the boxes we ship; however, we don’t know yet if that should be annual like a computer fan maintenance or every 3 years. As far as calibration – end users will likely adjust detection levels from our original configurations based on sensitivity and as the device registers “normalcy” in the environment.

How is HALO different from other vape products like Fly Sense from a functional standpoint?

- HALO is a security product Not a web app. HALO does not come with a mandatory annual cloud fee.
- HALO has 11 built in sensors as compared to 2/3.
- Its design allows for more air flow thereby picking up greater particulates.
- HALO utilizes advanced analytics to eliminate false alarms by products like Febreze and Axe body spray
- HALO has built in Wi-Fi, Bluetooth and connections to your security monitor and video management software it does not require a separate application to monitor and respond to alerts.

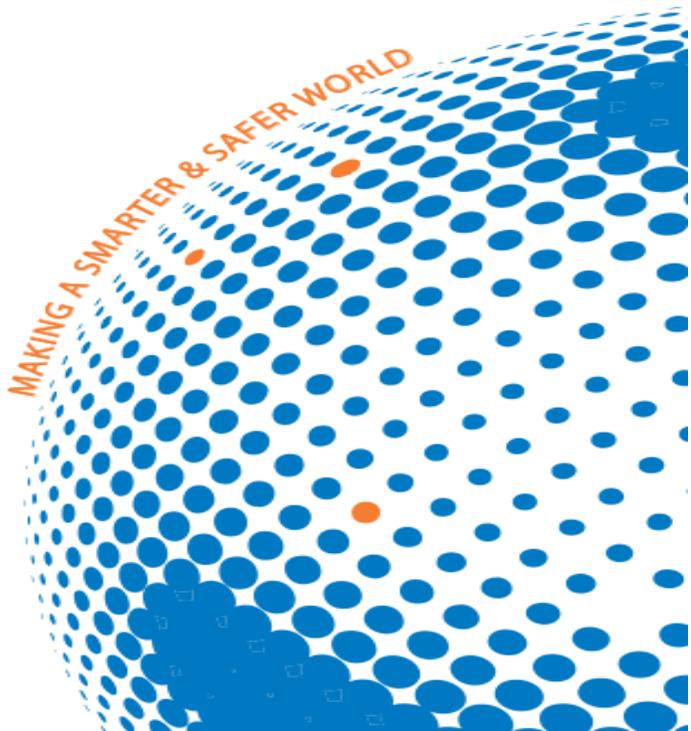
INTEGRATIONS	FUTURE RELEASES
Milestone VMS	Emergency Lighting Integration
Web Browser	Voice Analytics
Wireless	Breathing Detection
Blue Tooth	Motion Detection
Text and Email Alerts	UL approval
Colored LEDs for alerts	Remote Sensor integration
Roadmap: Sentry/Panasonic VMS	Cloud Based program for multi-sensor management
Roadmap: NU LEDS POE Lighting	
Roadmap: Axxonsoft VMS	
Roadmap: Gallagher Door Access	

Sample Readings



HALO IOT MULTI SENSORS

AUDIO ANALYTICS	AIR QUALITY	CHEMICAL	LIGHT	ENVIRONMENTAL
Gun shot detection	Vape	Ammonia	Occupancy	Temperature
Glass Break	Smoke	Oxidizers	Sensitivity	Humidity
Shouting	Volatile Organic Compounds	Methane	Roadmap: Motion	
Excessive Banging	Formaldehyde	Propane	Roadmap: Breathing	
Occupancy	Benzene	Natural Gas		
Roadmap: Voice Analytics		Carbon Monoxide		
		Carbon Dioxide		
		Glues		



Interface Specifications

Live Image Resolution	1024 x 768
Frame Rate	1 FPS
Video Compression	MJPEG
Audio	MEMS Microphones (2)
Relays Outputs	2, Normally Open or Closed, 48VDC at 1 amp
VMS Integrations	Milestone, Panasonic, Axxonsoft
Status Light	Alarm Condition (optional), Error, Sensor Life

Network Specifications

Ethernet	RJ-45 (10/100 Base-T)
Alarm Triggers	Particulates, CO2 Equivalents, Total Volatile Organic Compounds, Carbon Monoxide, Oxidizing Agents, Ethanol, Ammonia, Temperature/Humidity, Light Level, Sound Levels
Protocols	TCP/IP, UDP, IPv4/v6, HTTP, HTTPS, FRP, UPnP, RTP, RTSP, DHCP, ARP, Bonjour
Maximum Users Connections	Live MJPEG Stream, 8 Users

General Specifications

Operating Temperature	32°F - 122°F (0°C - 50°C)
Operating Humidity	0 to 90% Relative Humidity (non-condensing)
Power Supply	PoE (IEEE 802.3af Class 3 Compliance) 80 mA (TBD)
Dimensions	5.65" x 3.00" (143.8mm x 76.10mm)
Weight	0.8 lbs (0.365 kgs)
Mounting Options	Ceiling Flush Mount, Surface Mount (optional)

