# gumband PS001 Presence Sensor User Guide

**gumband PS001 Presence Sensor**

**Contents**

## Overview

### Introduction

Gum band's Presence Sensor will let you and your team capture real-time engagement data for your in-person spaces and experiences.

The unit is powered by a privacy-centric sensor using 60 GHz mm Wave radar, with on-board processing for dwell tracking and interface control. This sensor allows for maximum simultaneous tracking of 20 people in a space, with up to a 6 m x 6 m tracking area and 120° field of view (FoV).

Power over Ethernet (PoE) enables a single cable solution for power and data, as well as live data visualization over a network connection.

## Specifications

### Electrical

| | |
|---|---|
| PoE PD Compliance | IEEE 802.3af |
| PoE Mode | Mode B |
| Voltage | 36–57 VDC |
| Power Consumption | Avg. 5.50 W / Max. 7.0 W |
| Cable Requirements | Shielded twisted pair |
| Safety Standard | UL/c-UL/EN/CB 62368-1 |

### Environmental

| | |
|---|---|
| Operating Temperature | -10°C to 60°C |
| Relative Humidity | 25% to 80% (Non-Condensing) |
| Vibration | TBD † |

† This is not a sensor shock endurance rating. Output data integrity is impacted by vibration events in excess of

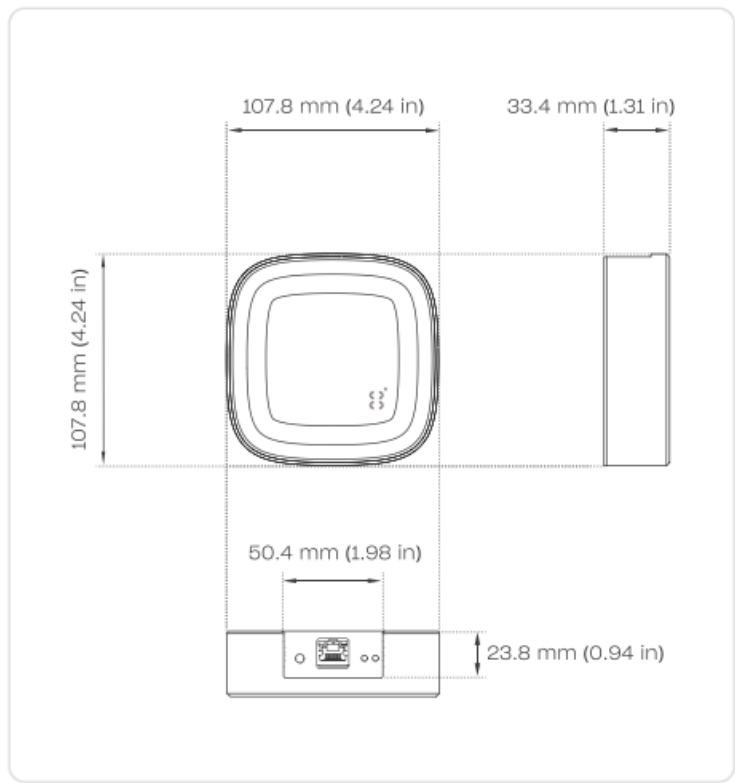this rating during operation.

**Network**

| IPv4 | DHCP or Static † |
| --- | --- |
| Ports | 1883/8883 and 80/443 ‡ |
| Max. Throughput | 2 Mbps § |

† Default is DHCP but configurable to use Static.
‡ MQTT is the primary protocol, HTTP ports only used for updates.
§ Network traffic is highly dependent on activity within the field of view of the sensor, typical data is <10 Kbps.
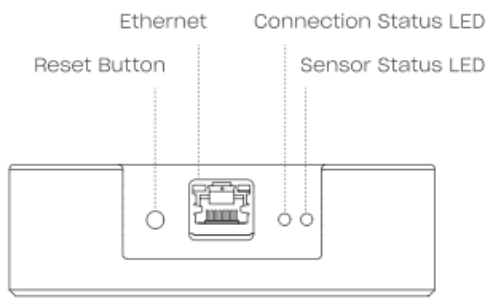
**Material**

| Housing | 6061 T6 Aluminum |
| --- | --- |
| Radome / Faceplate | ABS |
| Weight | 370 g (13.05 oz) |

**Dimensions**



**Inputs/Outputs**

Ethernet   Connection Status LED
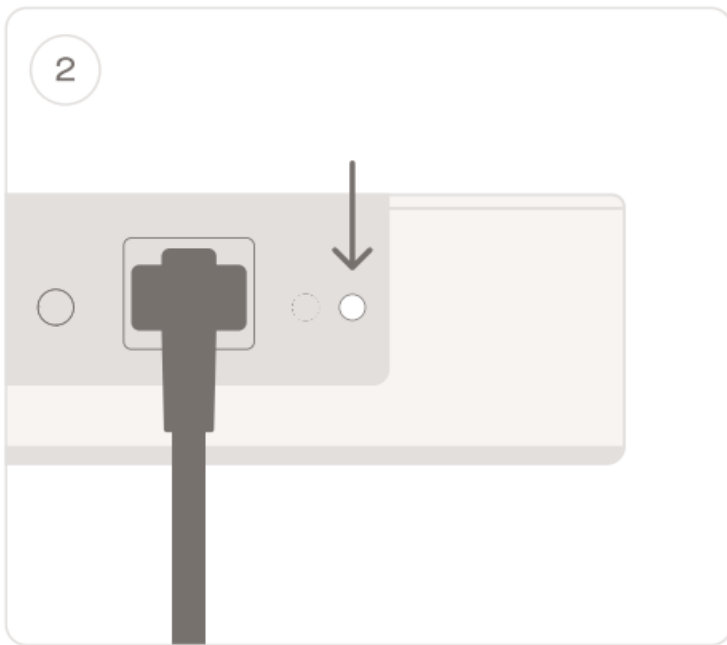
Reset Button   Sensor Status LED

**Setup**

1. Log in to the Gum band platform at **app.gumband.com** and follow the on screen instructions to connect your device to your exhibit.
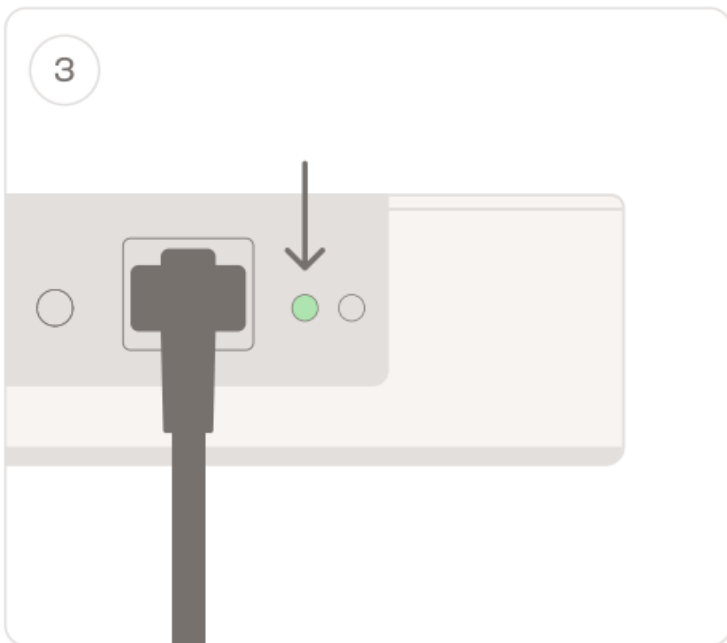


2. The sensor status LED will illuminate solid white once the device has booted and the radar is enabled.

Please see our troubleshooting guide if the sensor status LED displays another color or pattern.

3. The connection status LED will slowly pulse green once the device is connected to the Gum band Cloud.
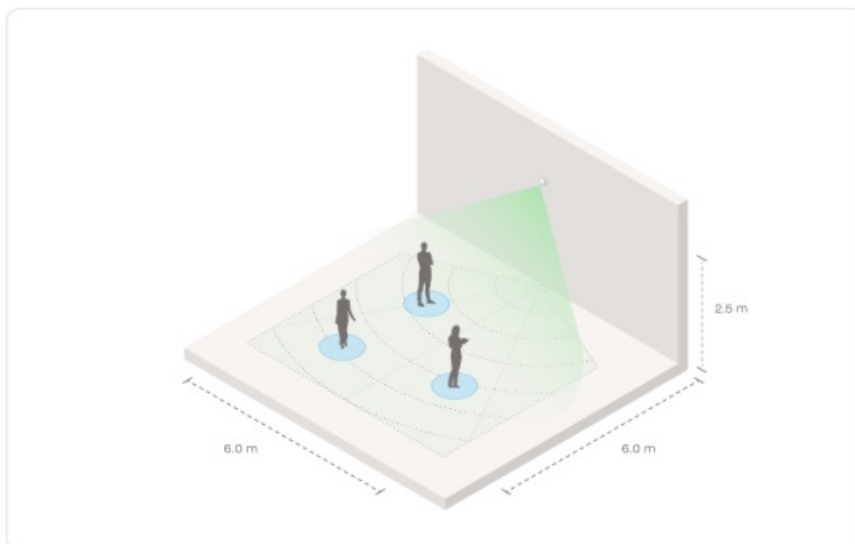


Please see our troubleshooting guide if the connection status LED displays another color or pattern.

4. The sensor will automatically begin streaming data once these steps have been completed successfully.
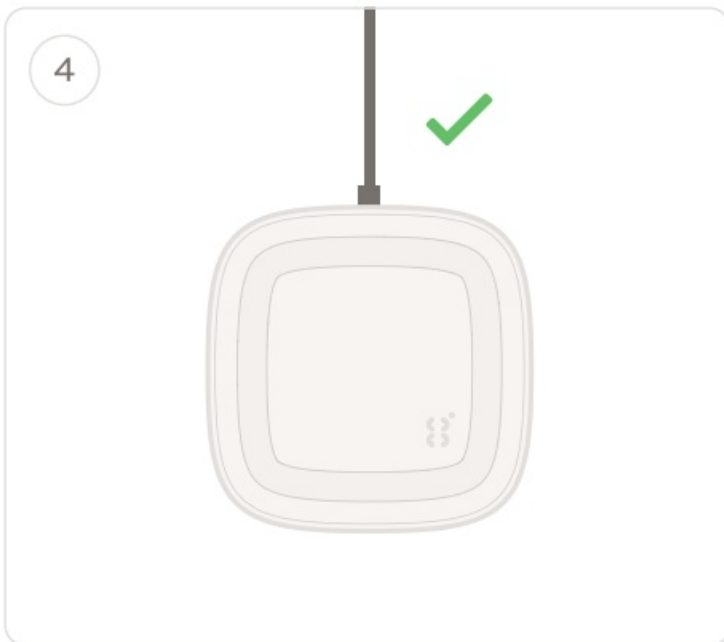
## Placement



## Instructions

The sensor must be mounted rigidly to a solid structure in order to prevent excess vibrations that can negatively impact data quality.

The ideal mounting height for the unit is approximately 2.5 meters (8 feet) above the floor. This height helps prevent individuals in the foreground from blocking the field of view (FoV), while providing optimal signal strength and coverage area. While the unit can function when mounted at other heights, coverage area and sensitivity may be reduced.

There is a single 1/4"-20 threaded hole on the center of the rear of the unit (standard camera tripod mount).

## Mounting Specifications

| | |
|---|---|
| FoV | 120° |
| Coverage Area | 6.0 m x 6.0 m (19.5 ft x 19.5 ft) |
| Angle | ~20° (+/–10°) † |
| Orientation | Cable up or cable down † |
| Height | 2.5 m (8 ft) ‡ |

† The unit will auto configure itself for its orientation and will report an error if the orientation is invalid (see troubleshooting section).
‡ If the mounting height is other than recommended it should be reconfigured via the device dashboard at **app.gumband.com**.

**Placement**

**Object Interference**

While the sensor is generally resilient to signal noise from nearby stationary objects, minimizing objects within the field of view (FoV) will minimize interference.

Objects that may cause the most interference include:

- Objects that may partially/fully occlude individuals;
- Moving objects, such as sliding doors and fans;
- Objects with highly reflective surfaces, such as large metal objects.
- Objects suspended from the ceiling, such as ducts, wire trays, speakers, and sprinklers.
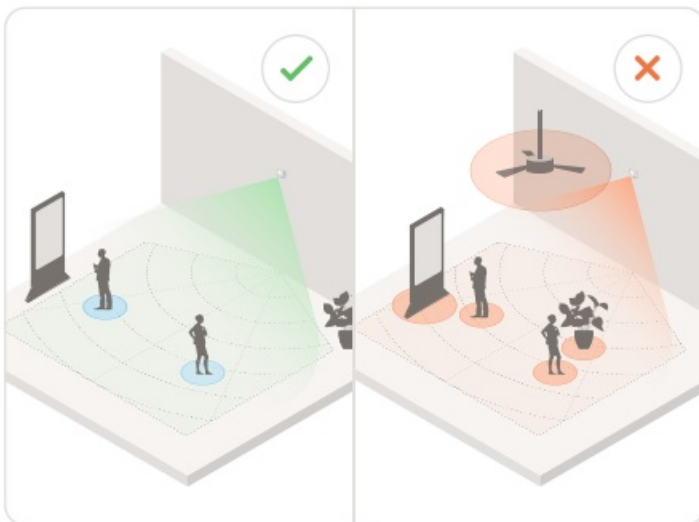


**Entry & Exit**

To optimize data capture, minimize the areas in which individuals may stand or move along the edge of the FoV, where they might frequently transition in and out of the detection range.

Designing set entry and exit points or mounting the sensor in a location that takes advantage of existing barriers, such as in a corner, can prevent access to edge areas and blind spots.
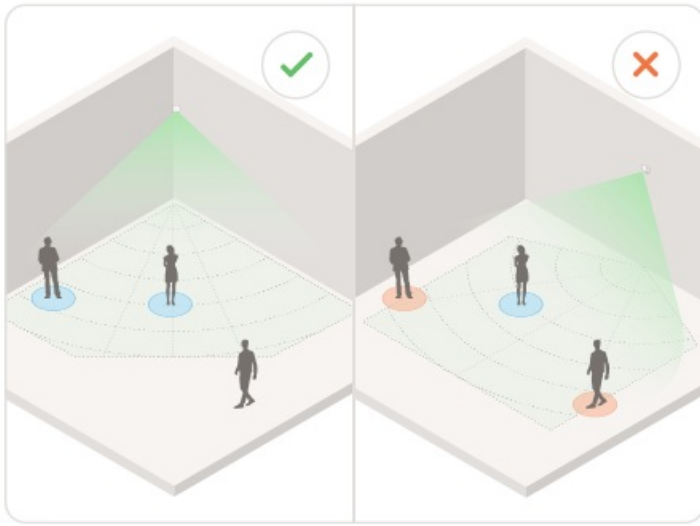
## Multi-Device Interference

Interference may occur when two or more devices are in close proximity, leading to reduced signal strength and overall diminished performance. To optimize sensor performance, avoid overlapping fields of view and minimize the number of co-located devices.
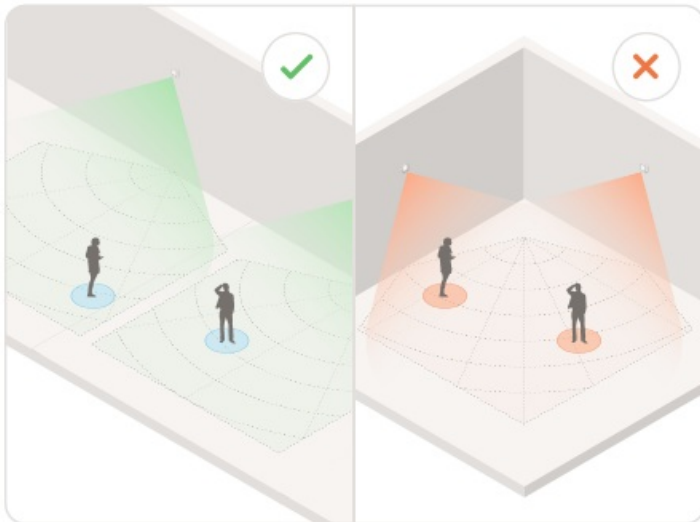


# Troubleshooting

## Device Status

The unit includes two status LEDs, next to the Ethernet connection port and opposite the reset button.

If neither the sensor status LED nor the Ethernet connector LED is illuminated, the device is not receiving power. In this case, verify that the wired network connection is a valid Power over Ethernet (PoE) connection.

In the event of a system or sensor error, component logs available on the Gum band platform will provide detailed information about the specific failure.

## Status LEDs
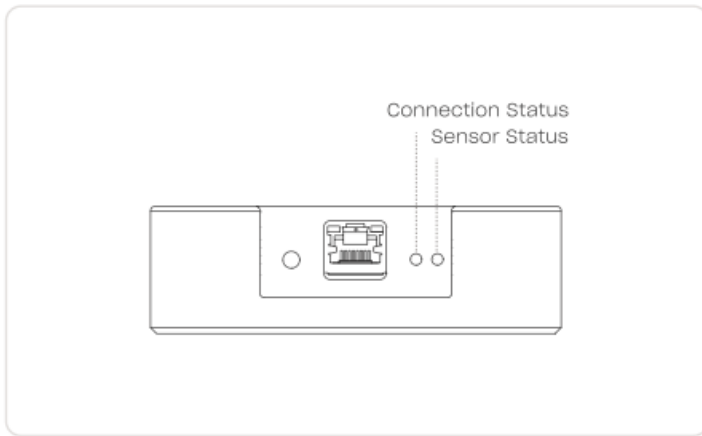
## Sensor Status LED Messages

| | |
|---|---|
| ○ Solid White | Sensor configured and running |
| ● Off | Sensor configuration failed |
| ● Blinking Red | Sensor error |
| ● Blinking Blue | Excess motion or vibration |
| ● Blinking Orange | Mounted in incorrect orientation |

## Connection Status LED Messages

| | |
|---|---|
| ◉ Pulsing Green | Server connected |
| ◉ Pulsing Orange | Server disconnected |
| ◉ Pulsing Magenta | Network disconnected or no IP assigned |
| ● Blinking Red | System error |

## FCC Statement

FC **FCC ID:** 2BL2J-PS001
**Model:** PS01

Deep local
1601 Mary's Ave
Suite 3G
Sharpsburg, PA
15215

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**CAUTION:** Changes or modifications not expressly approved could void your authority to use this equipment.

**IC ID: 33216-PS001**

This device complies with Innovation, Science and Economic Development Canada's license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

**RF Exposure Notice**

To ensure compliance with FCC and ISED RF exposure requirements this device must be installed to provide a minimum of 20cm between the device and people.

## Customer Support

For additional information, please see our sensor troubleshooting guide at **docs.gumband.com**
**gumband.com**

Innovation, Science and Economic Development Canada

gumband

## Documents / Resources

| | |
|---|---|
| gumband<br>User Guide<br> | **gumband PS001 Presence Sensor** [pdf] User Guide<br>PS001, PS001 Presence Sensor, Presence Sensor, Sensor |

## References

- **User Manual**