2025

GRYDSENSE PEOPLE COUNTER

TECHNICAL SPECIFICATION

Revision History

Sl #	Change Description	Version	Date
1	Initial Draft	0.1	25th Oct, 2023
2		0.2	11th Feb, 2025

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Overview

PEOPLE-COUNTER, a state-of-the-art people counting sensor designed for top-notch person detection, tracking, and counting with unparalleled precision. Harnessing the combined strength of AI and 3D point cloud data, it can distinguish between humans and non-human objects with an impressive 99.8% accuracy, ensuring you get only the most reliable data. It seamlessly captures 3D point cloud data, allowing for anonymous detection and tracking of people's movements in and out of an area. And, with its simplistic, real-time processing and low-complexity AI-powered algorithm, it can handle high flows of people at an impressive 30 FPS execution on edge. All this data is effortlessly transmitted to the cloud via a gateway.

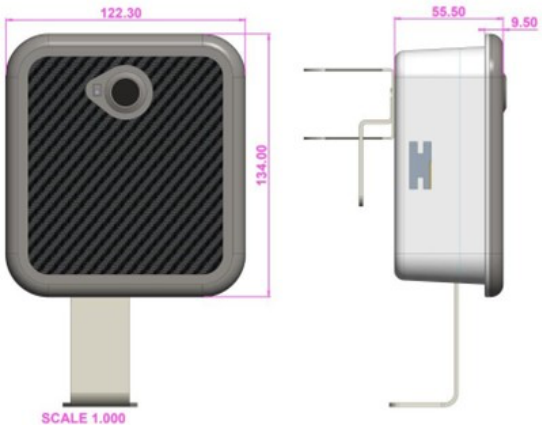


Figure 2 People counter dimensions

Figure 1 People Counter Sensor

Features

- Unparalleled Precision – 99.8% accuracy
- Bi-directional counting capabilities
- Accommodates individuals making U-turns
- Counts individuals regardless of accessories like bags, hats, or caps
- Utilizes Time of Flight (TOF) technology
- Expansive coverage due to a wide Field of View (FOV)
- TOF enables to performs optimally in dim or dark environments
- Count the people's flow anonymously
- Efficient Power over Ethernet using a POE-splitter
- Plug-and-play with little to no setup needed for standard operations.
- Multiple ceiling-mount methods available
- People counting sensors with edge processing

Power

- Supply voltage +9V to +19V DC Input 3A

Environment

- Ambient temperature operating range: 0°C - 50°C
- Relative humidity: less than 90% non-condensing
- For indoor use only

Compliance

- ANSI C137.4-2019
- IEC 62386
- CE Certified
- RoHS Compliant
- IP rating - IP22

Models Available

- GRYD-DRE-WH-SQ-POE
- GRYD-DRE-WH-SQ-WF

Technical Specification

PCL – Derived from TOF

- TOF FOV – 90(H) 68(V)
- TOF Beam – Invisible
- ToF resolution - 640x480
- Operating Range – 8ft to 12ft (from ground)
- TOF Sensor has Eye Safety Certification

Edge Device – Nvidia's Jetson nano

- GPU – 128-core GPU (Maxwell GPU)
- CPU – ARM® Cortex® -A57 MPCore (Quad-Core) Processor with NEON Technology
- Memory - Peak Bandwidth: 25.6 GB/s | Memory Capacity: 4GB
- Storage - eMMC 5.1 Flash Storage | Storage Capacity: 16GB
- Networking- 10/100/1000 BASE-T Ethernet

ToF Technology Specification

Basic Principles

3D time-of-flight (TOF) cameras illuminate an object or a scene with a modulated light source and observe the light reflected from the object. This is achieved via a laser diode illuminator and a receiver. The phase shift between the emitted light and reflected light is measured and translated to distance. TOF camera can measure an object's distance by pixel unit.

- By default, operating range of TOF Sensor – 0~3m (from sensor)
- Area Coverage – Monitored by TOF Sensor
- Operating Zone – The default resolution of the TOF is 640x480.

People Counter Coverage

- At an installation height of 8ft, it covers approximately 172.67 square ft.
- The coverage area may vary based on installation height.

Table: Coverage area based on installation height

Installation Height (Ft)	Coverage (Sq. Ft)
8	172.67
8.5	194.93
9	218.54
9.5	243.50
10	269.80
11	326.46
12	388.52

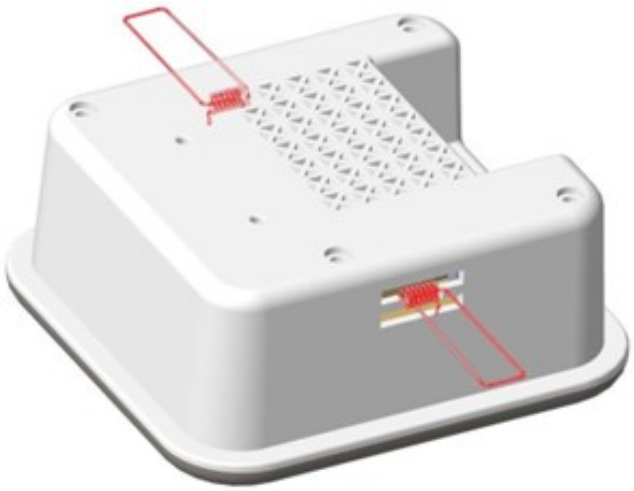
Product Mounting

- Mounting Option 1 -

- Mounting Option 3 -

- Mounting Option 2 –

- Mounting Option 4 –



System Diagram

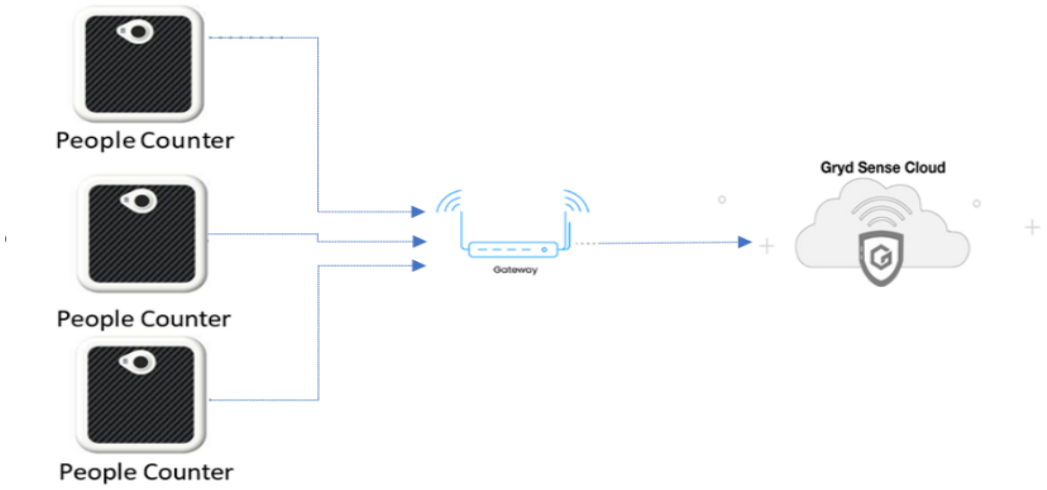


Figure 3 System Diagram

Compliance Statements

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including, an interference that may cause undesired operation.

Caution Statements

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your bod