

AI ToF People Counting Sensor

Featuring LoRaWAN®

VS133

Milesight



VS133 is a sensor that uses second-generation ToF technology to accurately count people. This technology provides more precise depth maps and longer detection distances while maintaining an excellent privacy protection. The advanced ToF technology combined with an AI algorithm enables the sensor to handle complex scenes and distinguish non-human objects with up to 99.8% accuracy.

Combining with Milesight LoRaWAN® gateway and Milesight IoT Cloud solution, users can manage all sensor data remotely and visually. With easy installation and automatic detection of installation height, the VS133 is ideal for entrances or corridors in retail stores, malls, offices, subways, and other locations.

◆ Features

- Up to 99.8% accuracy combining the 2nd generation ToF technology and AI algorithm
- Working well even in low-light or completely dark environments with great lighting adaptability
- Compliant with GDPR without images collected, free from privacy concerns
- Allow to collect people counting data by differentiating between children and adults and detecting staffs via identification features for clearer people analysis
- Smart U-turn detection to filter redundant counting of people wandering in the area
- Support queuing management via dwell time detection and regional people counting
- Support Group Counting function that based on the distance, moving direction, and speed difference to gain deeper insights into customers' behaviors

- Wider field angle to obtain longer-distance depth maps and cover a larger area
- Automatically detect the optimal installation height, facilitating fast deployment and intelligent detection
- Support both motion and dwell time heat map for anonymous customer tracking
- Support advanced Heat Map function which provides deeper insights by visually representing the distribution and intensity of foot traffic
- Support local data storage and data retransmission to collect data securely
- Easy configuration via Wi-Fi for web GUI configuration
- Function well with standard LoRaWAN® gateways and network servers
- Quick and easy management with Milesight IoT Cloud

◆ Specifications

People Counting	
ToF FoV	98 ° Horizontal, 80 ° Vertical
ToF Light Beam	940nm (Invisible)
Measuring Accuracy	< 3.5cm
Detection Range	0.5 to 3.5 m
Installation Height	≤ 3.5m
Recognition Rate	Up to 99.8%
Advanced Function	
Bi-Directional People Counting	Up to 4 counting lines for bi-directional people counting
U-turns Filtering	Filter redundant counting of people wandering in the bi-directional people counting areas
Regional People Counting & Dwell Time Detection	Up to 4 detection areas (up to 10 sides for each area) for regional people counting and dwell time detection
Group Counting	Support
Children/Adults Differentiation	Support
Staff Detection	Support
Occlusion Detection	Support
Heat Map	Motion Heat Map, Dwell Heat Map
Data Retransmission	Support 4000 data retransmission packets
Wireless Transmission	
Protocol	LoRaWAN®
Antenna	Internal Antenna
Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
Tx Power	16 dBm (868 MHz)/20 dBm (915 MHz)/19 dBm (470 MHz)

Sensitivity	-137 dBm @300bps
Mode	OTAA/ABP Class C
Other Interfaces	
Wi-Fi	IEEE 802.11 b/g/n, 2.4GHz (AP Mode for configuration)
Button	1 × Wi-Fi/Reset Button
LED Indicators	1 × RGB LED Indicator
Power Input	1 × DC Jack Connector
Physical Characteristics	
Local Storage	Store up to one million data records and supports to export csv file
Power Supply	12VDC / 2A
Power Consumption	Typical 7.8 W, max 22.2 W
Operating Temperature	-20°C ~ +50°C
Relative Humidity	0 ~ 95% (Non-condensing)
Ingress Protection	IP40
Dimension	180 × 26 × 72 mm
Housing&Color	PC + Aluminium alloy, White
Weight	226g
Installation	Ceiling Mounting, Extended Ceiling Mounting & Lintel Mounting (with Optional Multifunctional Bracket)
Approvals	
Regulatory	CE, FCC, ISED, GDPR
Environmental	RoHS

◆ Monitored Area

Installation Height (m)	Monitored Area ¹ (m)	Detection Area ² (m)
2.5	5.75 × 4.20	1.84 × 1.34
2.6	5.98 × 4.36	2.07 × 1.51
2.7	6.21 × 4.53	2.30 × 1.68
2.8	6.44 × 4.70	2.53 × 1.85
2.9	6.67 × 4.87	2.76 × 2.01
3.0	6.90 × 5.03	2.99 × 2.18
3.1	7.13 × 5.20	3.22 × 2.35
3.2	7.36 × 5.37	3.45 × 2.52
3.3	7.59 × 5.54	3.68 × 2.69
3.4	7.82 × 5.71	3.91 × 2.85

3.5	8.05 × 5.87	4.14 × 3.02
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¹**Monitored area:** The range visible to the device (FOV), which is displayed on the live view.

²**Detection area:** The range within the monitored area where the device can detect changes in the number of people.

◆ Dimensions (mm)

