Ultra ToF People Counter

VS135

VS135 is a high-end people counting sensor that is based on deep learning AI and second-generation ToF technology. It is capable of adapting to various complex scenarios while ensuring excellent privacy protection. This sensor possesses an impressive accuracy of up to 99.8% in people counting, fully meeting your needs, and it delivers exceptional performance for both indoor and outdoor applications. With high ceiling mounting of up to 6.5m and an IP65 waterproof rating, it adapts seamlessly to any environment.

VS135 offers various connectivity options (LoRaWAN®, Wi-Fi HaLow, Cellular and Ethernet) for seamless connectivity and efficient space management across applications. Additionally, the AP mode Wi-Fi simplifies device configuration. Additionally, it provides rich interfaces for versatile connection options, expanding the possibilities for integration and customization.

◆ Features

Highly-efficient Sensing Ability

- Up to 99.8% accuracy with the 2nd generation ToF technology and AI algorithm.
- Free from privacy concerns without image capturing.
- Allow to collect more accurate people counting data by differentiating children / adults and detecting staffs via identification like staff lanyards 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 to gain deeper insights into customers' behaviors.
- Support Multi-Device Stitching which enables the linking of multiple devices, allowing for up to four-device stitching to expand coverage. *(For PoE Version)*
- Support advanced Heat Map function which provides deeper insights by visually representing the distribution and intensity of foot traffic. *(For PoE Version, Cellular Version and WiFi HaLow Version)*
- With radar sensor based ESG friendly working mode, it allows to experience full-speed operation when detection people occupied while switching to a power-saving sleep mode when unoccupied.
- By incorporating 3-axis sensors for automatic compensation when the device is mounted at a tilt, ensures enhanced precision and guarantees accurate data analysis.
- Working well even in low-light or completely dark environments with great lighting adaptability.
- Automatically detect the installation height, facilitating fast deployment and intelligent detection.
- Support video validation function to help customers verify statistical accuracy.

Rich Connectivity Options

- Provide multiple connectivity options (Ethernet, Cellular, Wi-Fi HaLow, LoRaWAN®).
- Easy web GUI configuration via Wi-Fi.
- Milesight DeviceHub & Developer Platform provide easy and centralized management of remote devices.
- Support local data storage and data retransmission to collect data securely.
- Support HTTP(s)/MQTT(s)/CGI for easily integration. *(For PoE Version, Cellular Version and WiFi HaLow Version)*
- Equip with Alarm I/O. *(For PoE Version)*
- Function well with standard LoRaWAN® gateways and network servers. *(For LoRaWAN® Version)*
- Quick and easy management with Milesight IoT Cloud. *(For LoRaWAN® Version)*

◆ Specifications

Version	**PoE Version**	**Cellular Version**	**WiFi HaLow Version**	**LoRaWAN® Version**
Model Name	**VS135-P**	**VS135-L08EU**	**VS135-HL-xxxM**	**VS135-xxxM**
Sensor				
ToF FoV	Standard Version: 98° Horizontal, 80° Vertical High Ceiling Mount: 60° Horizontal, 45° Vertical			
ToF Light Beam	940nm (Invisible)			
Measuring Accuracy	Standard Version: ≤ 3.5cm High Ceiling Mount: ≤ 6.5cm			
Detection Range	Standard Version: 0.5 ~ 3.5m High Ceiling Mount: 2~ 6.5m			

Recognition Rate	Up to 99.8%	
Installation Height	Standard Version: ≤ 3.5m High Ceiling Mount: ≤ 6.5m	
Luminous Mode	Auto / Always On	
Advanced Function		
Bi-Directional People Counting	Up to 4 detection 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 decagon for each area) for regional people counting and dwell time detection	
Group Counting	Support	
Children/Adults Differentiation	Support	
Staff Detection	Support	
Heat Map	Motion Heat Map, Dwell Heat Map	-
Multi-Device Stitching	Up to 4 devices stitching to expand coverage	-
Data Retransmission	Support 8 x 50000 data retransmission packets	-
Video Validation	Support 1 channel video validation (the duration of 4 hours)	
Data Transmission		
VS135-P		
Ethernet Port	1 × RJ45 10/100 Mbps (PoE PD)	
Network Protocol	HTTP, HTTPS, MQTT, MQTTS, NTP, etc.	
VS135-L08EU		
Frequency Band	LTE (CAT 4): B1/B3/B7/B8/B20/B28 WCDMA: B1/B8 GSM: B3/B8	
SIM Slot	1 x Nano SIM (4FF) Slot	
Network Protocol	HTTP, HTTPS, MQTT, MQTTS, NTP, etc.	
VS135-HL-868M/915M		
Standard & Mode	IEEE 802.11ah, STA Mode	
Frequency	863.5~867.5 MHz/902.5~927.5 MHz	
Network Protocol	HTTP, HTTPS, MQTT, MQTTS, NTP, etc.	
VS135-470M/868M/915M		
Protocol	LoRaWAN®	
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		
Power Input	1 × DC Jack Connector	
Alarm I/O	1/1	-
Wi-Fi	IEEE 802.11 b/g/n, 2.4GHz (AP Mode for configuration)	
Button	1 × Reset/Wi-Fi Button	
LED Indicators	1 × RGB LED indicator	
Physical Characteristics		
Local Storage	Store up to one million data records and supports to export csv file	
Power Supply	802.3at PoE+ or DC 12V/2A	DC 12V/2A
Operating Temperature	-20°C ~50°C	
Relative Humidity	0 ~ 95% (Non-condensing)	
Ingress Protection	IP65	
Dimension	200 x 35 x 85 mm (7.87 x 1.38 x 3.35 in)	
Color	White or Black (Optional)	
Installation	Ceiling Mounting, Extended Ceiling Mounting & Lintel Mounting (with Optional Multifunctional Bracket)	

◆ Monitored Area

Standard Version:

Installation Height (m)	Monitored Area (m)	Detection Area(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

High Ceiling Mount:

Installation Height (m)	Monitored Area (m)	Detection Area(m)
3.5	4.04 x 2.90	2.08 x 1.49
3.7	4.27 x 3.07	2.31 x 1.66
3.9	4.50 x 3.23	2.54 x 1.82
4.1	4.73 x 3.40	2.77 x 1.99
4.3	4.97 x 3.56	3.00 x 2.15
4.5	5.20 x 3.73	3.23 x 2.32
4.7	5.43 x 3.89	3.46 x 2.49
4.9	5.66 x 4.06	3.70x 2.65
5.1	5.89 x 4.22	3.93 x 2.82
5.3	6.12 x 4.39	4.16 x 2.98
5.5	6.35 x 4.56	4.39 x 3.15
5.7	6.35 x 4.72	4.62 x 3.31
5.9	6.81 x 4.89	4.85 x 3.48
6.1	7.04 x 5.05	5.08 x 3.65
6.3	7.27 x 5.22	5.31 x 3.81
6.5	7.51 x 5.38	5.54 x 3.98

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