

AI Work place Occupancy Sensor

Featuring LoRaWAN

KVS121



Kled KVS121, based on Artificial Intelligence (AI) technology, is an AI workplace sensor designed to monitor occupancy & utilization in modern workspace, which can reach up to 98% recognition rate. Only counter values are transmitted over LoRaWAN[®] network, which can prevent the privacy concerns. Based on standard LoRaWAN[®] protocol, KVS121 can work with Kled LoRaWAN[®] gateway and mainstream LoRaWAN[®] network servers. With easy installation, KVS121 sensor has great use in shops, malls, offices, exhibitions, etc.

Kled KVS121 sensors are equipped with Wi-Fi for easy configuration without any configuration tools.

◆ Features

- Recognition rate is up to 98% based on advanced AI identification and analysis technology
- Support up to 16 mapped regions for detection
- No image data is collected, free from privacy concerns
- Equipped with Wi-Fi for web GUI configuration
- Support Kled D2D protocol to enable ultra-low latency and directly control without gateway
- Function well with standard LoRaWAN[®] gateways and network servers

◆ Applications

- Determine the number of people in specific areas
- Flow detection in shops and malls
- Occupancy detection in offices

◆ Specifications

LoRaWAN	
Protocol	LoRaWAN®
Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923
Tx Power	16 dBm (868 MHz)/20 dBm (915 MHz)/19 dBm (470 MHz)
Sensitivity	-137 dBm @300bps
Mode	OTAA/ABP Class C
People Counting	
Field of View	190 ° Horizontal, 112 ° Vertical
Recognition Range	Based on a radius of 5 meters (At the height of 3m)
Recognition Rate	Region counting: 95% Line crossing counting: 98%
Advanced Custom Setting	Up to 16 mapped regions for detection, D2D Controller
Interface	
Wi-Fi	IEEE 802.11 b/g/n, 2.4GHz, only support configuration
Button	1 × Reset Button, 1 × Wi-Fi Button
LED Indicators	1 × Wi-Fi
Power Input	1 × Type-C
Physical Characteristics	
Power Supply	5V / 1.5A by Type-C Port
Operating Temperature	-5°C ~ +55°C
Storage Temperature	-20°C ~ +60°C
Relative Humidity	0 ~ 95% (Non-condensing)
Color&Weight	Black/White (Optional), 126.9g
Dimension	85 × 85 × 20 mm (3.35 × 3.35 × 0.79 in)
Installation	Ceiling Mounting
Approvals	
Regulatory	CE, FCC, RoHS

◆ Installation Height

To better utilize the advantage of AI algorithm, it's recommended to follow the below installation heights:

Object	Height	Note
Sitting object	>2.5 m (8.2ft)	Commonly used for region people counting
Standing object	> 3 m (9.8ft) (the optimum height is 3m)	Commonly used for line cross counting

The whole detection range of KVS121 is about 78 m² (based on R=5m) when the installation height is 3m. However, it's recommended to refer to below detection ranges for region people counting at different heights for accurate recognition:

Installation Height (m)	Detection Range (m)
2.5	3.0 × 4.0
3.0	4.4 × 5.7
3.5	4.9 × 6.4
4.0	5.6 × 7.4