深圳市易探科技有限公司
Shenzhen EasyDetek Technology Co.,Ltd

EasyDetek易探

24GHz Human Presence Sensor

EDQ251Z Specification

Easydetek - Focus on Radar Sensors

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EDQ251Z

Product Features

- 90Vac~260Vac 50/60Hz power supply input
- Tuya Zigbee wireless communication protocol
- Small size, surface mounted stand-alone sensors
- Utilizes human detection technology to support motion and presence detection
- 24G strong anti-interference antenna, can effectively resist wifi, bluetooth and other wireless signal interference
- Supports left and right zone detection

Electrical Parameters

Input Voltage	AC 90-260V 50/60Hz
communication method	涂鸦Zigbee 3.0
Operating power consumption	＜0.8W
illuminance value②	0-1200lux

Functional Parameters

Motion Sensing Radius ①	5.5m max
Presence sensing radius ①	4m max
Hanging height	＜4m
Delay Time	2-3600s

Output Parameters

Transmission frequency	24-24.25GHz
Transmission power	5dBm max

Environment & Lifespan

Operating Temperature	-30~+60℃
Storage Temperature	-35~+85℃

Remarks:

① The test distance range is based on the sensor hanging height of 3m, indoor installation environment test,
the test person is 170cm tall, weight 65-75kg, walking speed 1m/s.
Different scenarios may cause changes in the range of installation, subject to the actual test.

② Due to the spectral characteristics of the photosensitive device, the illumination value is uniformly tested under natural light conditions.

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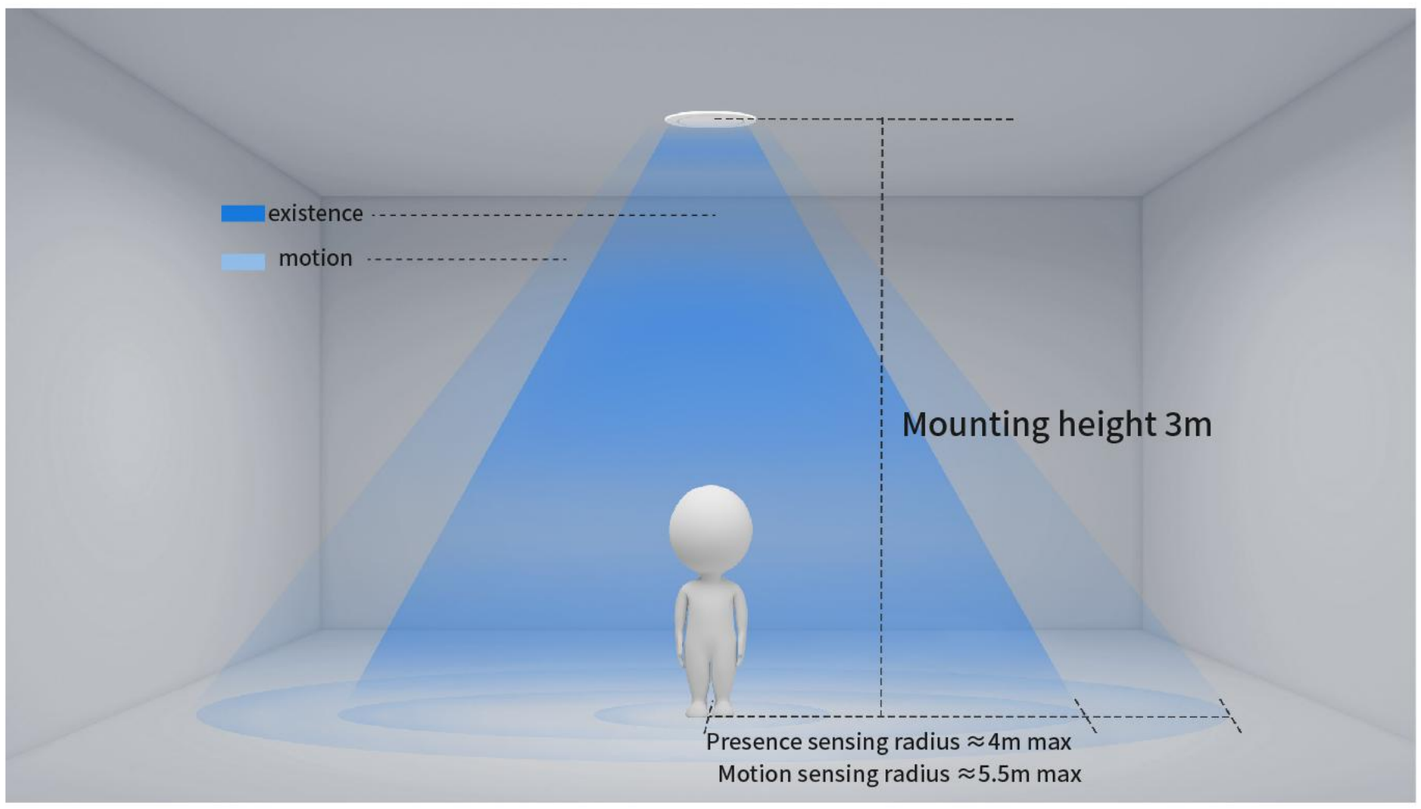
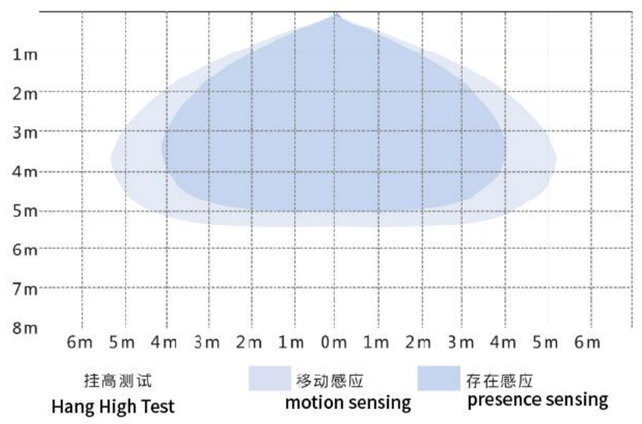
Detection Schematic



Radar Sensing Schematic

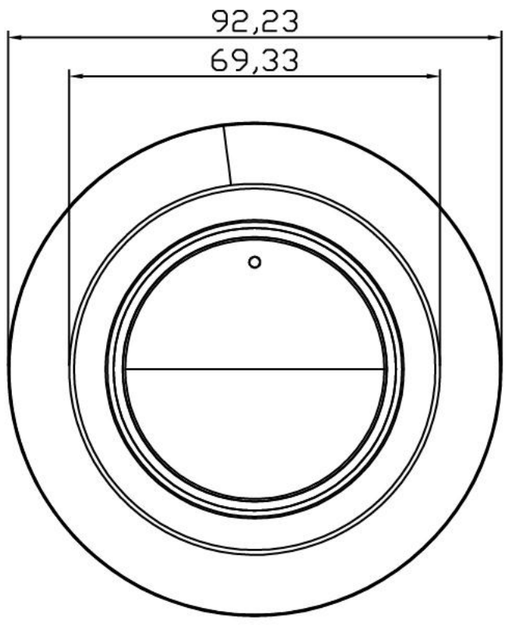


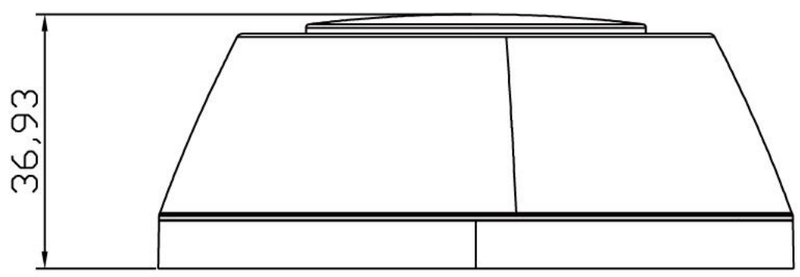
Presence sensing radius ≈ 4m max

Motion sensing radius ≈5.5m max

Product Dimension Drawing

Size unit：mm





EDQ251Z Dimensional tolerance: ±0.2

Indication status

1、Power on: enter initialization state after power on, LED indicator light is always on for 5s, after initialization, LED indicator light is off, enter 2s blocking state, after blocking end, enter normal sensing state.

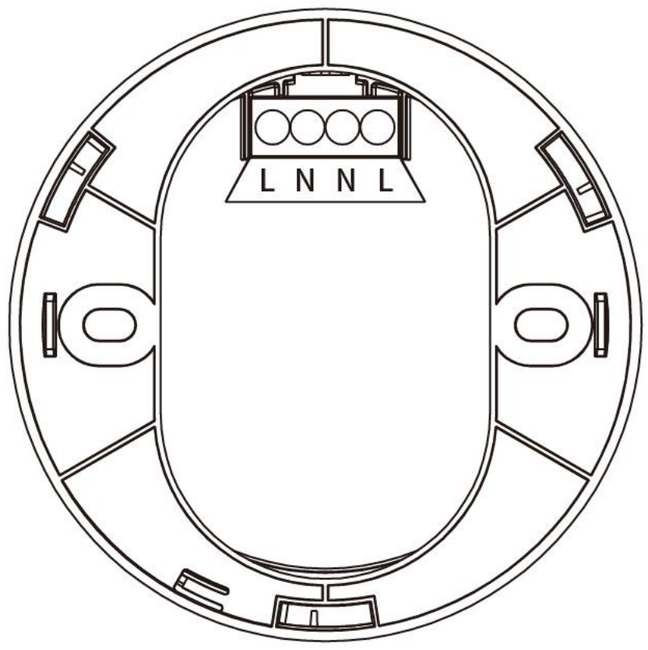
2、Network distribution: under the state of network distribution, the LED indicator light flashes quickly and lasts for 3 minutes, and the indicator light is long lighted for 5s after the success of network entry.

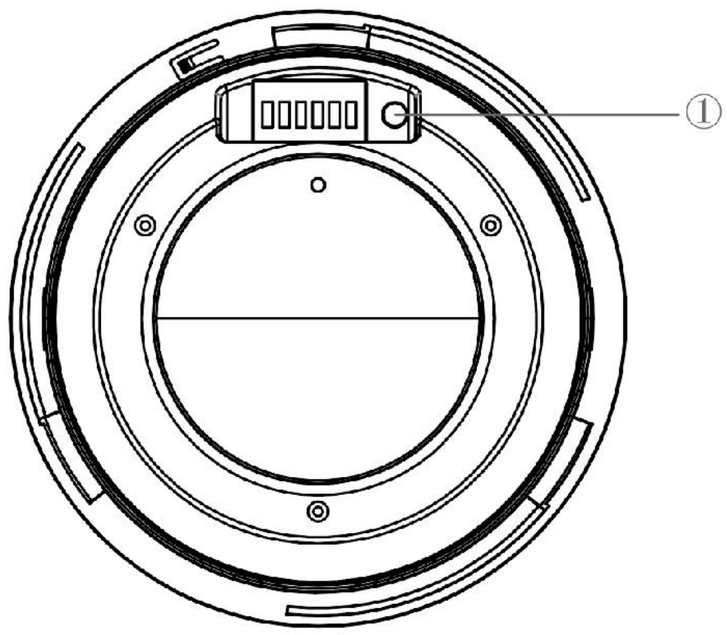
3、Sensing: when the sensor enters occupied state from unoccupied state, the LED indicator flashes once, and when it continues to be in occupied state, the LED indicator flashes once every 5s

4、Setting parameters: after successful setup, the indicator light will flash twice.

Note: When the movement is triggered several times within 5 seconds, the indicator light only flashes once

Pin and Key Description



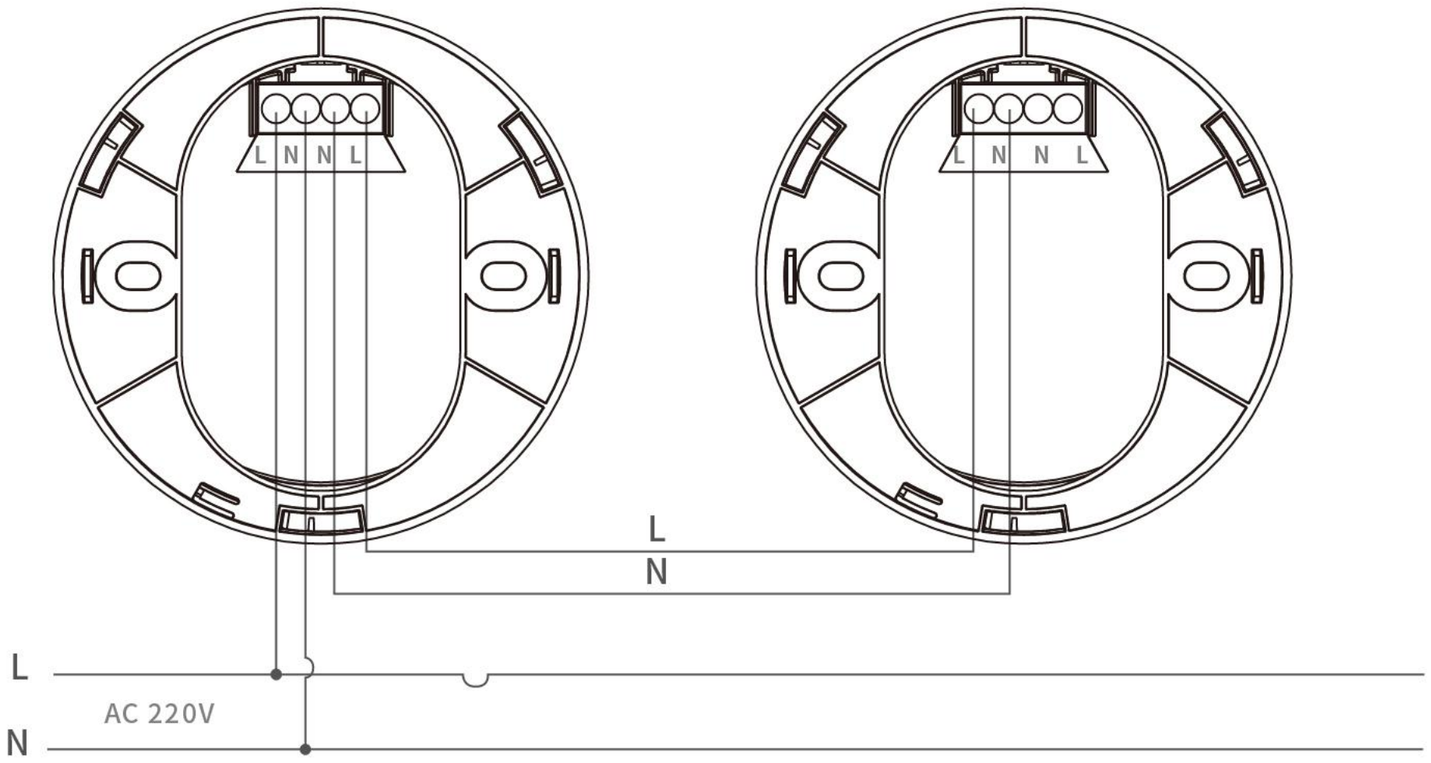


Pinout	Description
L	Firewire input/output, output in parallel to next powered device
N	zero line
N	zero line
L	Firewire in/out, output in parallel to next powered device
Button ①	Network access and reset button

Key operation instructions:

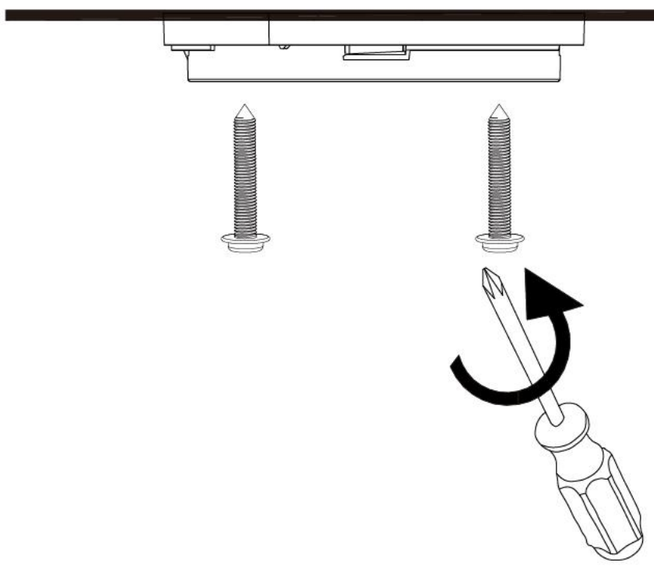
1. Networking: Long press the key for 3s, the indicator light flashes fast to enter the network mode, the indicator light is always on for 5s for successful networking, and always off for 5s for failed networking.
The indicator light flashes for 3 minutes, during which APP does not perform network operation, the device will resume normal work after the time is over. 2.
2. Parameter restoration of factory default: long press the button for 7s, the indicator light is always on to let go, the parameter restoration of factory default: radar detection is on, presence detection is on, delay time is 30s, sensing range is the 7th gear, the highest sensitivity, the detection area is the whole area, the illuminance compensation coefficient is 1x.
3. The opening is the location of the illumination sensor, and the button is made into an integrated design.

Wiring Diagram

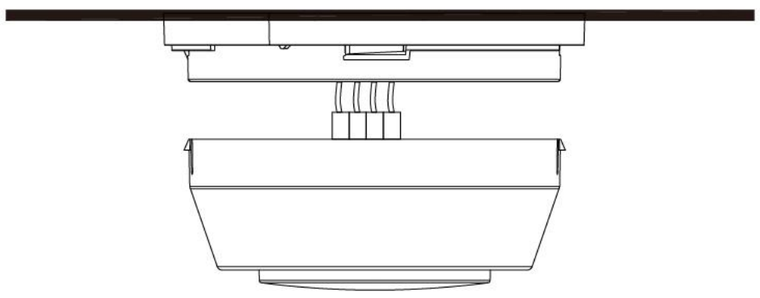


Installation Diagram

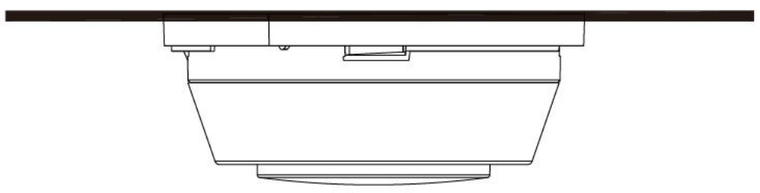
①Screws to secure the base to the ceiling



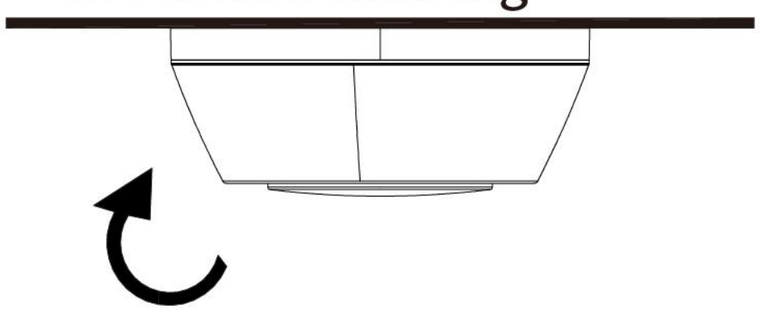
②Device and wire connections



③Sensor press snap back base



④Final rotational mounting of the sensor housing



Tuya Zigbee Device Entry Instructions

Tuya zigbee trigger sensor into the distribution state, there are two ways.

① The device has not been connected to the network and the first time to power up, after the initialization is completed, it will send out the network command to let the device enter the network mode, at this time, the indicator light flashes for 3 minutes.

② Long-press the network button on the cover opening for >3 seconds, the indicator light will enter the blinking mode for 3 minutes.

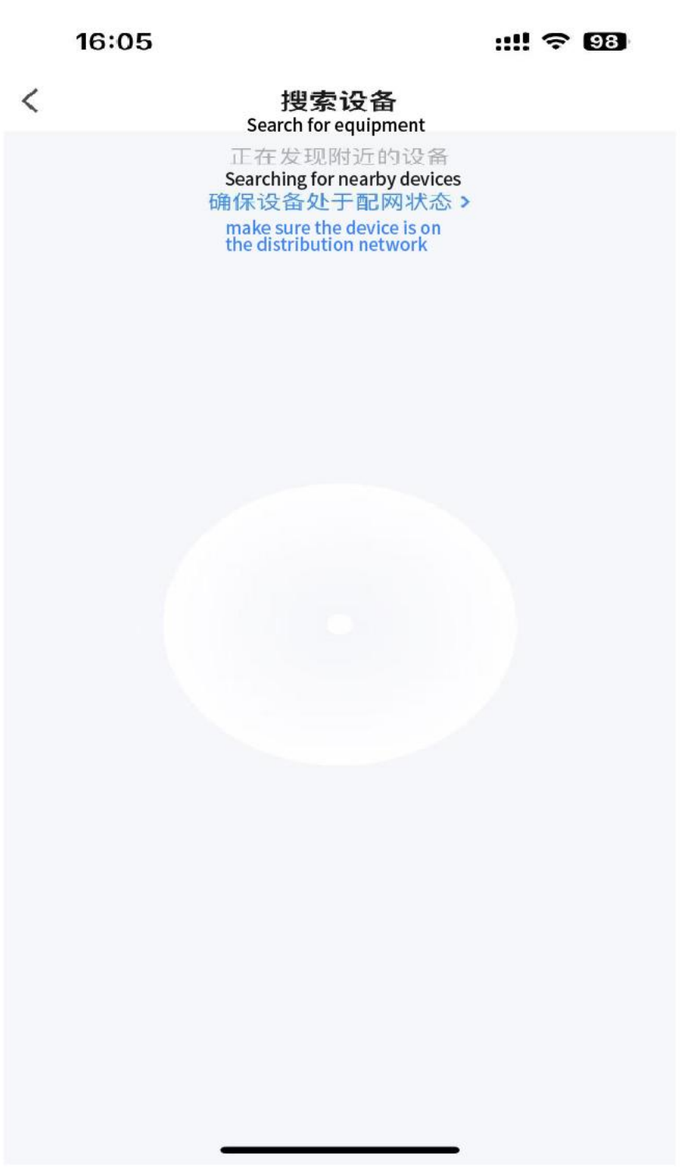
APP Network Access Operation Guide

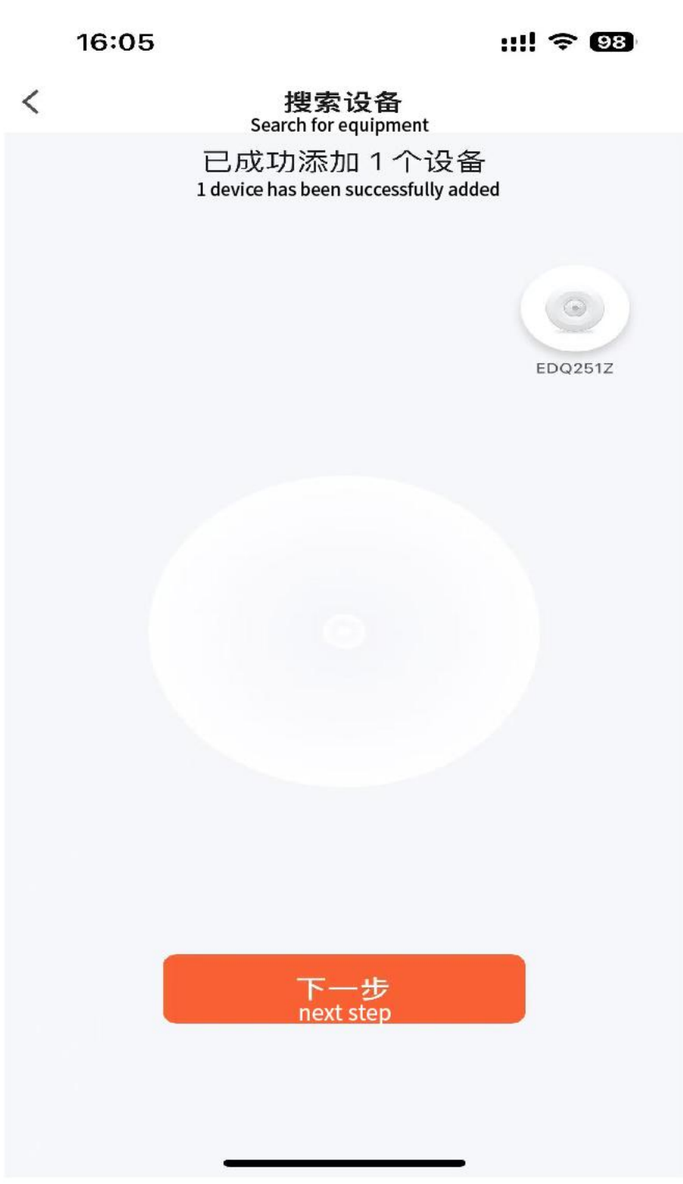
Mode.

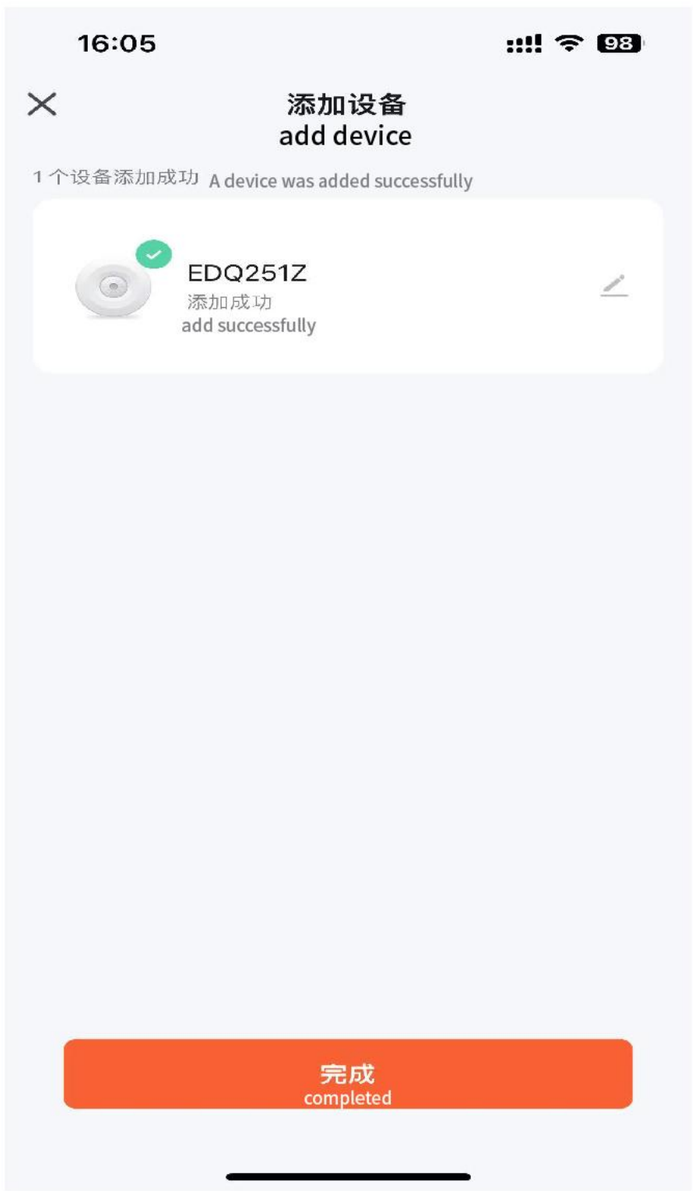
1. Login to the account to enter the main interface of Doodle Intelligence APP, select the existing Doodle multimode gateway (ZigBee+BLE), enter the multimode gateway homepage, and then enter the multimode gateway homepage, and then enter the multimode gateway homepage.

Select the zigbee device list option and click add device below.

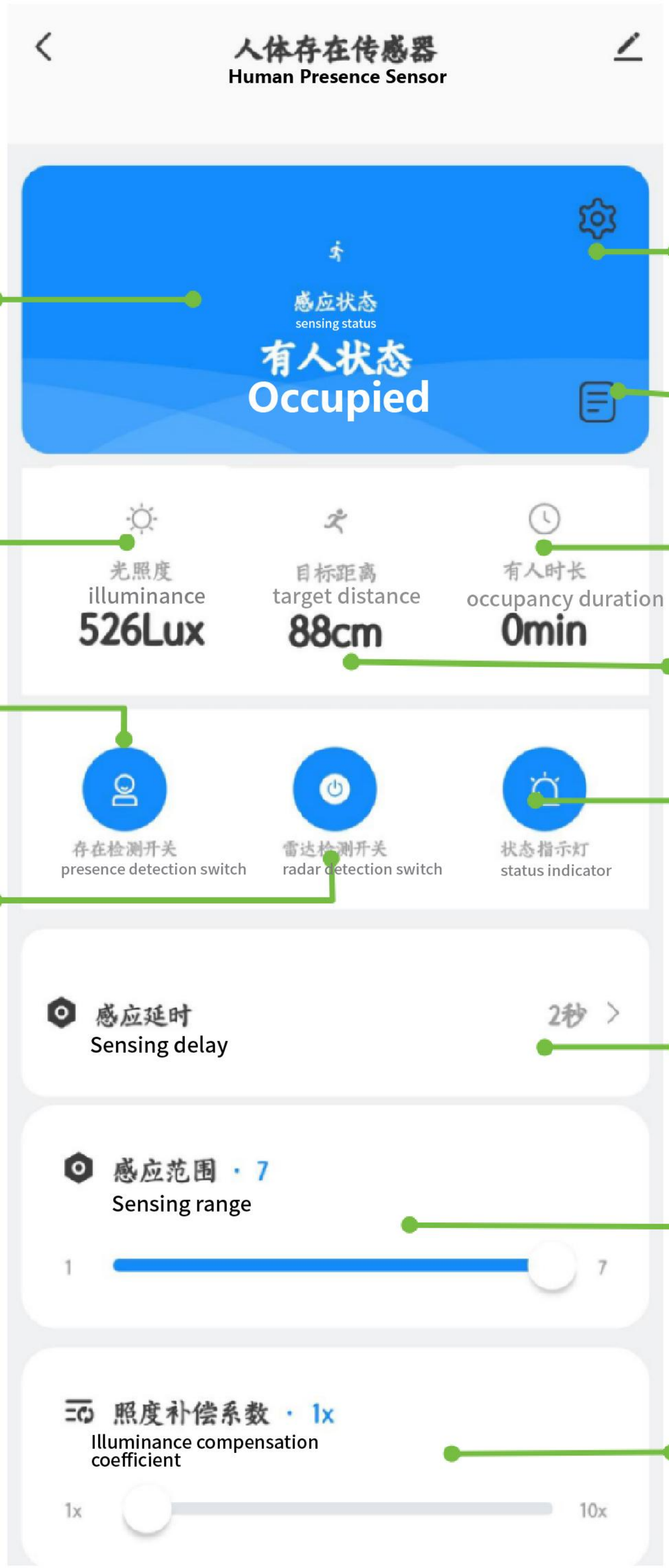
2. Click Add Device to enter the search device interface (Figure 2), when searching for a device in the distribution network will show that it has been successfully added.
   Add a device, click Finish to enter the next interface.
3. After searching the device, click Finish to enter the interface of Figure 3, and click Finish again to enter the main interface of the sensor.







APP Function Description



Sensing status: display the environmental status within the detection range of the sensor, divided into manned/unmanned status

Secondary parameter setting interface, sensitivity level and sensing partition setting, sensitivity level and sensing partition setting, see the following supplement for details

Sensing status logging: log query for sensing status reportingc

Illuminance: display the current ambient light level

Occupied/unoccupied time: Records the duration of the occupied/unoccupied statec

Target distance: theoretical straight-line distance between the person and the sensor when sensing a personc

presence detection switch: The radar's presence detection function can be turned off separately, leaving only movement detection

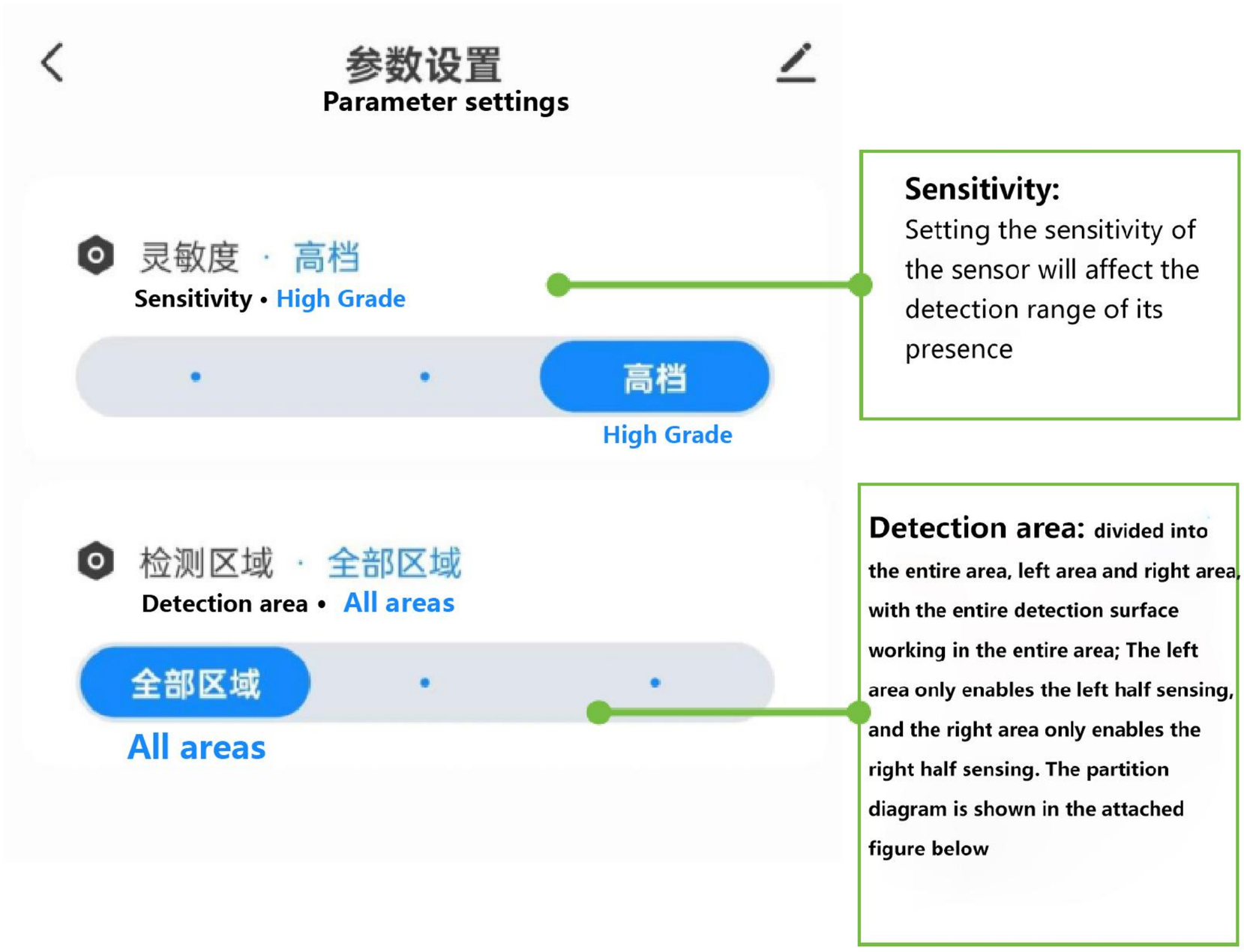
Status indicator light: When the radar detects someone, the indicator light flashes

Radar Detection Switch: Turns off the entire radar sensing and does not respond to any external signals.

Sensing delay: Set the delay time for the sensor to send unmanned signals

Sensing distance: Set the sensing range of the sensor, divided into 7 levels

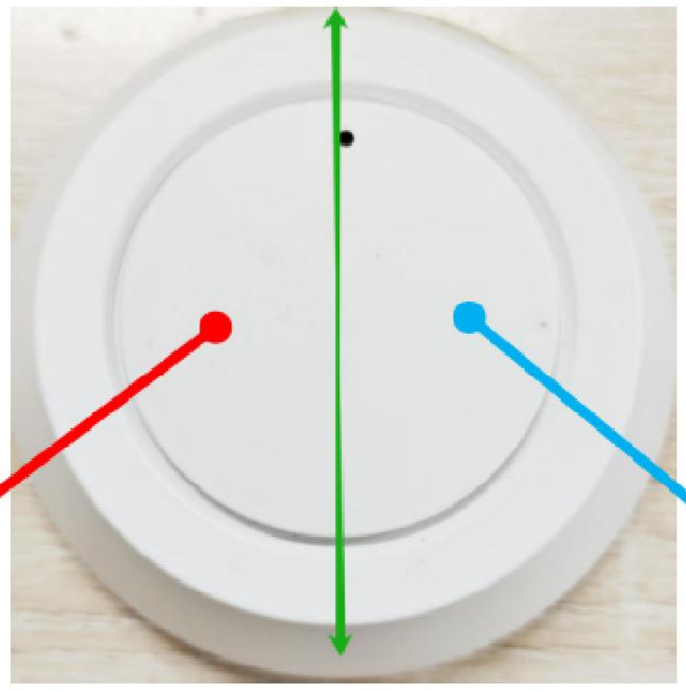
Illuminance compensation coefficient: the multiple that amplifies the current real-time illuminance



Sensitivity:
Setting the sensitivity of the sensor will affect the detection range of its presence

Detection area: divided into the entire area, left area and right area, with the entire detection surface working in the entire area; The left area only enables the left half sensing, and the right area only enables the right half sensing. The partition diagram is shown in the attached figure below

Sensor Detection Zoning Description



detection area left zone: when the left zone is selected, the corresponding sensing range of the right zone is not detected

detection area right zone: when the right zone is selected, the corresponding sensing range of the left zone will not be detected

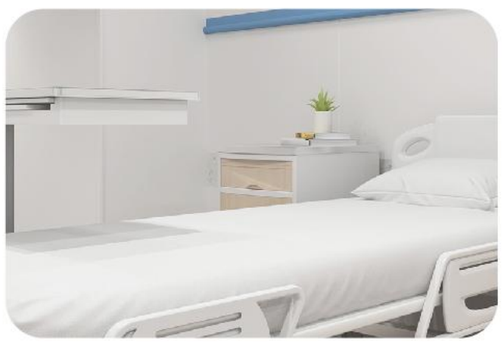
partition description: the default is to detect all areas. based on the light sensing opening facing upwards, the left side of the centerline is the left area, and the right side of the centerline is the right area

Application Scenarios

smart home

smart lighting

smart business



medical care and recreation

Historical Revision Record

Version	Time	Descriptive	Note
V1.0	2025-01-02	first edition	-

Precautions

1. When installing the product, keep a distance of more than 50CM from the exhaust fan and air-conditioning outlet. When the exhaust fan and air-conditioning outlet are working, the vibration generated will cause false triggering of the sensor detection. When installing, it is also necessary to avoid the area where vibration is caused by the activities of people or objects outside.

2. The product has a certain degree of penetration into thinner wood and glass materials. These two factors should be considered when installing and distributing points. At the same time, avoid large areas of metal in front of the sensor to avoid false triggering.

3. Within the sensor detection range, when there are large areas of glass and smooth tiles on the decorative surface, the electromagnetic wave reflection will be enhanced. It is recommended to appropriately reduce the sensing range according to the size of the space.

4. When multiple sensors are used in the same venue, it is recommended that the product installation spacing is greater than 2.5 m. If the installation distance is too close, individual sensors may cause periodic false alarms.

5. In the actual application environment, the electromagnetic waves emitted by the sensor have different reflectivity of obstacles, and the sensing range is also different. This is a normal phenomenon. For example, in corridors and wide rooms, the sensing distance will be slightly different.