

24GHz Human Presence Sensor

EDQ254 Specification



EDQ254



Product Features

- Digital filtering algorithms with high immunity to interference
- Small size, inline stand-alone installation (opening $\Phi 45\text{mm}$)
- 12-24V DC Input, RS 485 Serial Output
- Support ambient light recognition
- Adopt human body detection algorithm, support movement and presence detection

Electrical Parameters

Input Voltage	12-24V DC
communication method	RS 485
Operating power consumption	$\leq 0.8\text{W}@24\text{V DC}$

Functional Parameters

Motion Sensing Radius ①	4.5m max
Presence sensing radius ①	4m max
Hanging height	3m
Delay time	2-65535s (UART Adjustable) 10-1800s (Remote control adjustable)
photosensitivity threshold	0-400lux (UART Adjustable) 0-150lux (Remote control adjustable)
illuminance value	0-400lux

Output Parameter

Transmission frequency	24-24.25GHz
Transmission power	5dBm (max)

Environment & Lifespan

Operating Temperature	-30~+60°C
Storage Temperature	-35~+85°C

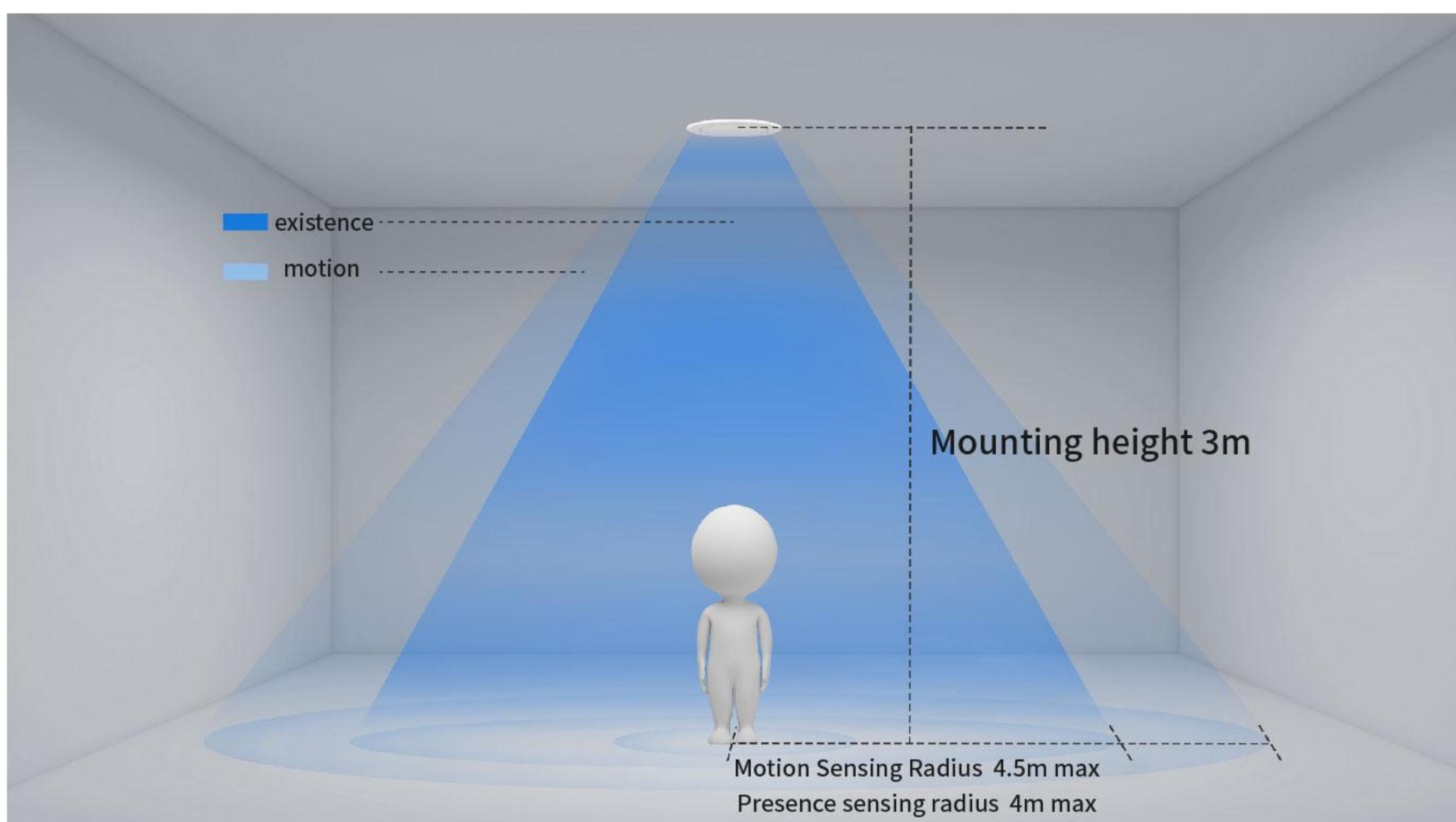
Remarks:

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.

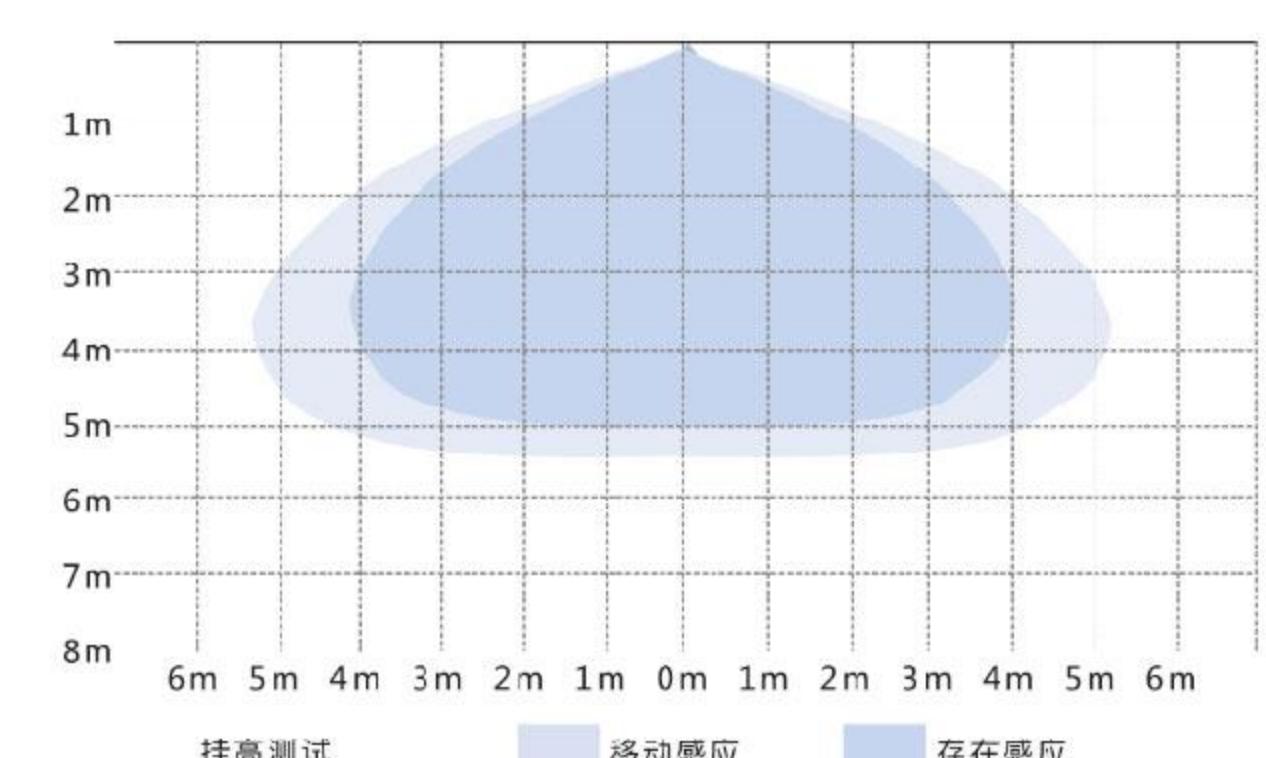
Different scenarios may cause changes in the range of installation, subject to the actual test.

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

Detection Schematic



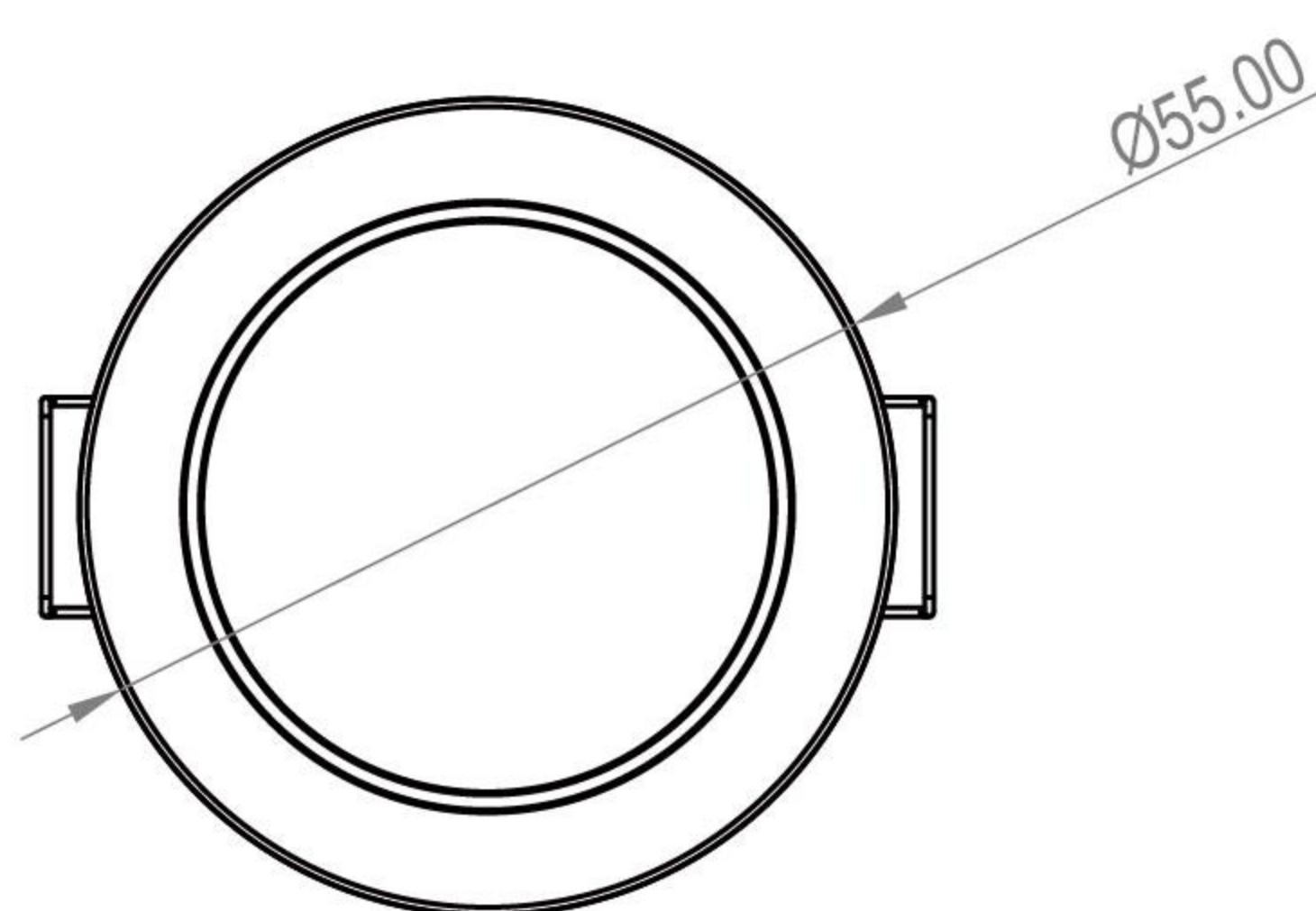
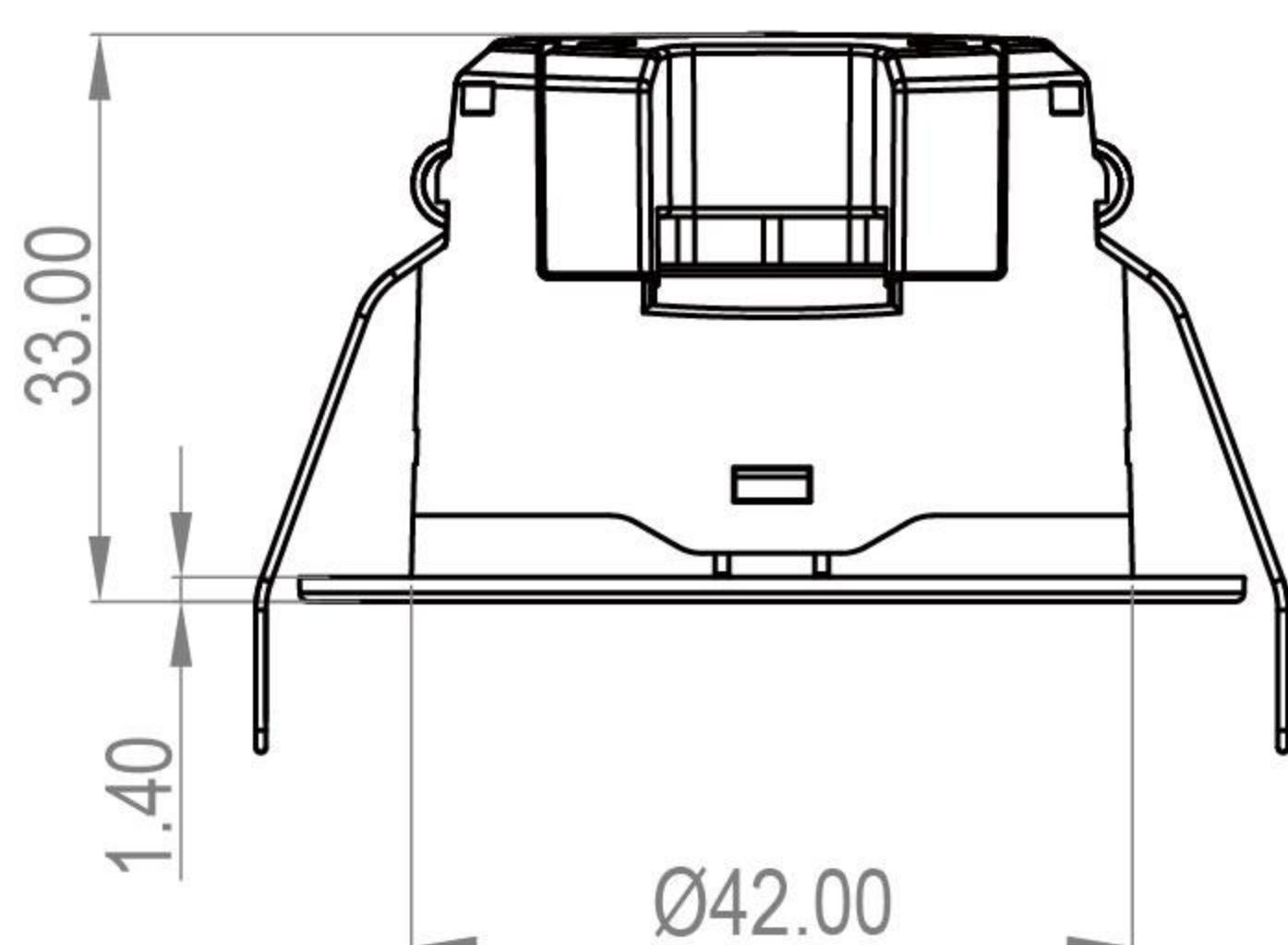
Radar Sensing Schematic



Motion Sensing Radius 4.5m max
Presence sensing radius 4m max

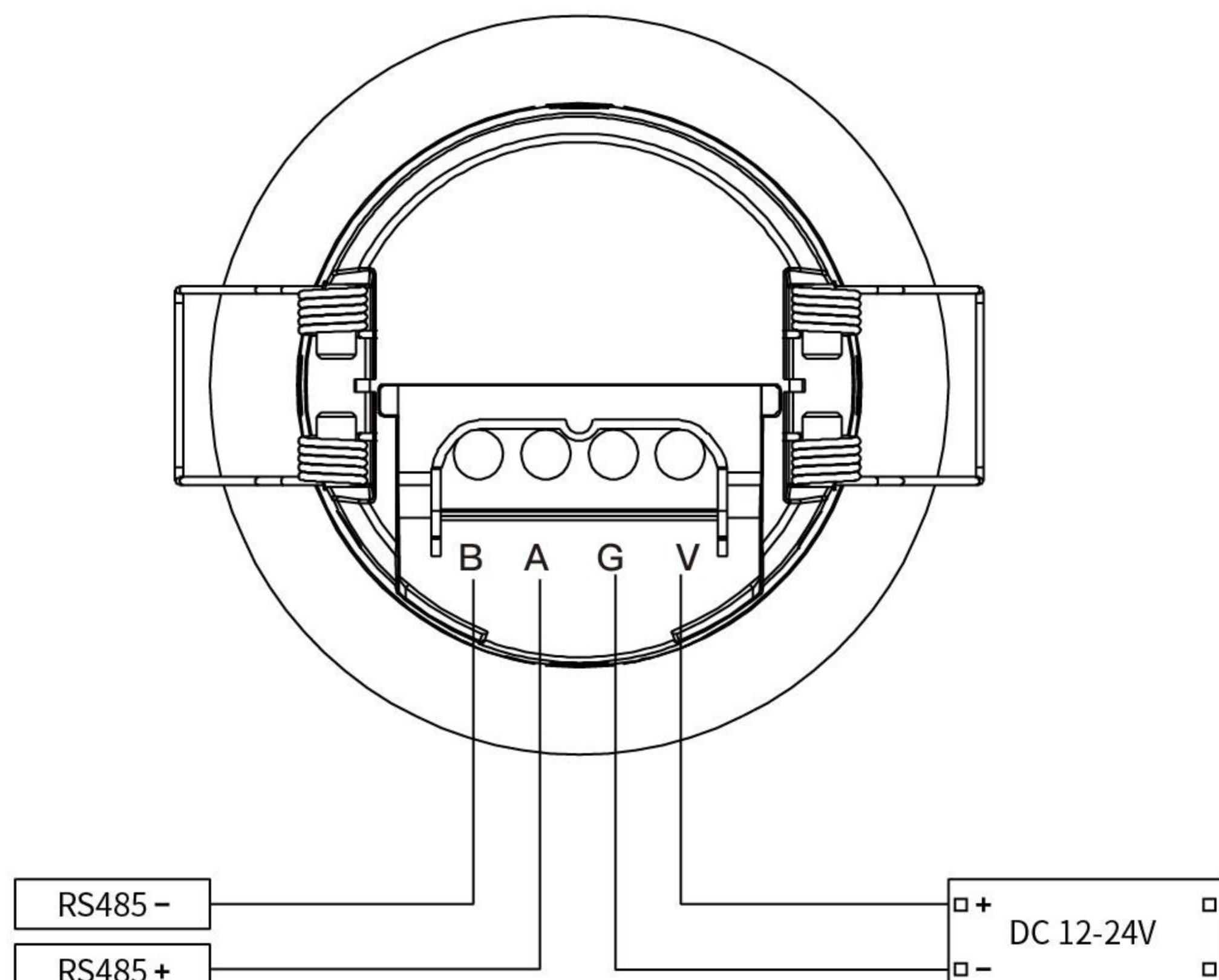
Product Dimension Drawing

Unit: (mm)

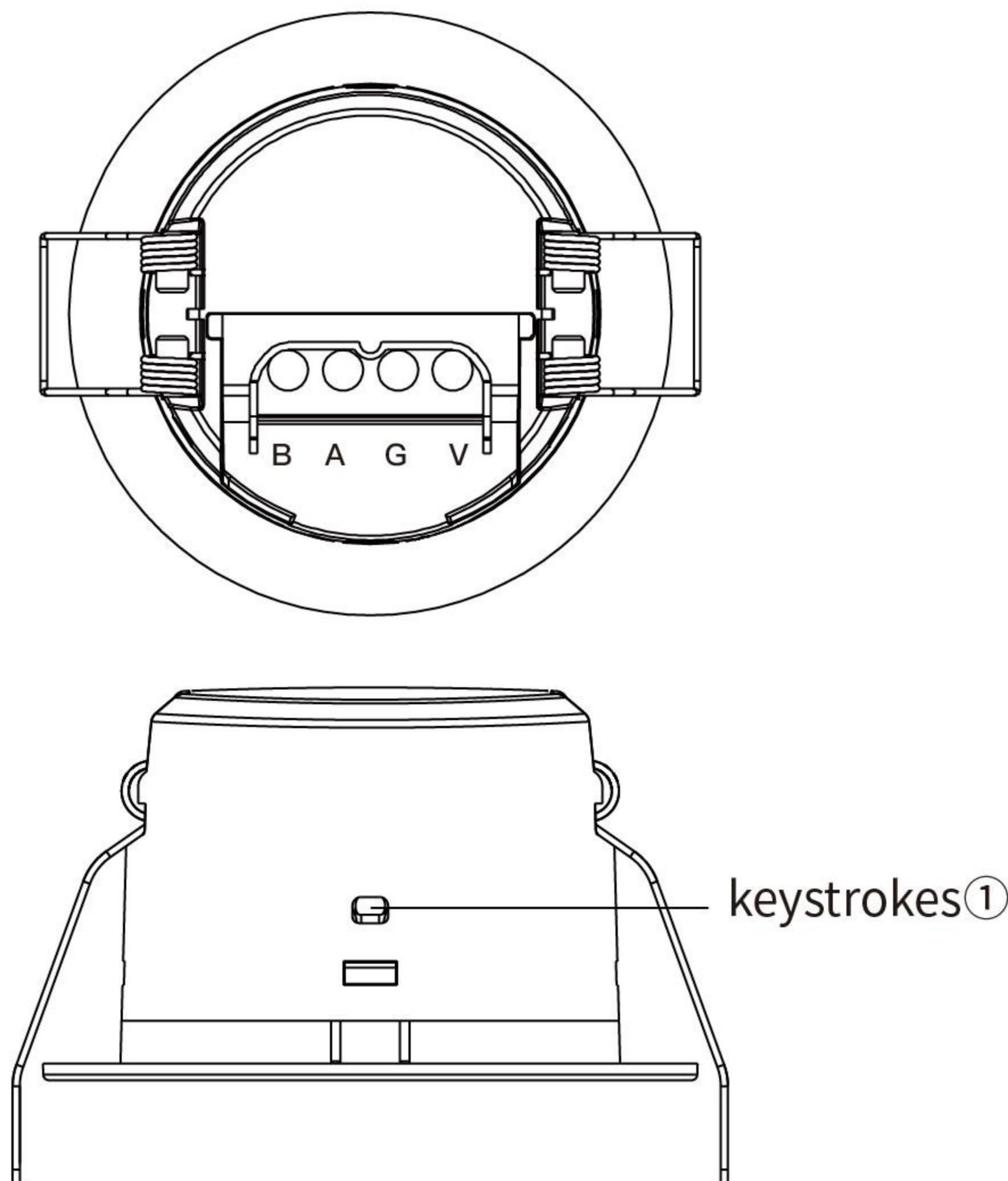


EDQ254 Dimensional tolerances: $\pm 0.2\text{mm}$

Wiring diagram



Pin Description



Pin	Description
B	RS485 port of the –
A	RS485 port of the +
G	GND
V	DC 12-24V electricity supply
Keystrokes①	Short press to edit ID, long press to reset at 3S

Output Status Description

1. Initialization: Under default status, when the device is powered on, the LED indicator is always on for 5s, and after initialization, the LED indicator goes out and enters into 2s blocking time.

2. Working status: after the target is triggered, the sensor will continuously report the target data through RS485 serial port for 3 times, and the reporting interval is 500ms.

3. LED indicator status:

a. If the target is detected, the LED indicator flashes fast once, and during the period, if there is a target continuously, it will flash once every 5s.

(Note: When the target is detected several times within 5s, the LED indicator only flashes once)

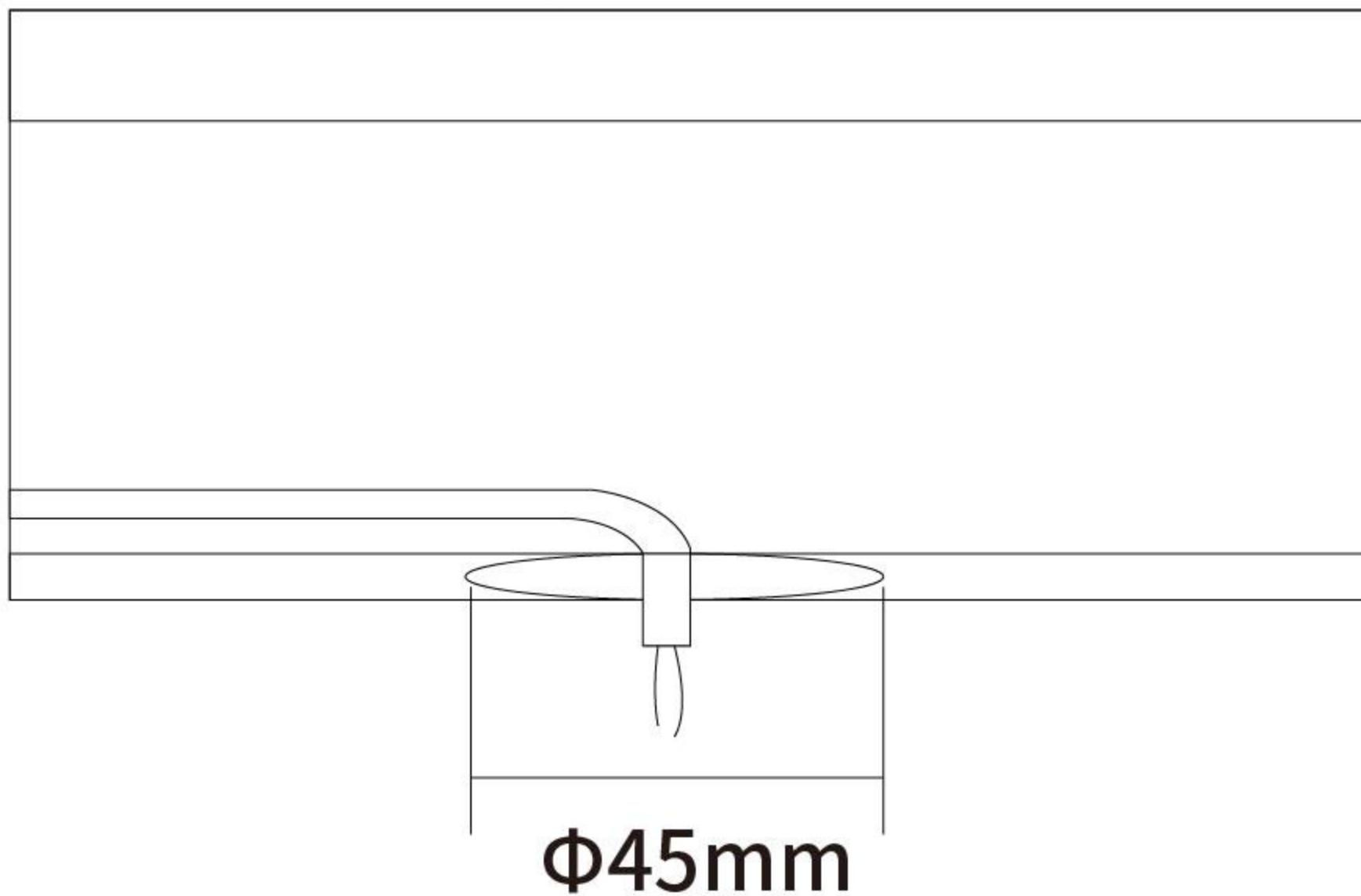
b. Short press button ①, the LED indicator will continue to flash until button ① is pressed again, or ID editing is completed, or 60s timeout;

c. Long press the key more than 3s, LED indicator light is long on, after letting go, LED indicator light is off.

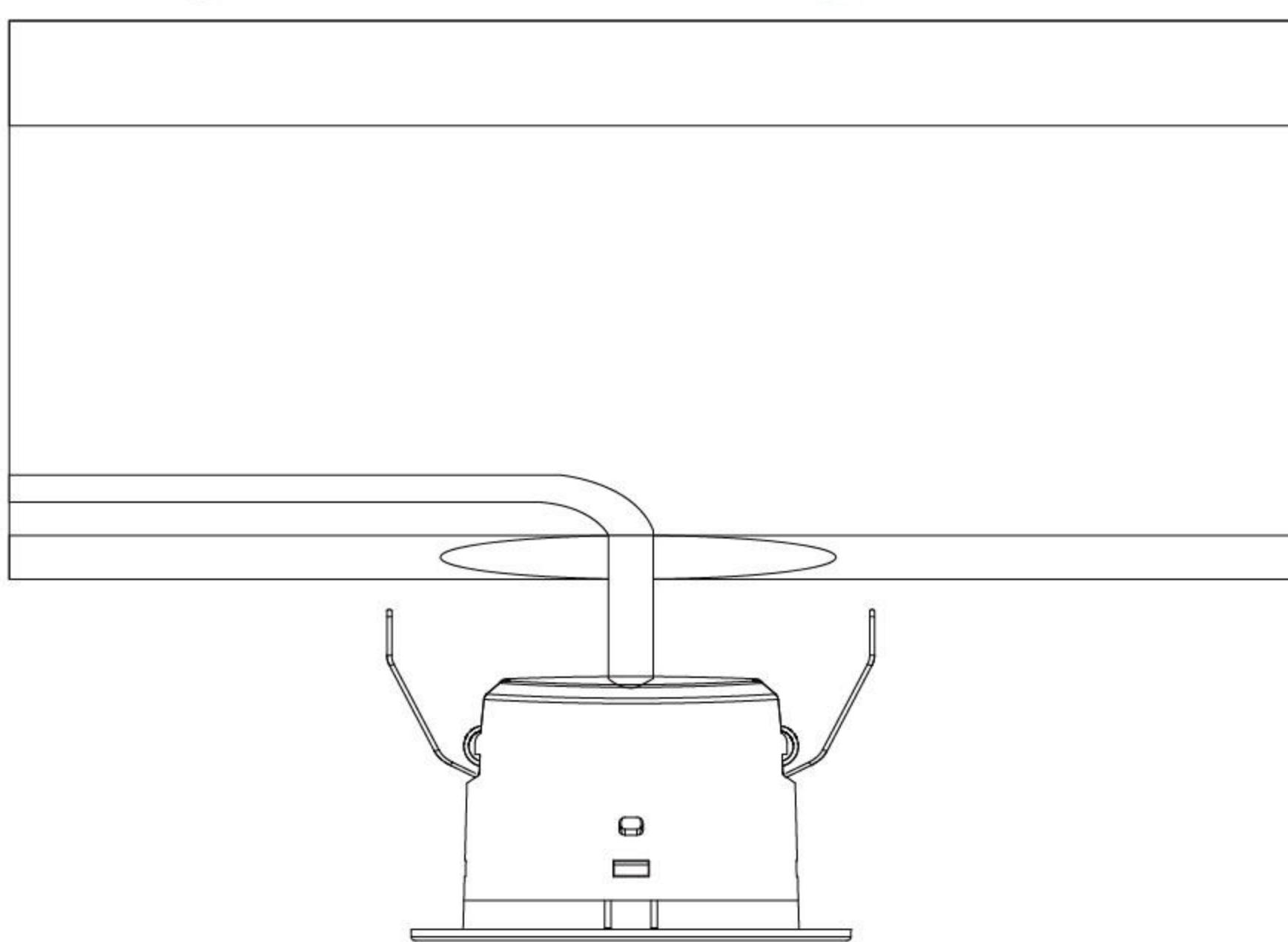
Note: Status b and c have higher priority than a.

Installation Diagram

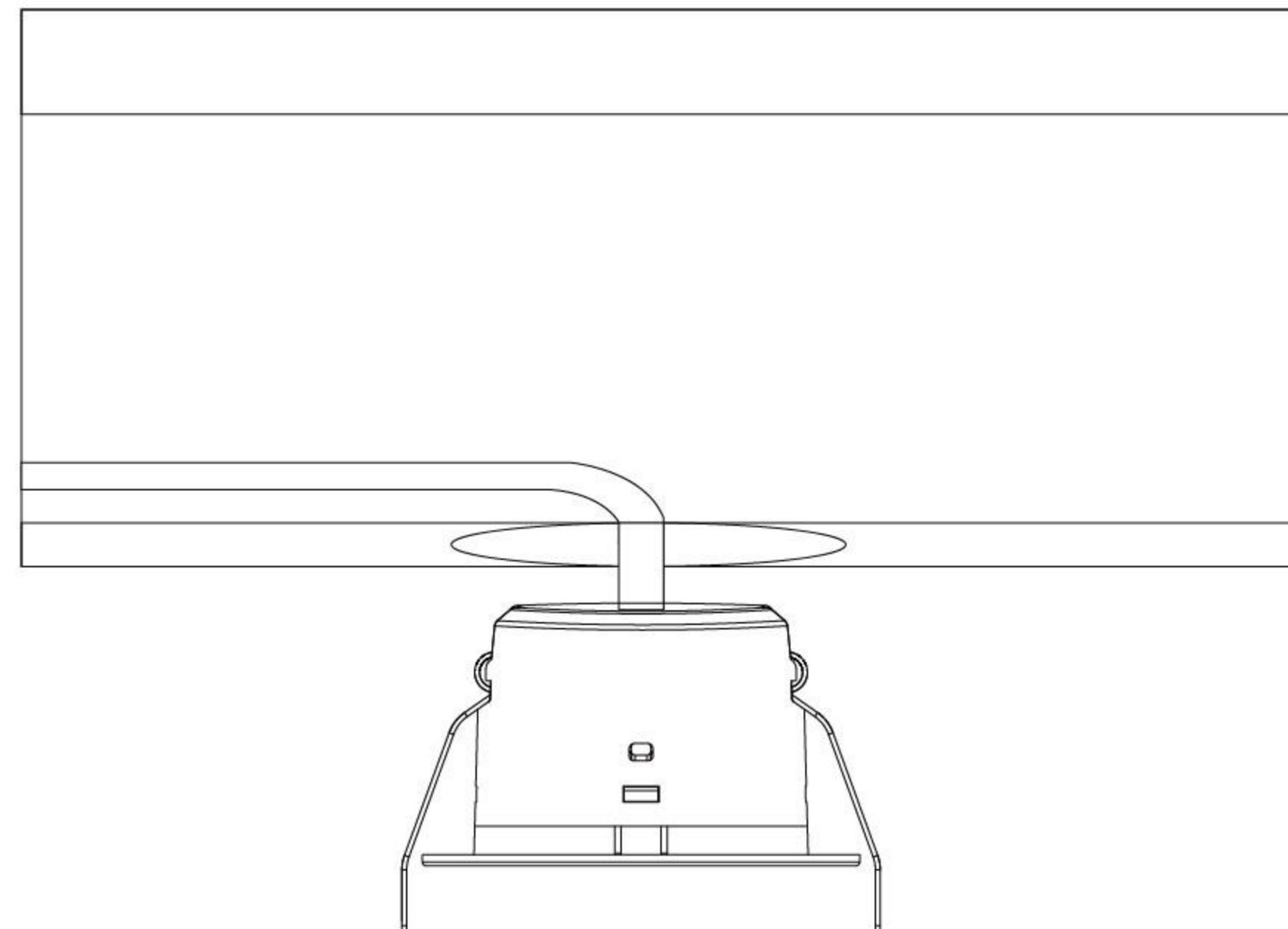
1. Punching holes in the ceiling
and reserving wires



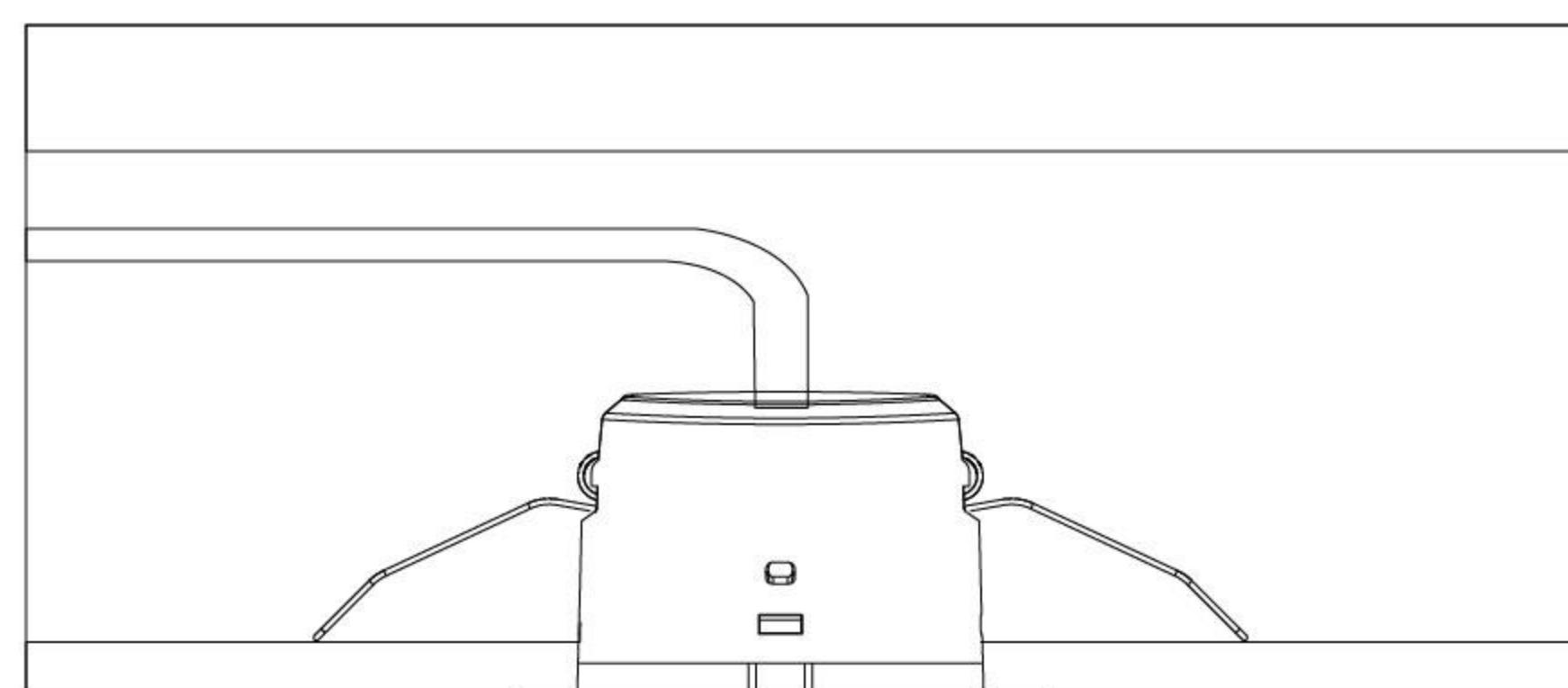
3. Adjust the mounting clips



2. Equipment and wire connection



4, embedded fixed, installation is complete



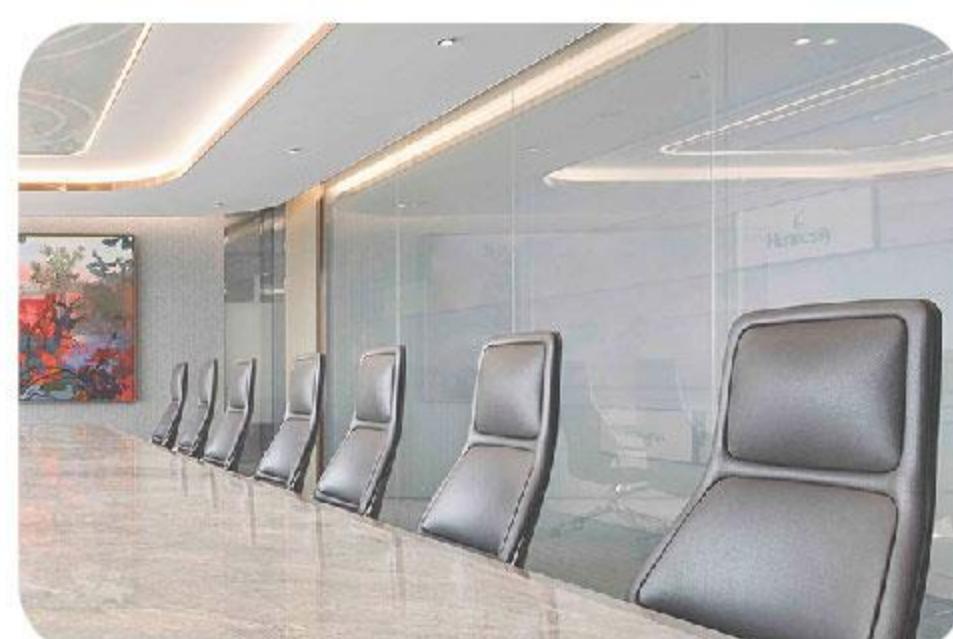
Application Scenario



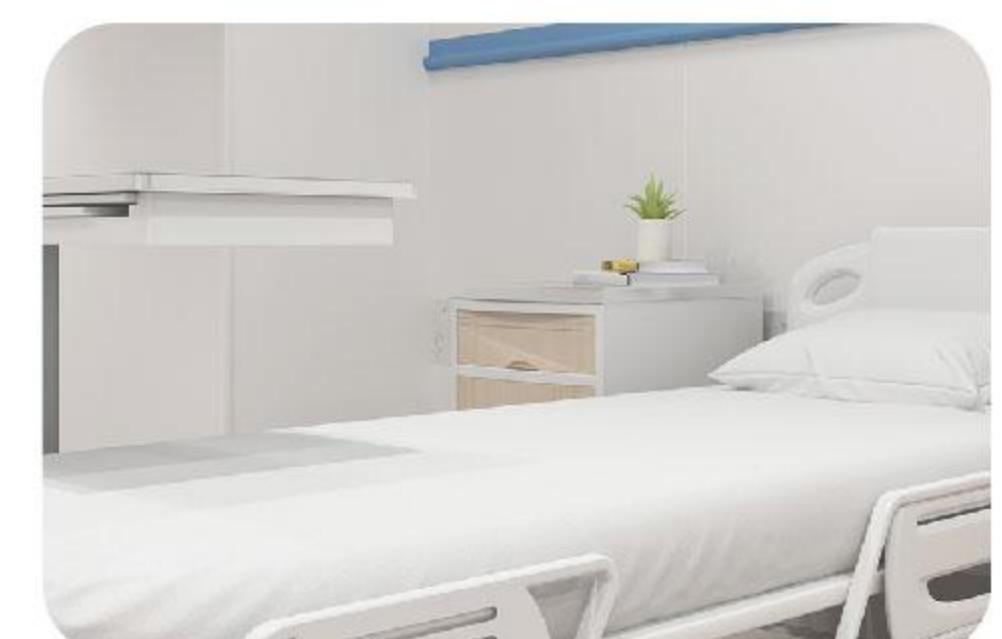
Smart home



Smart lighting



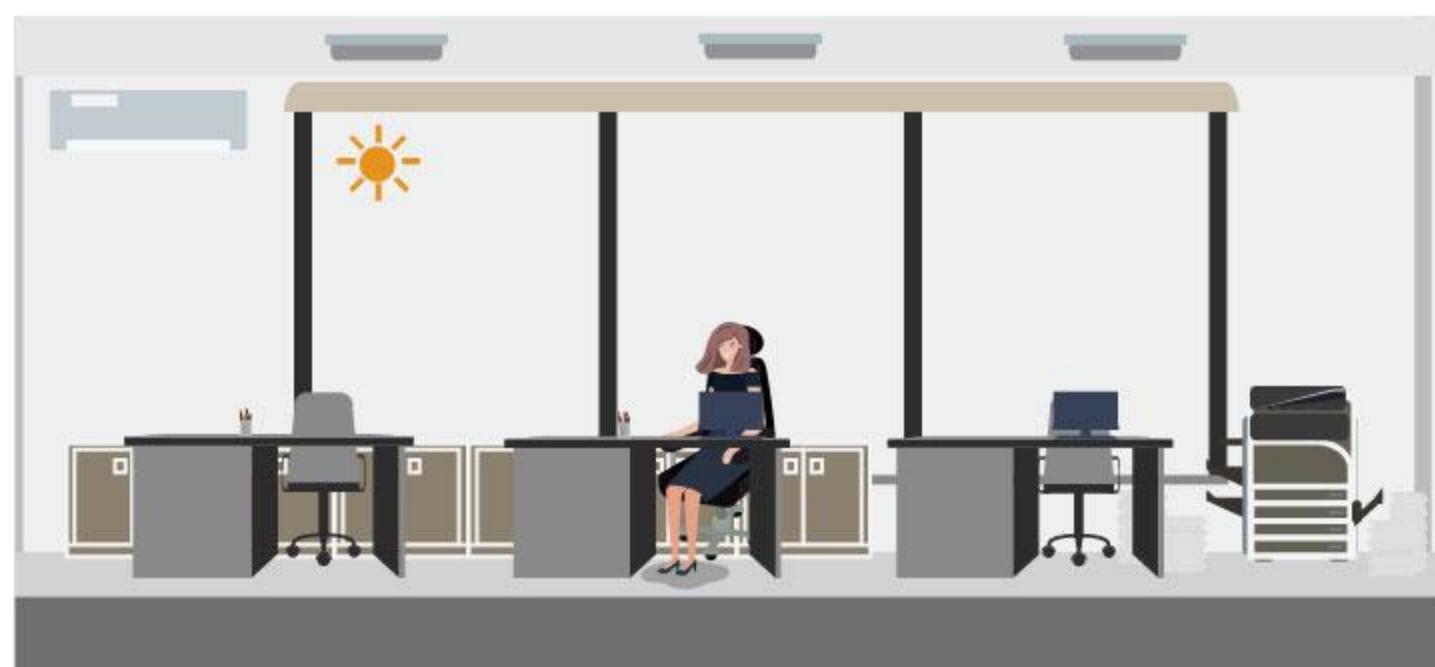
Smart Business



Medical and
Health Care

Functional Description

Illumination function on



When the ambient light is sufficient, the sensor detects moving objects and the light will not automatically turn on

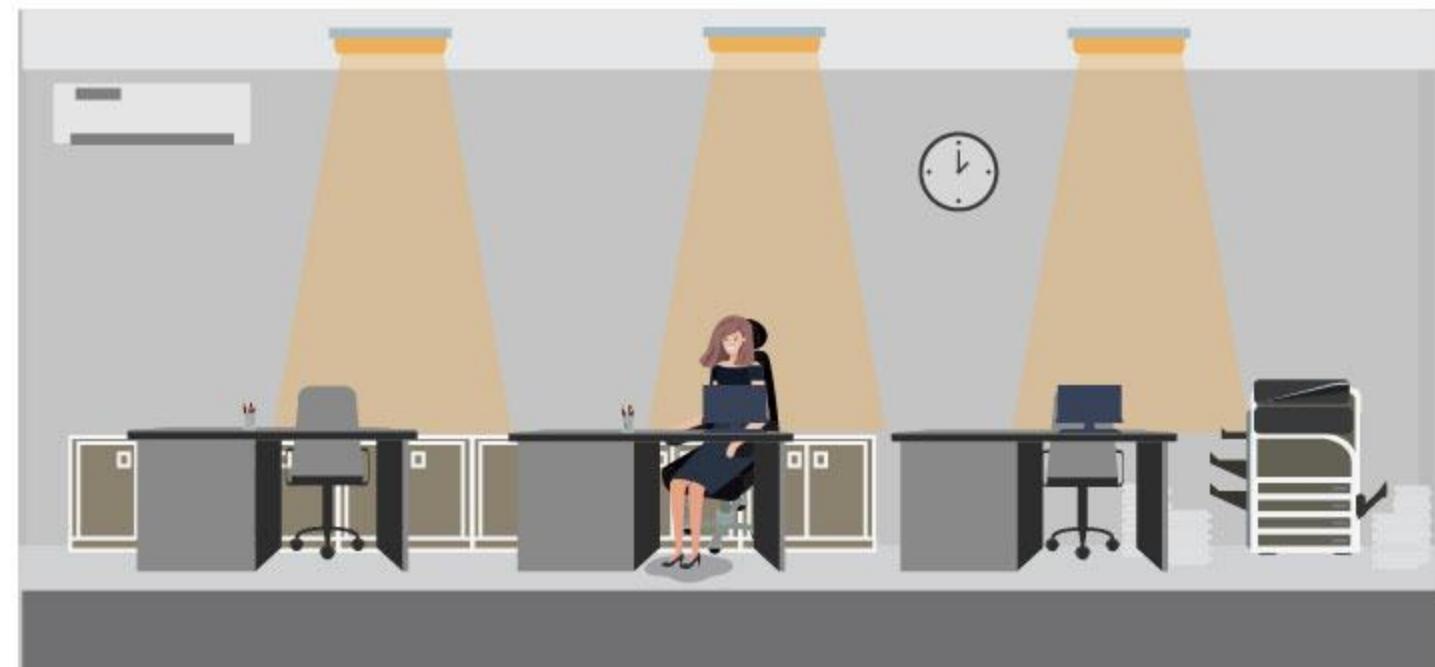


When the ambient light is insufficient, the sensor detects moving objects and the light automatically lights up



The moving object leaves, and after a preset delay, the light will automatically turn off

Illumination function off



When the sensor detects a moving object, the light automatically lights up and enters the set delay time



After the delay time, if the sensor cannot detect the moving object, the light fixture will turn off

Product Naming Law

ED	Frequency Band	Product Categories	Product Subdivision	Product Number	Delay Time	Serial number
ED	Q	2	5	4	Y	
EasyDetek	C 5.8GHz	1 Microwave sensor module	0 Ultra-low-power series	0-9, A-Z	Y Has light sensor	
	X 10.5GHz	2. Microwave radar switch	1 Flagship series		N no light sensor	
	Q 24GHz	3 Radar antenna	2 Short-distance series		P programmable	
	V 60GHz	4 MCU	3 Adjustable series			
	W 77GHz	5 Microwave power supply	4 External antenna series			
		6 IC	5 General Series			
		7 Other	6 To be defined			
		8 Networking	7 To be defined			
			8 Basic series			
			9 High altitude series			

Historical Revision Record

Versions	Time	Description	Note
V2.0	2025-01-02	First Edition	-

Precautions

1. When installing the product, it should be kept at a distance of more than 50cm from the exhaust fan and air conditioning outlet. The vibration generated by the exhaust fan and air conditioning outlet during operation can cause false triggering of sensor detection. During installation, it is also necessary to avoid areas where external people or objects can cause vibrations.
2. The product has certain penetrability to thinner wooden boards and glass materials, and these two factors should be considered when installing the fabric points. At the same time, avoid large areas of metal in front of the sensor to prevent accidental triggering.
3. When there is a large area of glass and smooth tiles on the decorative surface within the detection range of the sensor, electromagnetic wave reflection will be strengthened. It is recommended to adjust the sensing range appropriately according to the size of the space.
4. When multiple sensors are applied in the same site, it is recommended that the installation distance of the product be greater than 2.5 meters. Installing too close may cause periodic false alarms for individual sensors.
5. The electromagnetic waves emitted by sensors have different reflectivity of obstacles in practical application environments, resulting in different sensing ranges. This is a normal phenomenon, for example, in corridors and wide rooms, the sensing distance may vary slightly.
6. EasyDetek Technology is committed to providing customers with high-quality and better experience radar sensors. Product version updates and iterations will not be notified separately.