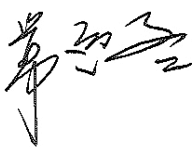# SPECIFICATION

Product Name: Microwave Sensor

Model No.:   MC079D RC ZZi

Issue Date: Sept 21, 2022

CUSTOMER APPROVED

PRODUCT DIRECTOR APPROVED	PRODUCT CHECKED	R&D CHECKED	PREPARED

*Please read the 11th instruction carefully before using this product, since the performance of DC-powered microwave products is closely related to the stability and characteristics of the auxiliary power supply of the LED driver.

1. Features

1) Patented high-gain microwave sensor, high anti-interference ability, no false trigger in metal installation site, especially designed for warehouse.

2) 12V DC input, for DC systems or LED power supplies with 12V DC auxiliary power output.

3) Using TUYA ZigBee IOT model and supporting TUYA devices interconnects.

4) PWM high/low level, 0-10V dimming, 2-step dimming and 3-step dimming function.

5) Match Zhaga Book 18 base, plug-in design, waterproof.

6) Daylight priority function.

7) 12m maximum installation height, suitable for most warehouses.

CE

Powered by
tuya

2. Parameter

|				
Input	DC Input Voltage	11-13V DC		
	Rated Voltage	12V DC		
	Operating Current	<50mA		
	Voltage Ripple	<100mV p-p		
	Stand-by Power	≤0.5W		
Wireless Module	Module	Tuya ZigBee		
	Operating Frequency	2.4-2.484GHz		
	Transmitting Power	10dBm (max: 19dBm)		
	Transmitting Distance	Visible distance>150m		
	Physical Standard	IEEE802.15.4		
	Data Transmission Rate	250K bps		
Output	0-10V Dimming	Yes		
Sensor Parameters	Operating Frequency	5.8 GHz ±75 MHz, ISM wave		
	Transmitting Power	3mW		
	Detection Area	100%/75%/50%/25%		
	Hold Time	5S/30S/1min/3min/5min/10min/20min/30min		
	Stand-by Period	0s/10S/1min/3min/5min/10min/30min/+∞		
	Daylight Sensor	daylight threshold	5lux/15Lux/30Lux/50Lux/100lux/150lux/Disable	
		daylight priority	on	off
			5lux/15Lux 30Lux/50Lux	150Lux
			100Lux	200Lux
			150Lux	300Lux

|			
Sensor Parameters	Stand-by DIM Level	10% / 20% / 30% / 50%	
	Detecting Area (100% sensitivity radius)	Ceiling mounting (height: 10m): 0.3m/S ≥4m，1m/S ≥3m	
	Mounting Height	Typical value: 10m (12m Max)	
	3db Field Angle	90°@Xz field	
		130°@Yz field	
Operating Environment	Operating Temperature	-25~60℃	
	Storage Temperature	-40℃~+80℃ Humidity: 10%-95% (non-condensing)	
Certificate Standards	Certificate	CE	
	Environmental Requirement	Compliant to RoHS	
	IP Rating	IP65	
Others	Wiring Method	terminal	Suitable for Zhaga Book 18 connector
	Installation	Build-in	
	Dimension	See Dimension diagram	
	Package	Clapboard + paper carton （K=A）	
	Net Weight	40g	
	Lifetime	5 years warranty@Ta 12V full load	

3. Function

1) On/OFF Function (stand-by period be set to "0"s)
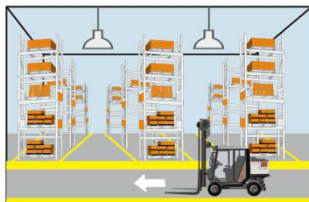
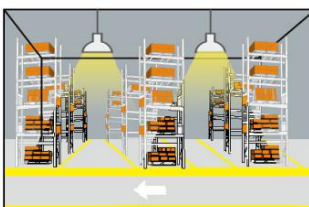❶ With sufficient ambient light, the light will not be switched on even if with motion signal.
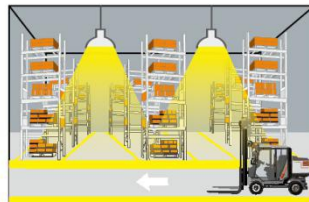
❷ With insufficient ambient light, the sensor switches on the light when motion is detected.
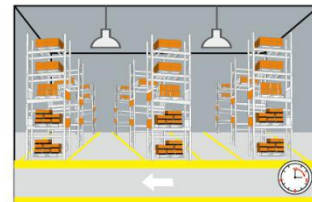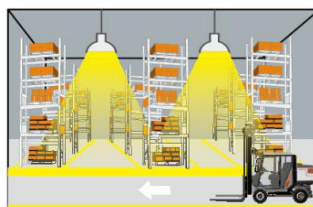
❸ After elapse of hold time, the sensor switches off the light when no motion is detected.
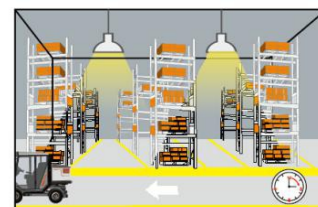
2) 2-step dimming function (stand-by period be set to "+∞")

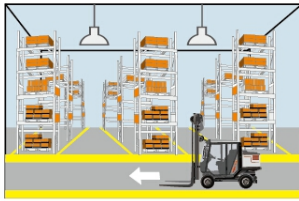❶ If there is no motion detected, the light will be remained at a low light level all the time.

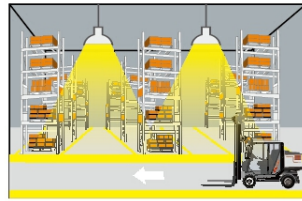❷ When motion is detected, the sensor will switch on the light to 100% brightness

❸ After elapse of hold time, the sensor dims the light at the present low light level if no motion is detected.
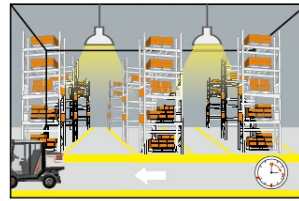
3) 3-step dimming function (stand-by period be set to "10S/1min/3min/5min/10min/30min")
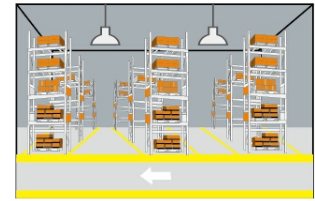
❶ With sufficient ambient light, the light will not be switched on even if with motion signal.

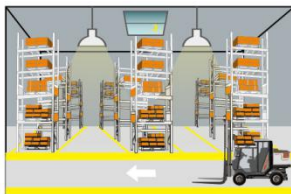❷ With insufficient ambient light, the sensor switches on the light when motion is detected.

❸ After elapse of hold time, the sensor dims the light at a low light level if no new motion is detected.

❹ After elapse of standby period, the sensor switches off the light if no motion is detected in the detection zone.

4) Daylight priority（stand-by period set to"+∞"）

❶ Lamps turn on at a low light level in the night.
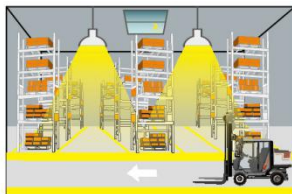
❷ Motion detected, lamp automatically lights up to 100%.
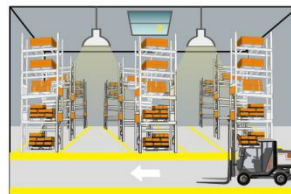
❸ After hold time, the lamp gradually dims to a low light level if no movement detected.
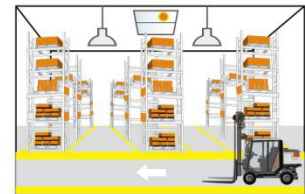
❹ Lamps turn off under enough ambient light.

4. Dimension (mm)

Φ50.00

33.50

30.50
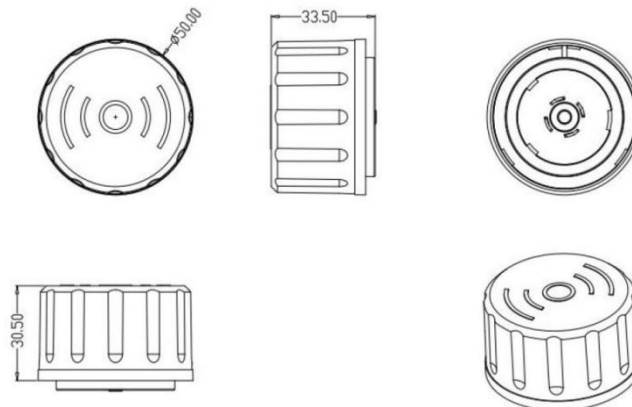
5. Wiring

*The sensor is designed for connect one load only. Connect more than one loads may damage the sensor.
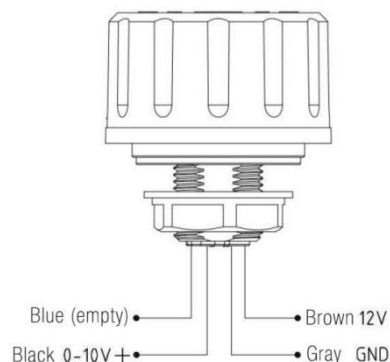
Blue (empty)   Brown 12V

Black 0-10V +   Gray GND

6. Radiation Pattern

Ceiling mounting: 12m
Sensitivity: 100%/75%
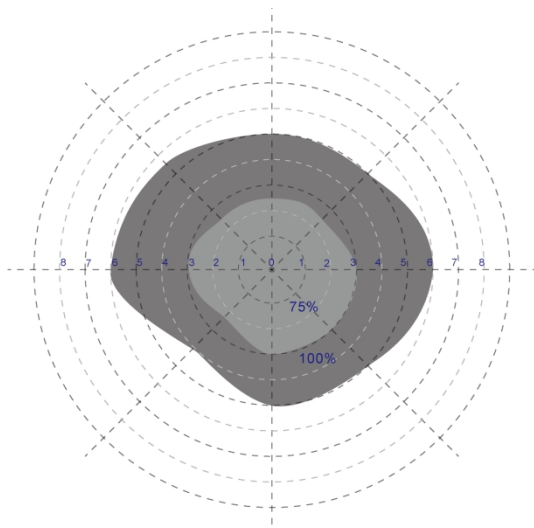
Normal moving (speed: 1m/s)

* When installed at 15m mounting height, sensor with 50% and 25% sensitivity is unable to detect motion signal.

Ceiling mounting: 12m
Sensitivity: 100%/75%
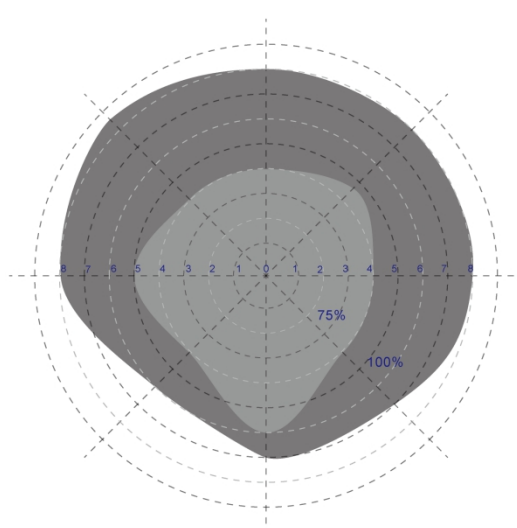
Slow moving (speed: 0.3m/s)

* When installed at 15m mounting height, sensor with 50% and 25% sensitivity is unable to detect motion signal.

Ceiling mounting: 10m
Sensitivity: 100%/75%50%25%
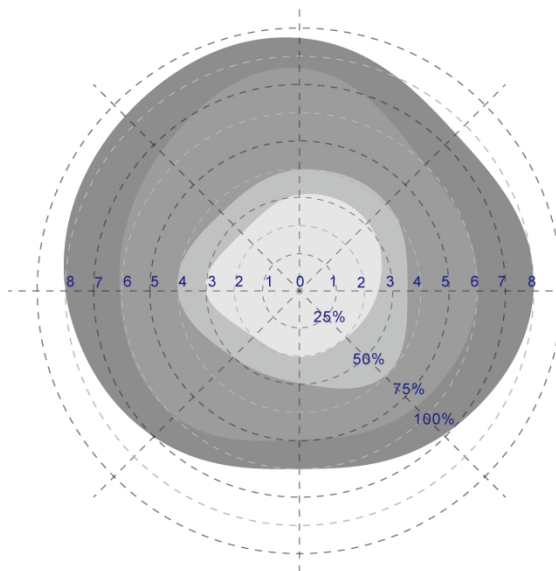
Normal moving (speed: 1m/s)

Ceiling mounting: 10m
Sensitivity: 100%/75%50%25%
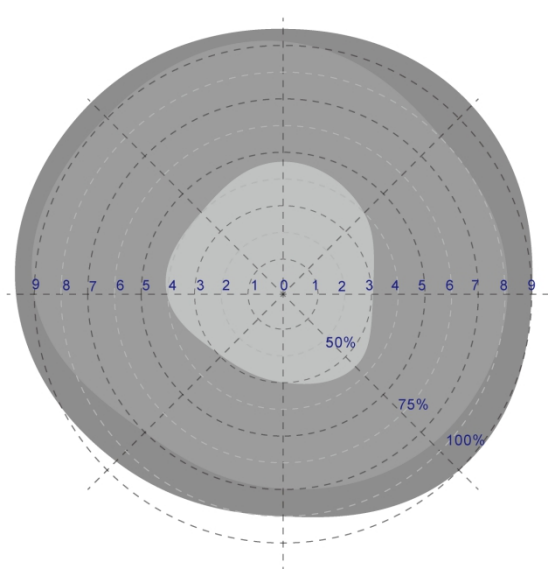
Slow moving (speed: 0.3m/s)

* When installed at 15m mounting height, sensor with 25% sensitivity is unable to detect motion signal.

7. Initialization

This product is compatible with Tuya Smart APP. Scan the QR code below to download the APPs.

Step 1: Click Add symbol [+]

Step 2: Select [manual Add]

Step 3: Select [Gateway Control], select the [gateway] you buy

Step 4: Input WiFi password and click "Next"

Step 5: Select "Confirm indicator flash" and click "Next".

Step 6: If the gateway cannot be configured after the countdown ends, repeat the operation
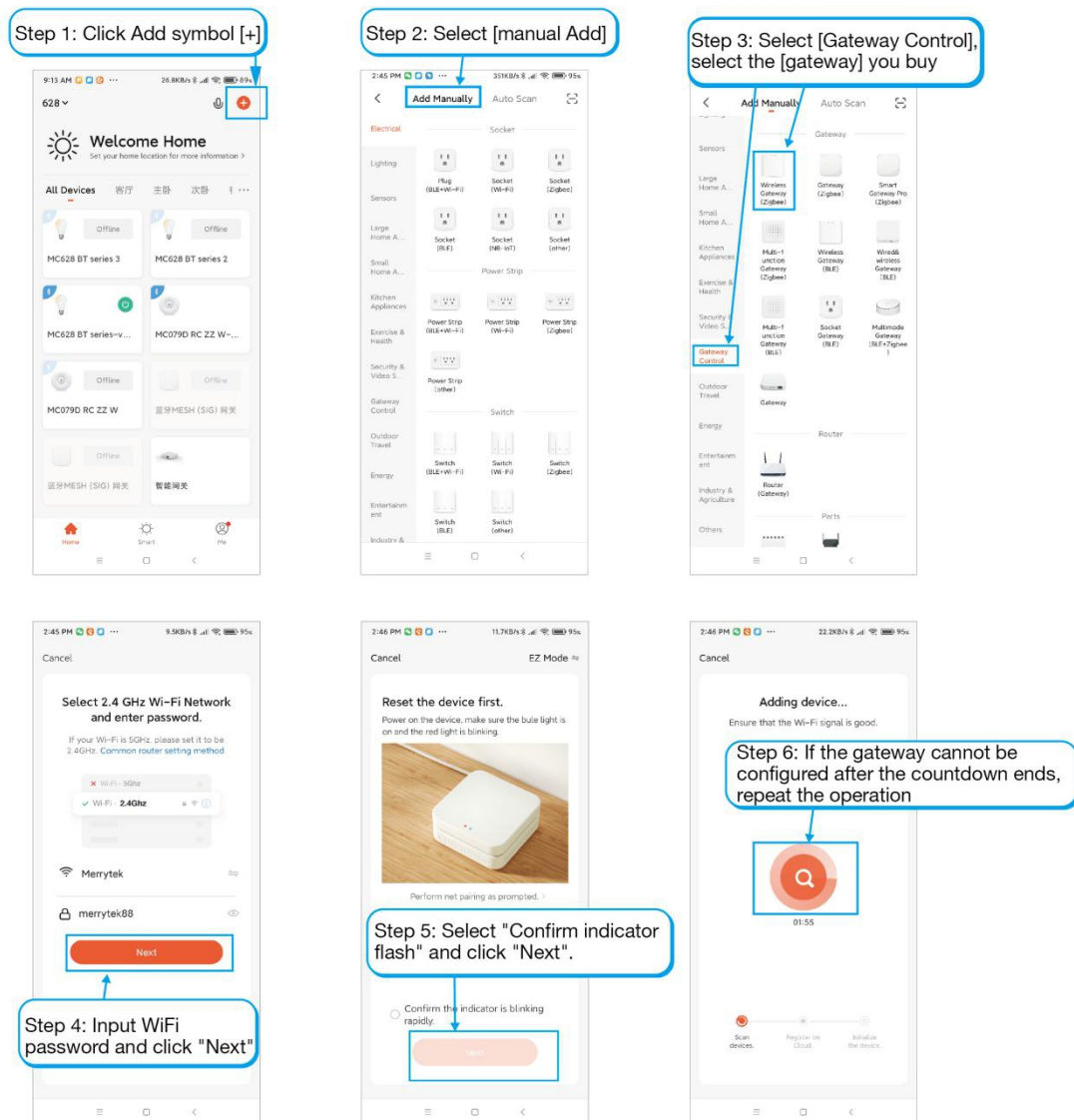
(1) Matching network automatically and light turns to preset brightness when power on first. During the initialization, the sensor is not able to detect movement. Matching ZigBee module when light blinks after remaining on for 12 seconds. When matching successfully, light will stop blinking and sensor will work. Changing parameters by APP.

(2) If matching unsuccessfully, light will blink for one minutes and sensor will work. If needing to match again, power off and then on again.

(3) If the light is always on for 12S and does not blink when first power-on , press the TEST2S key of the remote control to configure the sensor network. After matching, you can set parameters of the sensor through APP.

Note: Scan the QR code below to download the APP.

Tuya Smart APP
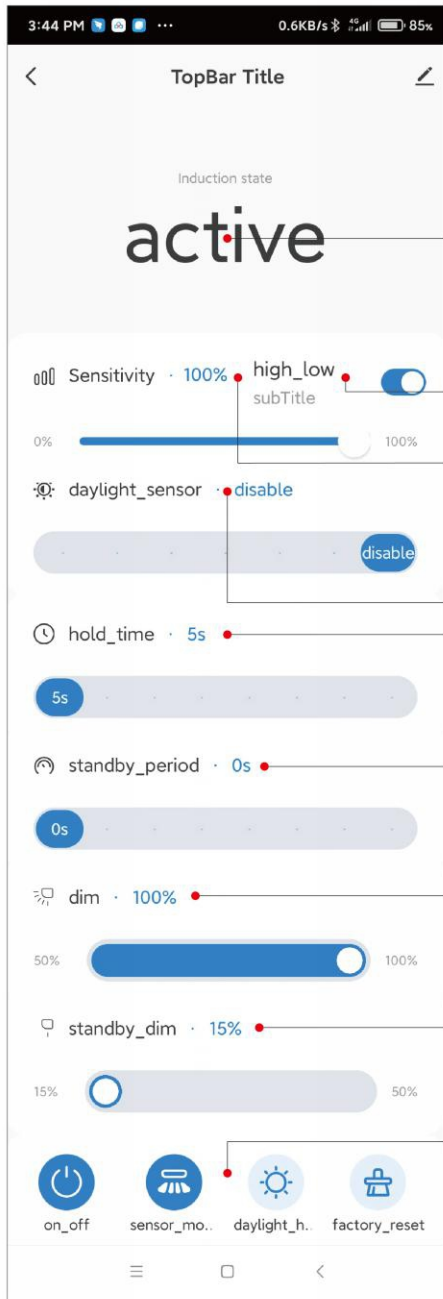
8. APP Interface

*The operation interface and the location of various parameters may be updated constantly.
The picture is for reference only, take practicality as standard.

Analyzing the states of human's activity:
1) No-human state: there is no one in the detecting area.
2) Activity state: someone is moving greatly, such as walking.
Reporting the states:
1) Reporting immediately when no-one state changes to activity state.
2) "Hold time" starts after everyone leaves detecting area. Reporting no-human state after "hold time" ends.

Selecting "High/Low Sensing" can change the sensitivity in chosen detecting area

Adjusting "Sensitivity" can change the detecting sensitivity: 0%/25%/50%/75%/100%

Adjusting "daylight_sensor" can change the daylight value: 5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/Disable

"Hold_time" starts after everyone leaves detecting area. Reporting no-human state after "hold_time" ends. Adjusting "hold_time" to 30s/1min/2min/3min/5min/10min/20min

Adjusting "standby_period" can change the time of low brightness: 0S/30S/1min/3min/5min/10min/30min/+∞

Adjusting "dim" can change the proportion of full brightness: 50%-100%

Adjusting "standby_dim" can change the proportion of low brightness: 15%-50%

on_off:
Clicking "on_off", light remains on or off constantly and sensing function is disabled.
sensor_motion:
Clicking "sensor_motiom", constant on/off mode is changed to sensing mode.
daylight_harvesting:
Clicking "daylight_harvesting", daylight priority mode turns on.
factory_reset:
Clicking "factory_reset", all settings are changed to factory setting.

9. Interconnection Setting

Step 2: Clicking the plus symbol in the top right corner

Step 4: Selecting "MC079D RC ZZi 2"

Step 1: Clicking "Smart"

Step 3: Selecting "when device's state is changing"

Step 5: Selecting "Induction state"

Step 6: Selecting "Run the device"

Step 7: Selecting "on_off", "ON" and "save" in turn.

Step 8: Clicking "+"in the top right corner and selecting "Run the device"

Step 9: Selecting "MC079D RC ZZi 1"

Step 10: Selecting "Induction state"

Step 11: Selecting "Run the device"

3:03 PM   2.5KB/s   91%

< All Devices   客厅   主卧   次卧

MC079D RC ZZi 2 >
MC079D RC ZZi 1 >
MC628RC B-vdevo >
MC079D RC ZZ W–vdevo >
MC628V RC B1 8 >
MC079D RC ZZ W 2 >
迈睿多功能传感器 4 >
MC079D RC ZZi–vdevo >
VENAS 4 >
VENAS 3 >

3:04 PM   3.5KB/s   91%

< Select Function

sensor_motion >

Induction state >

3:05 PM   8.7KB/s   90%

< Create Smart

Set a condition   Set up task
Induction
state:active

☀ Run the device >

🌄 Select smart scenes >

📞 Send notification >

⌛ Delay the action >

⊕ Quick Create

Step 12: Selecting "on_off", "ON" and "save" in turn.

3:06 PM   3.7KB/s   90%

< Select Function   Next

Sensitivity >
hold_time >
standby_period >
dim >
standby_dim >
daylight_sensor

on_off

on ✓

off ○

Cancel   Save

3:07 PM   5.1KB/s   90%

Cancel   Create new Smart

Condition   ⊕
When any condition is met

◎ MC079D RC ZZi 1 >
    Induction state:active

Task   ⊕

◎ MC079D RC ZZi 2 >
    on_off:on

Name
If "MC079D RC ZZi 1"Induction
state:active,"MC079D RC ZZi 2"on_off:on >

Style   ● >

Effective Period   All day >

Save

Step 13: Clicking "save"

10. Factory Setting

Detection area: 100%, Hold Time: 5S, Stand-by Period: 0s, Daylight Sensor: Disable, Stand-by dim level: 10%

(factory setting can be changed as required)

11. Instruction

(1) The sensor should be installed by a professional electrician. Please turn off the

power before installing, wiring, changing the setting of the DIP switch.

(2) Microwaves cannot penetrate metal. Do not place the product in a closed metal lamp or a half-closed metal

lamp and metal or glass are not allowed to cover above the product. If antenna needs to pass through the metal

plate, please ensure that the top of the sensor is close to the metal plate.

(3) The distance between any inductive sensors should be greater than three m. Keep sensor away from switches,

routers and other wireless devices to avoid radio interference, more than three meters. The antenna surface of the

microwave module should not be directly facing input AC and output DC to avoid low or high frequency signals

affect the normal operation of microwave sensor's antenna.

(4) Vibration signals will be regarded as moving signals to trigger the sensor. Avoid using objects that vibrate for a

long time around the sensor, such as large metal equipment, pipes, air conditioning outlets, exhaust vents, smoke

exhaust machine ports, shaking fans, etc. Pets in detecting area may trigger sensing.

(5) Sensor is for indoor use only. The waterproof effect for outdoor use will be affected. Wind, rain, and moving

objects around will cause false triggering.

(6) When the sensor is installed in a metal lamp, metal reflective surface, or a narrow enclosed

environment, the microwave will be reflected repeatedly and cause false triggering. Please reduce the sensitivity

or contact the manufacturer for technical support.

(7)This model is suitable for ceiling mounting. If wall mounting, the detecting area will enlarge which makes

microwave penetrate wall or light not turn off, and please change sensitivity to 25%. If 25% sensitivity is useless,

please avoid wall mounting or contact the manufacturer for technical support.

(8) Due to continuous improvement, the contents of this instruction could be changed without prior notice.

(9) Different 0-10V drivers, different low brightness. The light sensitivity threshold is in a sunny environment, no

shadow and ambient light diffuse reflection. Ambient lux level could be different in different environment, weather,

climate, time-of-day and season.

(10) Sensitivity area is related to moving speed of objects, size of moving objects, mounting height,

mounting angle, working environment, reflecting materials and etc.

(11) Given detecting area is typical value that was measured by 165cm high testers in an indoor

open environment.

(12) This product have to use with DC stabilized power supply whose input voltage is stabilized and ripple factor is low(ripple factor is lower than 100mV; load current is greater than 50mA).

(13) When installing in new place, install and test no less than five pieces sensors before mass installation.