

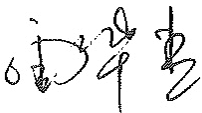



SPECIFICATION

Product Name: High Bay Sensor for Warehouse

Model No.: MC054V RC series
(MC054V RC A, MC054V RC B, MC054V RC C, MC054V RC D)

Issue Date: Nov. 11, 2019

CUSTOMER APPROVED

PRODUCT DIRECTOR APPROVED	SALES CHECKED	R&D CHECKED	PREPARED
			

Shenzhen Merrytek Technology Co.,Ltd

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Tel: +86 (0)755-2305 7253 Fax: +86 (0)755-2786 3012 Website: www.merrytek.com

1. Features



- Operating voltage 120~277V AC, suitable to European and American market.
- Patented microwave antenna, mounting height is 15m Max, suitable to install in most of warehouses.
- Work with 1-10V dimmable LED driver, easy to achieve 2-step or 3-step dimming function.
- Work with remote controller MH10, easy to adjust sensor parameters.

2. Parameter

Input	Operating Voltage Range	108-305V AC, 50Hz/60Hz
	DC Input Voltage	N/A
	Rated Voltage	120-277Vac, 50/60Hz
	No-load Power	N/A
	Stand-by Power	<1W
	Surge Test	L--N: 1kV
Output	Working Mode	ON/OFF function, 1-10V step dimming
	Type of Load	Inductive or resistive Load
	Load Capacity	Inductive load: 400W@120-220Vac, 800W@220-277Vac, Resistive load: 800W@120-220Vac, 1000W@220-277Vac
	Current of Load	N/A
	Max. Surge Capacity	50A (50% I _{peak} , t _{width} =500uS, 277Vac full load, cold start); 80A (50% I _{peak} , t _{width} =200uS, 277Vac, full load, cold start)
Dim Interface	1-10V Dimming	< 50mA (Non-constant source) 10%(1.4-1.6V), 20%(1.9-2.1V), 30%(2.9-3.1V), 50% (4.9-5.1V)
	Synchronous Control	N/A
	High Low-level	N/A
	PWM Control	N/A
Sensor Parameters	Operating Frequency	5.8 GHz ±75 MHz, ISM Band.
	Transmitting power	0.5mW Max.
	Hold time	DIP switch: 5s/30s/1min/3min/20min/30min Remote control: 5s/30s/1min/3min/5min/10min/20min/30min
	Stand-by DIM Level	DIP switch & Remote control: 10%/20%/30%/50%
	Stand-by Period	DIP switch: 0s/1min/3min/10min/30min/+∞ Remote control: 0s/10s/1min/3min/5min/10min/30min/+∞

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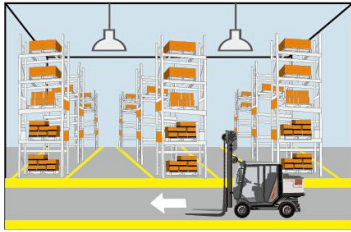
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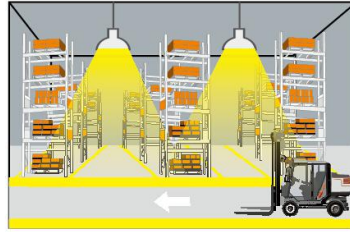
	Detection Area	DIP switch: 100%/50% Remote control: 25%/50%/75%/100%
	Daylight Sensor	DIP switch & Remote control: 5lux/15lux/30lux/50lux/100lux/150lux/Disable (Ambient light diffusion)
	Daylight on/off	N/A
	Detecting Radius	5-7m (mounting height 8m) See note 2
	Mounting Height	15m Max
	Detecting Angle	150°(wall mounting), 360°(ceiling mounting)
Wireless Module	Operating Frequency	N/A
	Transmitting power	N/A
	Transmitting distance	N/A
	Modulation mode	N/A
	Number of coding	N/A
Operating Environment	Operating Temperature	-35℃...+55℃
	Storage Temperature	Temperature: -40℃...+80℃; Humidity: 10%-95% (non-condensing)
Certificate Standards	Safety standards	IEC60669-2-1, IEC60669-1 AS/NZS 60669.1, AS/NZS 60669.2.1 UL60730-1
	EMC standards	EN55015, EN61000-3-2, EN61000-3-3, EN61547 AS/NZS CISPR 15, AS/NZS 4268 FCC Part 15C, Part 15B EN 60950-1, EN301489-1, EN 201489-3, EN300440
	Environmental Requirement	Compliant to RoHS
	Certificate	cULus, CE, SAA, FCC, RED
Others	Wiring	SJTW 5*18AWG, exposed line length: 810-830mm
	IP Rating	IP65
	Protection Class	Class II
	Installation	Independent
	Dimension	(ΦxH)72*59mm
	Package	Instruction+ White box+ White box tags+ Clapboard+ Carton(K=A)
	Net Weight	MC054V RC A: 225g, MC054V RC B:246g, MC054V RC C:225g , MC054V RC D:165g
	Lifetime	50,000h @ Ta Full load
<p>Note</p> <p>1. "N/A"means not available.</p> <p>2. Detection area is effected on volume of motion object and motion speed. The detection area is tested by a 165cm height person and walking speed is 0.5m/s.</p>		

3. Function

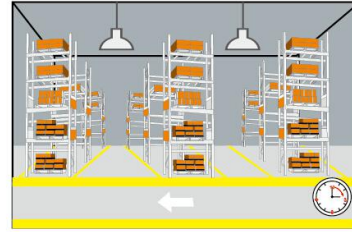
1) On/OFF Function (stand-by period be set to "0"s)



- ① With sufficient ambient light, the light will not be switched on even if with motion signal.

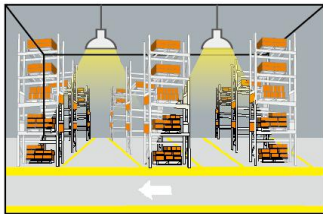


- ② With insufficient ambient light, the sensor switches on the light when motion is detected.

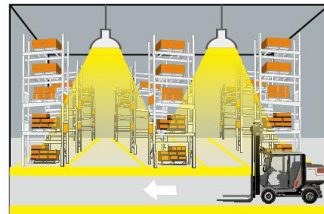


- ③ After elapse of hold time, the sensor switches off the light when no motion is detected.

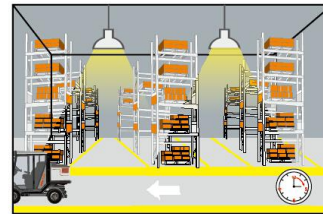
2) 2-step dimming function (stand-by period be set to "+∞")



- ① If there is no motion detected, the light will be remained at a low light level all the time.

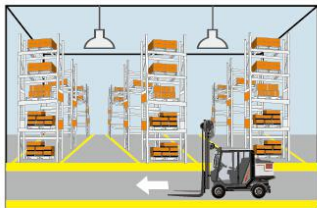


- ② When motion is detected, the sensor will switch on the light to 100% brightness

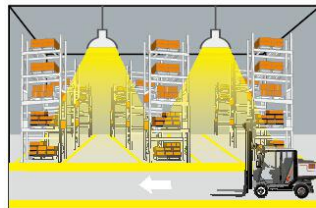


- ③ After elapse of hold time, the sensor dims the light at the present low light level if no motion is detected.

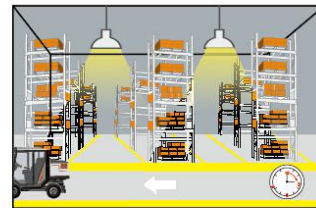
3) 3-step dimming function (stand-by period be set to "10s/1min/3min/5min/10min/30min")



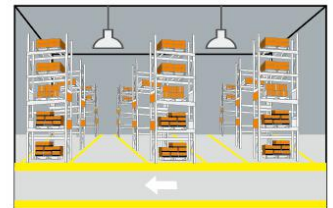
- ① With sufficient ambient light, the light will not be switched on even if with motion signal.



- ② With insufficient ambient light, the sensor switches on the light when motion is detected.



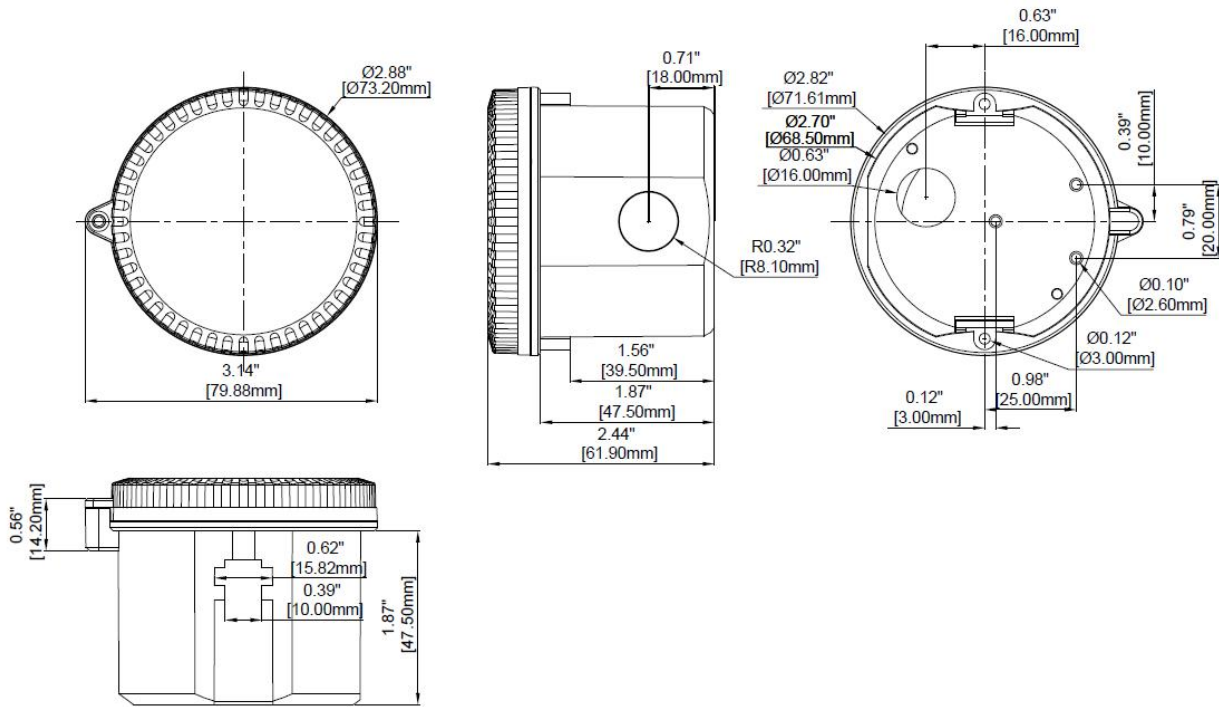
- ③ After elapse of hold time, the sensor dims the light at a low light level if no new motion is detected.



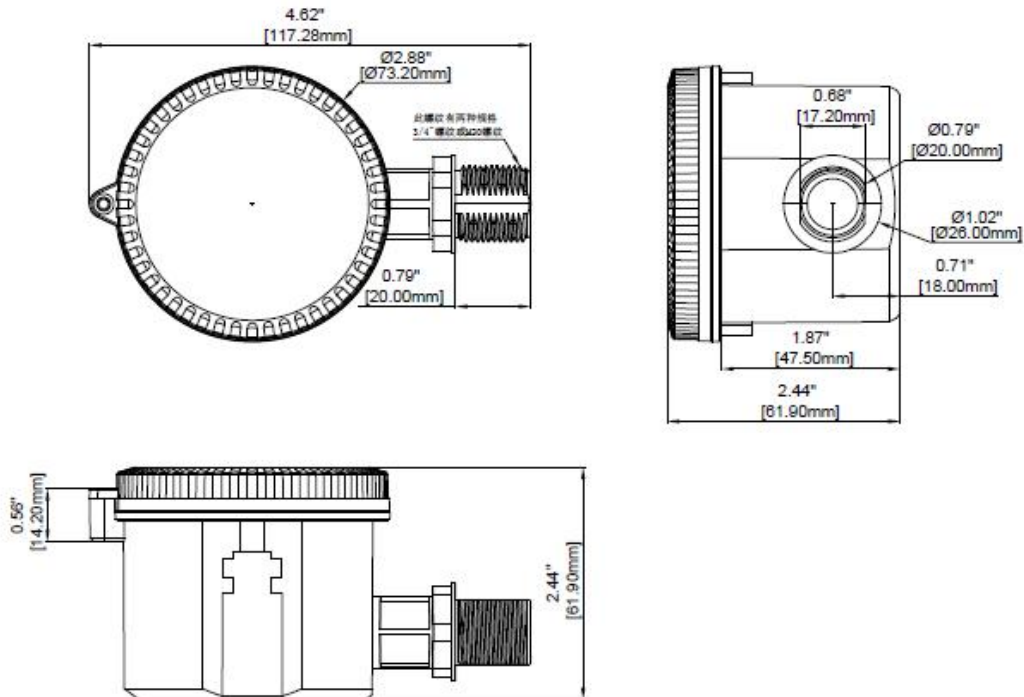
- ④ After elapse of standby period, the sensor switches off the light if no motion is detected in the detection zone.

4. Dimension (mm)

1) MC054V RC A, MC054V RC B, MC054V RC C



2) MC054V RC D



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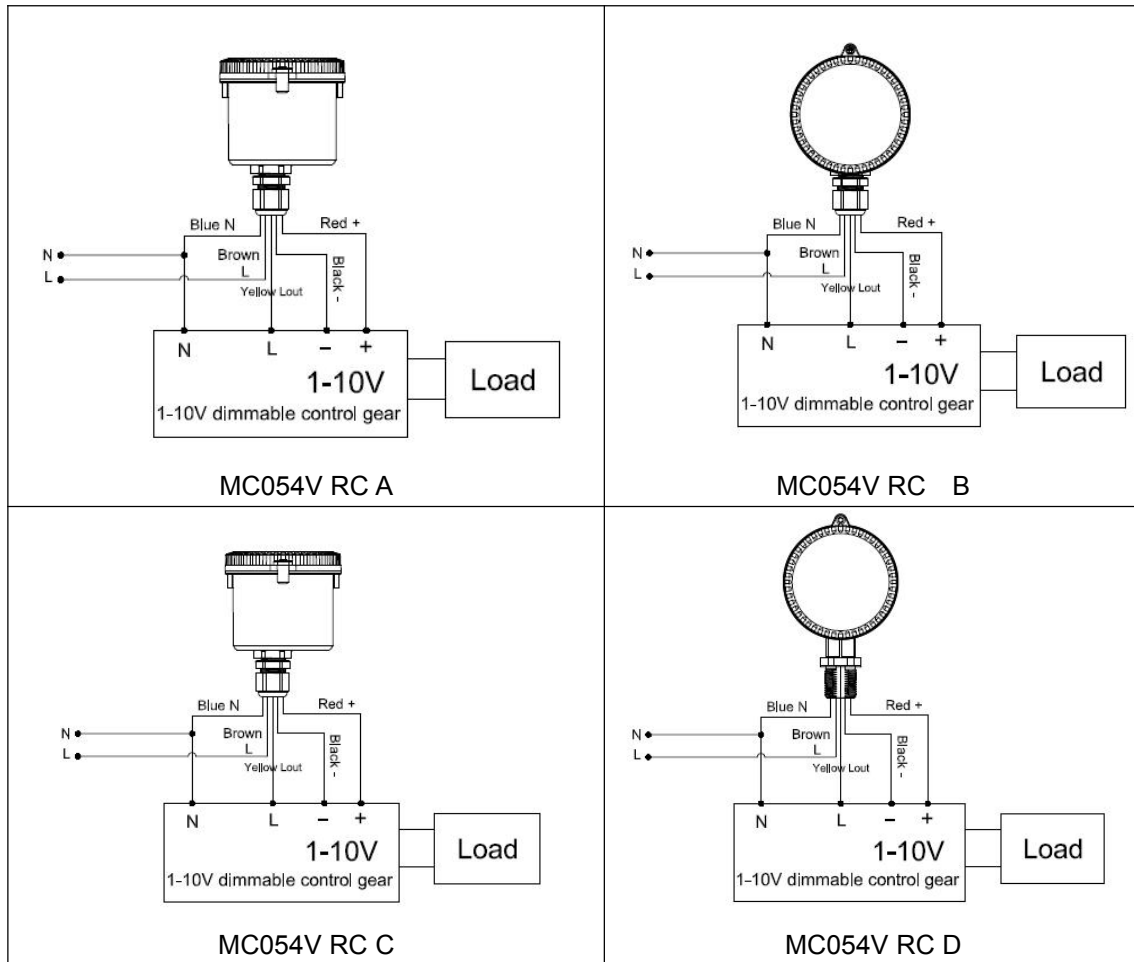
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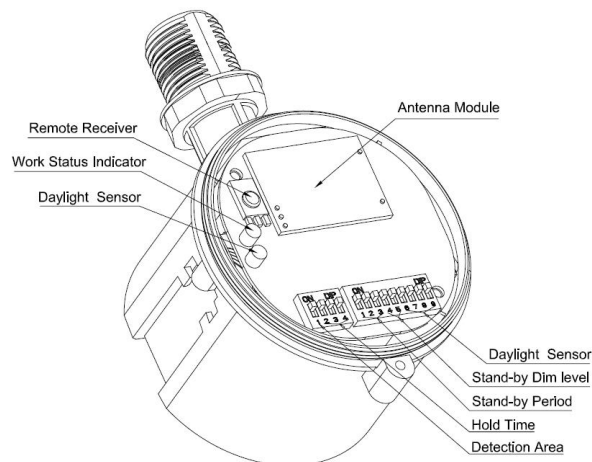
Website: www.merrytek.com

5. Wiring



*The sensor is designed for connect one load only. Connect more than one loads may damage the sensor.

6. Structure



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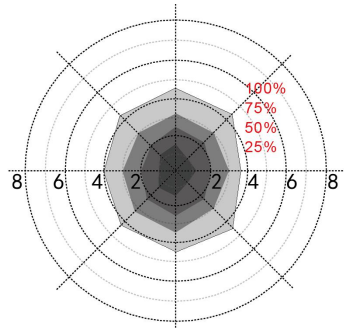
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7. Radiation Pattern

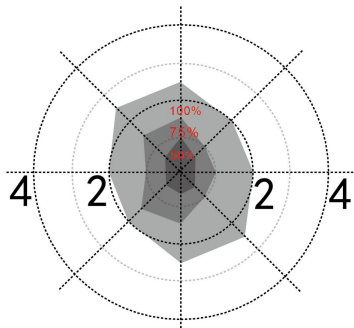
Ceiling mounting

Ceiling mounted height: 3m
Sensitivity: 100%/75%/50%/25%



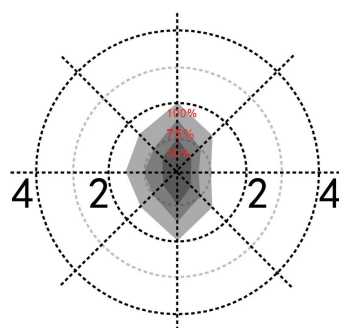
Normal moving (Speed:1m/s)

Ceiling mounted height: 10m
Sensitivity: 100%/75%/50%

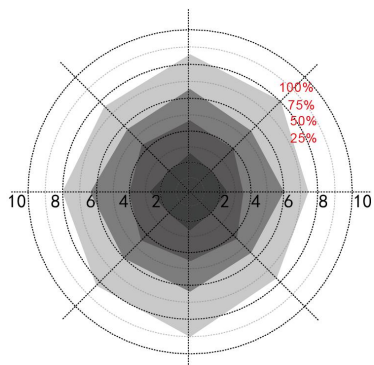


Normal moving (Speed:1m/s)

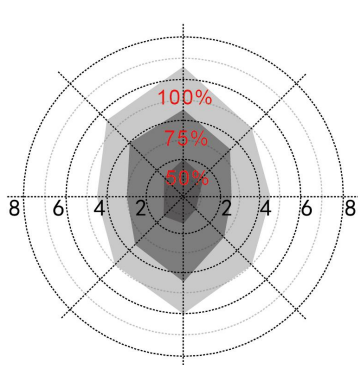
Ceiling mounted height: 15m
Sensitivity: 100%/75%/50%



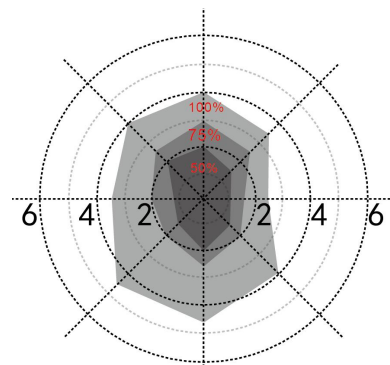
Normal moving (Speed:1m/s)



Slow moving (Speed 0.3m/s)



Slow moving (Speed: 0.3m/s)

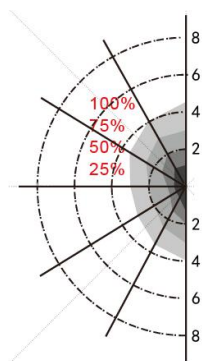


Slow moving (Speed: 0.3m/s)

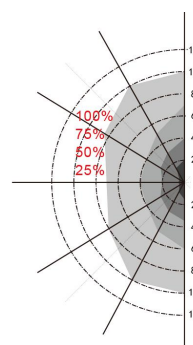
*Only 100%/75%/50% detection sensitivity is workable when installed at 10m & 15m mounting height. 25% sensitivity is not able to detect motion signal.

Wall mounting

Horizon mounted height: 2m
Sensitivity: 100%/75%/50%/25%



Normal moving (Speed: 1m/s)



Slow moving (Speed 0.3m/s)

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8. Remote Control

Remote Control Setting	Button	Remarks																												
		Press the "ON/OFF" button, the light goes to constant on/off mode, sensor is disabled. Press "Reset" "Sensor motion" button to quit from this mode and the sensor starts to work.																												
		Press "Reset" button, all parameters are same as setting of factory settings.																												
		Press "Sensor motion" button, the light quits from the constant on / off mode, and the sensor starts to work (The latest setting stays in validity)																												
		Press "DIM Test" button, the 1-10 V dimming works to test whether the 1-10Vdc dimming ports are connected properly. After 2s, it returns to the latest setting automatically.																												
		"Override DH", and "DH Mode" DIM+,DIM- functions are not applicable for MC054V RC																												
		<table border="1"> <thead> <tr> <th>Scene Options</th> <th>Detection Area</th> <th>Hold Time</th> <th>Stand-by period</th> <th>Stand-by dim level</th> <th>Daylight Sensor</th> <th>Sensitivity model</th> </tr> </thead> <tbody> <tr> <td>QS1</td> <td>100%</td> <td>5min</td> <td>10min</td> <td>10%</td> <td>30Lux</td> <td>Hs</td> </tr> <tr> <td>QS2</td> <td>100%</td> <td>10min</td> <td>30min</td> <td>10%</td> <td>Disable</td> <td>Hs</td> </tr> <tr> <td>QS3</td> <td>100%</td> <td>20min</td> <td>30min</td> <td>10%</td> <td>Disable</td> <td>Hs</td> </tr> </tbody> </table> <p>Note: Detection area / Hold time /Stand-by period /Stand-by dim level / Daylight sensor can be adjusted by pressing the corresponding button. The latest setting will stay valid.</p>	Scene Options	Detection Area	Hold Time	Stand-by period	Stand-by dim level	Daylight Sensor	Sensitivity model	QS1	100%	5min	10min	10%	30Lux	Hs	QS2	100%	10min	30min	10%	Disable	Hs	QS3	100%	20min	30min	10%	Disable	Hs
Scene Options	Detection Area	Hold Time	Stand-by period	Stand-by dim level	Daylight Sensor	Sensitivity model																								
QS1	100%	5min	10min	10%	30Lux	Hs																								
QS2	100%	10min	30min	10%	Disable	Hs																								
QS3	100%	20min	30min	10%	Disable	Hs																								
		Press the "TEST 2S" button can enter the test mode any time. At the mode, the sensor parameters as below: Detection Area is 100%, Hold Time is 5s, Stand-by Dim Level is 10%, Stand-by Period is 0s, daylight sensor disable. This function only for testing. Quit the mode by pressing "RESET" or any other function buttons.																												
		NA																												
		Daylight Sensor Set up daylight threshold. 5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/ Disable.																												
		Stand-by period Set up stand-by time: 0S/10S/1min/3min/5min/10min/30min/+∞																												
		Hold time Set up hold time: 5S/30S/1min/3min/5min/10min/20min/30min																												
		Stand-by dim level Set up stand-by dim level: 10%/20%/30%/50%																												
		Detection Area Set up detection area: 25%/50%/75%/100%																												
		Remote Distance Toggle button can set the remote distance of remote control and sensor.																												

9. DIP Switch Setting

Detection Area (Sensitivity)

	1	
I	ON	100%
II	-	50%

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Hold Time

	2	3	4	
I	ON	ON	ON	5s
II	-	ON	ON	30s
III	ON	-	ON	1min
IV	-	-	ON	3min
V	ON	ON	-	20min
VI	-	-	-	30min

Stand-by Period

	1	2	3	
I	ON	ON	ON	0s
II	-	ON	ON	1min
III	ON	-	ON	3min
IV	-	-	ON	10min
V	ON	ON	-	30min
VI	-	-	-	+∞

Stand-by Dim Level

	4	5	Brightness%	Voltage of 1-10V interface
I	ON	ON	10%	1.4-1.6V
II	ON	-	20%	1.9-2.1V
III	-	ON	30%	2.9-3.1V
IV	-	-	50%	4.9-5.1V

Daylight Sensor

	6	7	8	9	
I	ON	ON	ON	ON	5Lux
II	-	ON	ON	ON	15Lux
III	ON	-	ON	ON	30Lux
IV	-	-	ON	ON	50Lux
V	ON	ON	-	ON	100Lux
VI	ON	ON	ON	-	150Lux
VII	-	-	-	-	Disable*

*Disable means the daylight sensor does not work. The sensor will turn on light once motion is detected regardless of ambient light level.

10. Initialization

1/ On/Off function /3-step dimming function:

After power on, the sensor automatically turns on light at 100% brightness. After 10sec, it turns off the light. During the initialization, the sensor is not able to detect movement.

2/ 2-step dimming function:

After power on, the sensor automatically turns on light at 100% brightness. After 10sec, it dims the light to a low light level (set by stand-by dim level). During the initialization, the sensor is not able to detect movement.

11. Factory Setting

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

12. Application Notice

1/ The sensor is designed for indoor use only. Outdoor use for a long time may reduce the waterproof effects. The raining or wind blowing may trigger the microwave sensor even if without human motion when outdoor use.

2/ The distance between any two sensors should be at least 3m to avoid interference with each other.

3/ When the microwave sensor is installed in a metal lighting fixture or space with large reflector, for example a warehouse with metal roof, the microwave will be reflected and cause the lights permanently illuminated even if

without motion signal. Please reduce the detection area (sensitivity) to solve the problems, or contact the microwave sensor manufacturer to provide technical support.

4/ Make sure the sensor not close to or be blocked by high density material, such as metal, glass, concrete walls etc. The materials will reduce or block microwave and cause false trigger.

5/ Make sure there are no fans or other vibrating objects in installation area. The movements will trigger sensor as well.

13. Version Change

Version	Date	Description
A0	March 31, 2016	Released new product
A1	Nov.11 2019	Update dimension of housing