

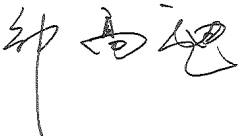

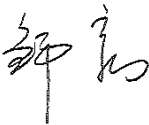
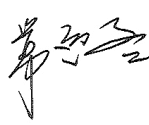
# SPECIFICATION

Product Name: High Bay Sensor for Warehouse

Model No.: MC609V RC series  
(MC609V RC A, MC609V RC C, MC609V RC D)

Issue Date: March 28, 2018

CUSTOMER APPROVED

PRODUCT DIRECTOR APPROVED	SALES CHECKED	R&D CHECKED	PREPARED
			

Shenzhen Merrytek Technology Co.,Ltd

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Website: [www.merrytek.com](http://www.merrytek.com)

## 1. Features



- Operating voltage 120/277/347V AC, suitable to North 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 MH01, easy to adjust sensor parameters.
- 5 years warranty

## 2. Parameter

Input	Operating Voltage Range	108-381V AC, 50Hz/60Hz
	DC Input Voltage	N/A
	Rated Voltage	120/277/347Vac, 50/60Hz
	No-load Power	N/A
	Stand-by Power	<1.5W
	Surge Test	L--N: 2kV
Output	Working Mode	ON/OFF function, 1-10V step dimming
	Type of Load	Inductive or Resistive Load
	Load Capacity	120VAC: 3.6A; 277VAC: 3.4A; 347VAC: 3.3A
	Current of Load	N/A
	Max. Surge Capacity	50A (50% I <sub>peak</sub> , t <sub>width</sub> =500uS, 277Vac full load, cold start); 80A (50% I <sub>peak</sub> , t <sub>width</sub> =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.

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	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/+∞
	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	5-8m (mounting height 8m) See note 2
	Mounting Height	15m Max
	Detecting Angle	150°(wall mounting) 360°(ceiling mounting)
<b>Wireless Module</b>	Operating Frequency	N/A
	Transmitting power	N/A
	Transmitting distance	N/A
	Modulation mode	N/A
	Number of coding	N/A
<b>Operating Environment</b>	Operating Temperature	-35℃...+55℃
	Storage Temperature	Temperature: -40℃...+80℃; Humidity: 10%-95% (non-condensing)
<b>Certificate Standards</b>	Safety standards	UL 60730
	EMC standards	FCC PART15
	Environmental Requirement	Compliant to RoHS
	Certificate	cULus
<b>Others</b>	Wiring	Input: STW, 3*18AWG exposed line length: 810-830mm 1-10V DC: SJTW, 2*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	MC609V A: 315g, MC609V C:343g , MC609V D:175g
	Lifetime	5 years warranty @Ta 230V full load

**Note**

1. "N/A" means not available.
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.

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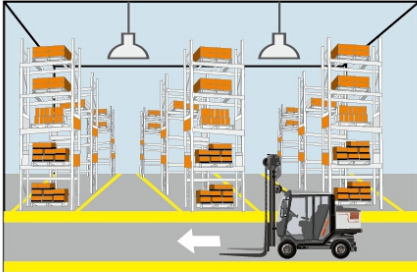
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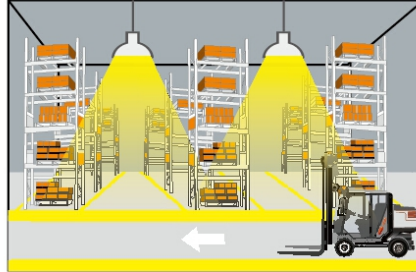
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### 3. Function

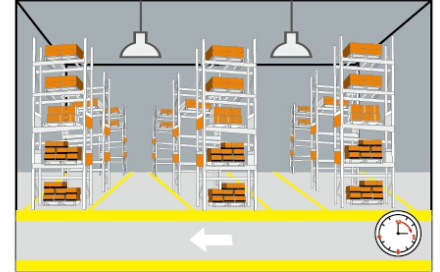
#### 1) On/OFF Function (stand-by period be set to "0"s)



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

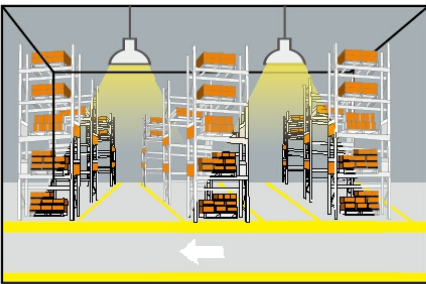


- ② With insufficient ambient light, the sensor switches on the light when motion is detected.

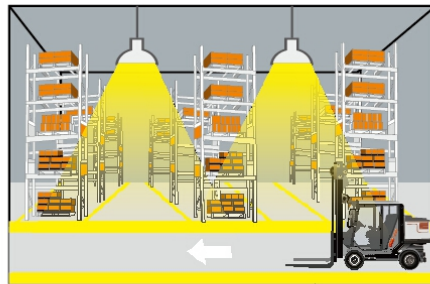


- ③ After elapse of hold time, the sensor switches off the light when no motion is detected.

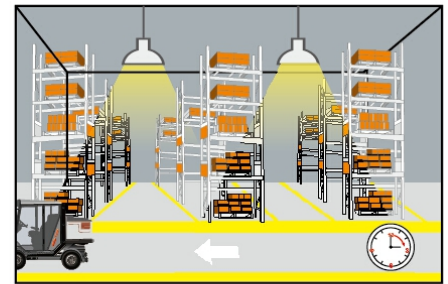
#### 2) 2-step dimming function (stand-by period be set to "+∞")



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

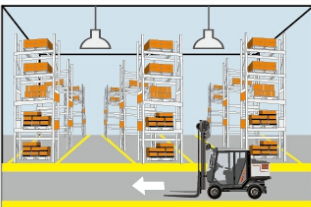


- ② When motion is detected, the sensor will switch on the light to 100% brightness

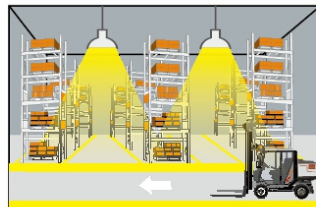


- ③ After elapse of hold time, the sensor dims the light at the present low light level if no motion is detected.

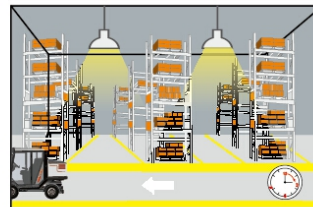
#### 3) 3-step dimming function (stand-by period be set to "10s/1min/3min/5min/10min/30min")



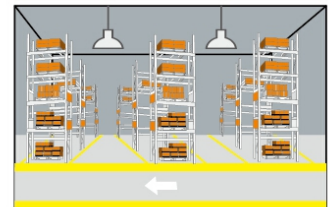
- ① With sufficient ambient light, the light will not be switched on even if with motion signal.



- 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.

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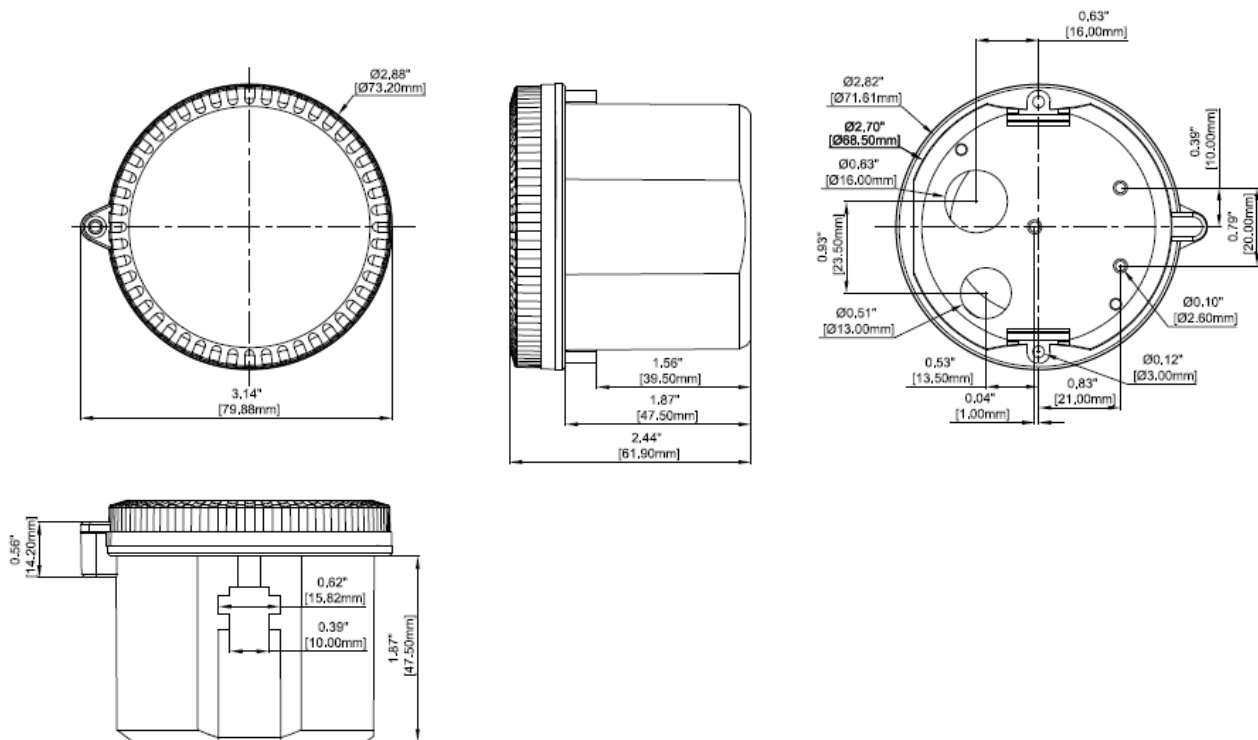
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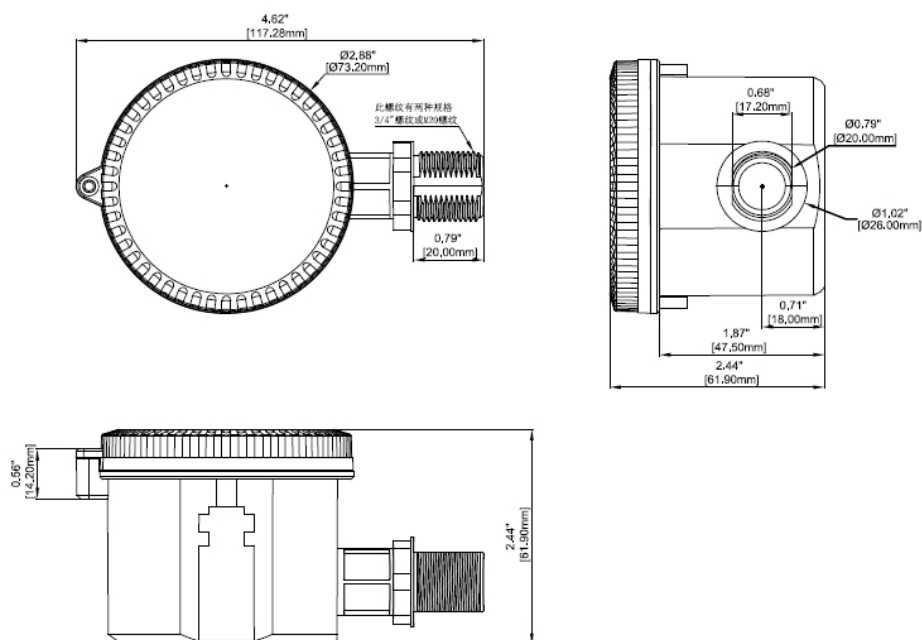
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## 4. Dimension (mm)

1) Bottom hole mounting : MC609V RC A, MC609V RC C



2) Side screw mounting: MC609V RC D



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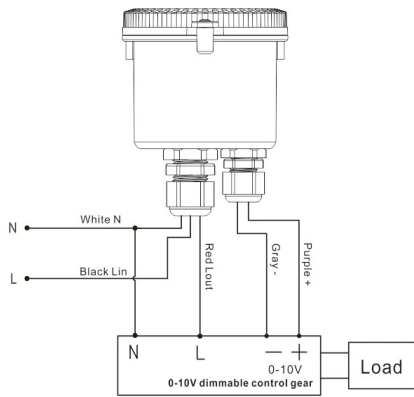
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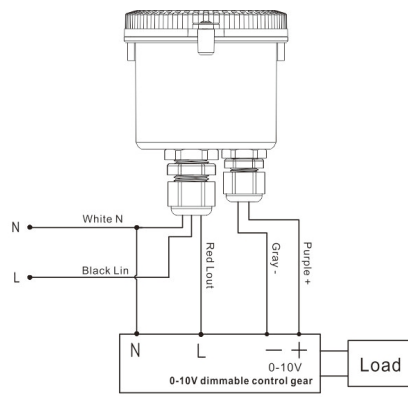
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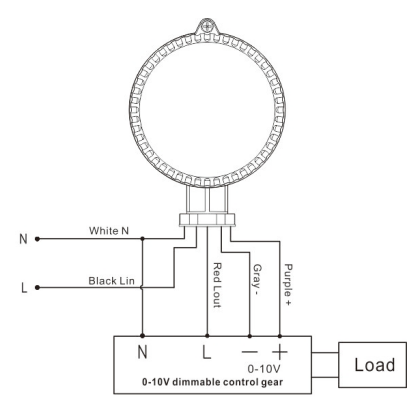
## 5. Wiring



**MC609V RC A**



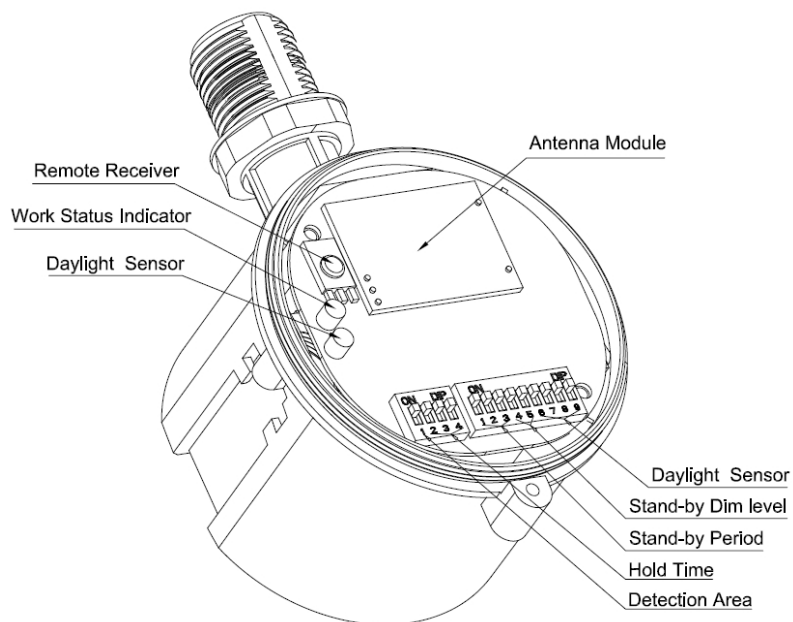
**MC609V RC C**



**MC609V RC D**

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

## 6. Structure



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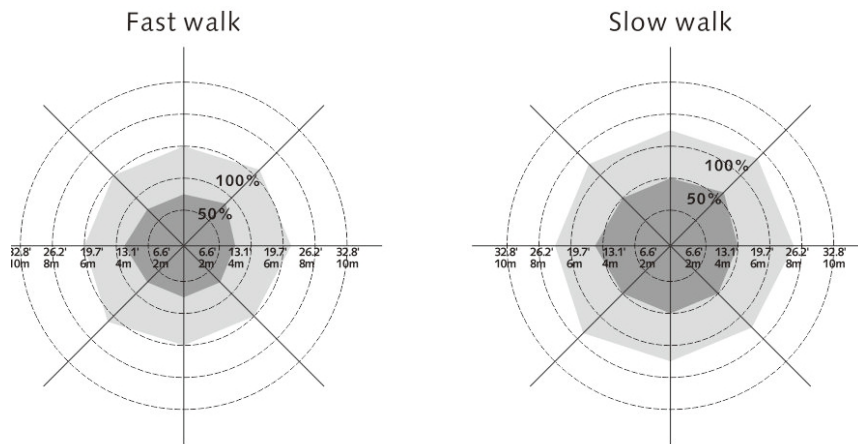
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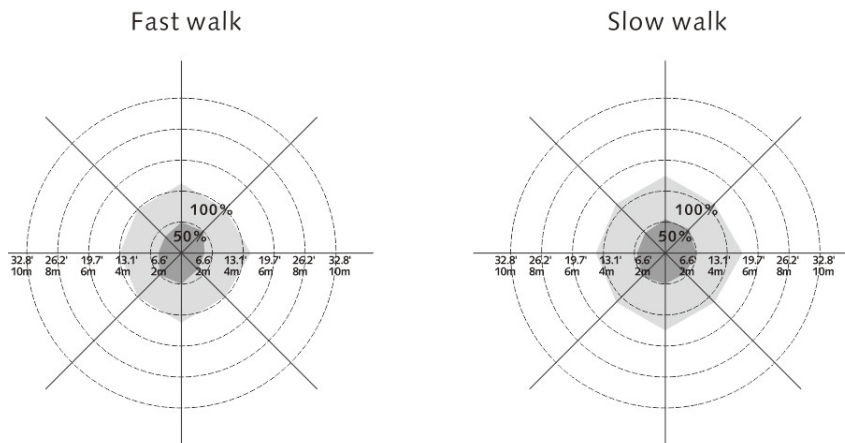


## 7. Radiation Pattern

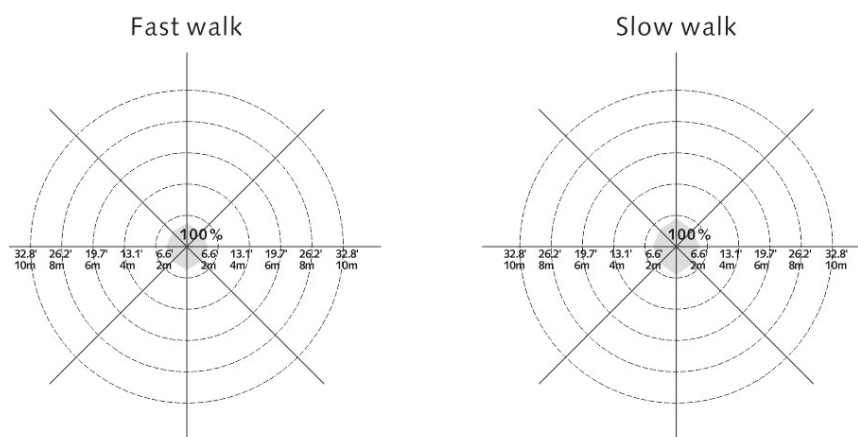
Ceiling mounting



Mounting height:9.8ft/3m



Mounting height:29.5ft/9m



Mounting height:49.2ft/15m

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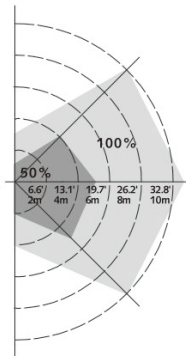
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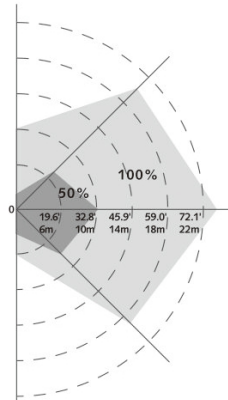
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## Wall mounting

Fast walk



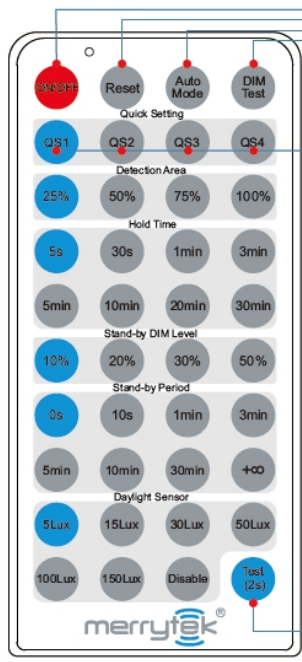
Slow walk



Wall Mounting Height: 6.6ft/2m

Note: Speed of slow walking:0.3m/s; Speed of fast walking:1m/s

## 8. Remote Control



Button	Remarks
ON/OFF	Press the "ON/OFF" button, the light goes to constant on or constant off mode, the sensor is disabled. Press "Reset" or "Auto Mode" button to quit from this mode.
Reset	Press "Reset" button, all parameters are the same as the DIP switch setting.
Auto Mode	Press "Auto Mode" button, the sensor starts to work and all parameters setting will remain the same as the previous status before the light is switched on/off.
DIM Test	Press "DIM Test" button to test the dimming function. The sensor will dim automatically and return to the normal work mode.
Test (2s)	The button "Test(2s)" is for factory testing purpose only. The sensor will go in to test mode, Detection sensitivity: 100% Hold time: 2sec stand-by dim level:10% Stand-by period: 0s Daylight sensor: Disable Test mode can be disabled by pressing any button.

Scene Options	Detection Area	Hold Time	Stand-by period	Stand-by dim level	Daylight Sensor
QS1	100%	30s	1min	10%	5Lux
QS2	100%	1min	3min	10%	10Lux
QS3	100%	5min	10min	10%	30Lux
QS4	100%	10min	30min	10%	Disable

**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.

The Microwave Sensor's green working light will flash 3 times when the remote control is set successfully.



## 9. DIP Switch Setting

Detection Area (Sensitivity)

	1	
I	ON	100%
II	-	50%

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	-	-	-	+∞

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### 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

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## 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	April 11, 2017	Released new product
A1	March 28, 2018	1. Add voltage of 1-10V interface 2. Change 5C cable to 3C + 2C cable.