

Specification

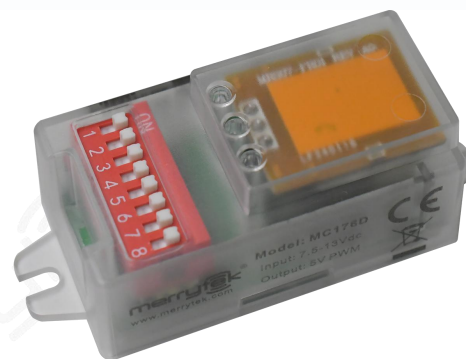
Product Name: DC controller

Product Model: MC176D/MC176D 99

Versions	Release/ change Date	Reason	Publishing
V1.0	2024.03.12		James.Guo
V2.0	2024.07.31	Add model	James Guo

【Product Features】

- 7.5-13VDC Input , Matching DC power or With 12VDC
- LED driver supply for auxiliary power output
- 5V PWM dimming signal , 3 steps or 2 steps dimming
- All motion sensor parameter setting by DIP (MC176D)
All motion sensor parameter setting by DIP and remote (MC176D 99)
- Low impedance antenna module with light guide column design small size, can reduce the opening of the lamp board;
- Daylight priority function



【Parameter】

Input			
Rated voltage	7.5-13VDC		
Working current	16±2mA		
Ripple voltage	< 100mVp-p		
Output			
Output signal	5V PWM dimming signal/0-10V dimming signal		
Daylight Sensor			
Daylight sensor	Daylight threshold	5Lux/15Lux/50Lux/Disable	
	Daylight priority	ON	OFF
		5Lux	55-105Lux
		15Lux	65-115Lux
		50Lux	100-150Lux
Dimming level	25%		
Sensing Parameters			
Working frequency	5.8GHz ±75MHz, ISM band		
Transmit power	1mW Max.		
Detection Area	100%/75%/50%/25%		
Hold Time	5s/90s/3min/10min		
Stand-by period	0s/30s/10min/+∞		
Detection range (radius)	Ceiling installation 3m high: r≥4m@0.3m/s, r≥2.5m@1m/s; Horizontal installation 2m high: r≥8m@0.3m/s, r≥4m@1m/s Test conditions : the product is set to 100% sensitivity , and there is no obvious occlusion in the room of 60 m²		
Installation height	3m (6m Max)		
Environment			
Working temperature	Built-in: -25~60℃		
Storage temperature	-40℃...80℃, humidity ≤85% (non-condensing)		

Certification Standards

Certified	CE, RED (Pending)
Environmental requirements	Comply with RoHS 2.0 , Reach requirements
IP Rating	IP20

Other

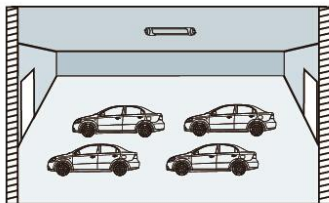
Wiring	3pin 2.0mm terminal
Installation requirements	built-in installation
Packaging requirements	Bubble bag + partition + outer box (K=A)
Net weight	13 ±2g
Lifetime	5 Years Warranty@Ta

【Function description】

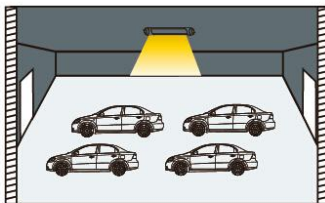
MC176D

☒ ON/OFF function	N/A
☒ Two-step dimming function	Stand-by Period be set to “+∞”
☒ Three-step dimming function	Stand-by Period be set to “30S/10min”
☐ Daylight harvesting	N/A
☒ Daylight priority	Stand-by Period be set to “+∞”

On/OFF Function (set Stand-by Period to “0s”)



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

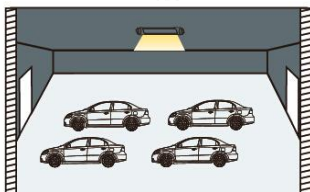


② With insufficient ambient light, the sensor switches on the light when motion is detected.

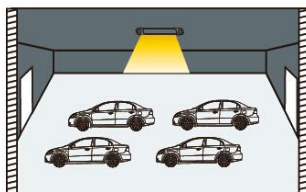


③ After elapse of hold time, the sensor switches off the light when no motion is detected.

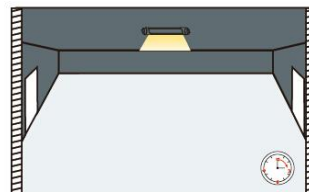
2-step Dimming Function (set Stand-by Period to “+∞”)



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

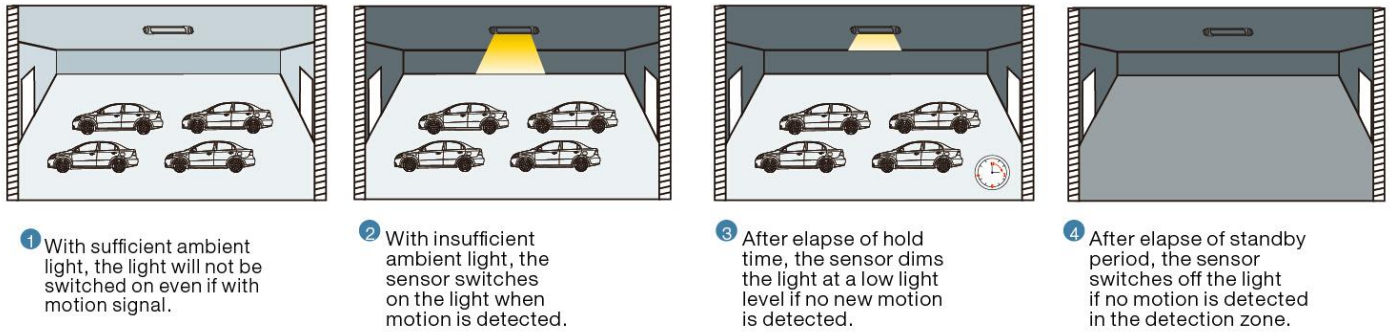


② When motion is detected, the sensor will switch on the light to 100% brightness

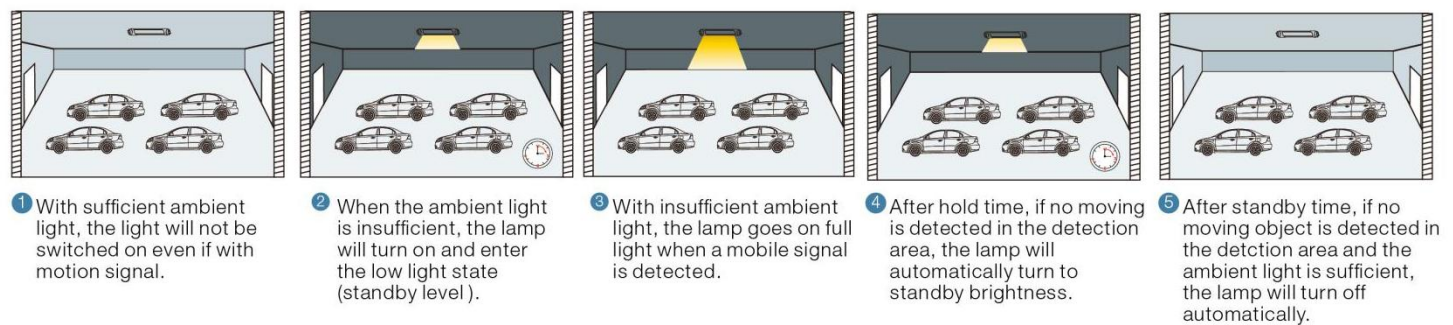


③ After elapse of hold time, the sensor dims the light at the present low light level if no motion is detected.

3-step dimming function (stand-by period be set to “10S/1min/3min/5min/10min/30min”)

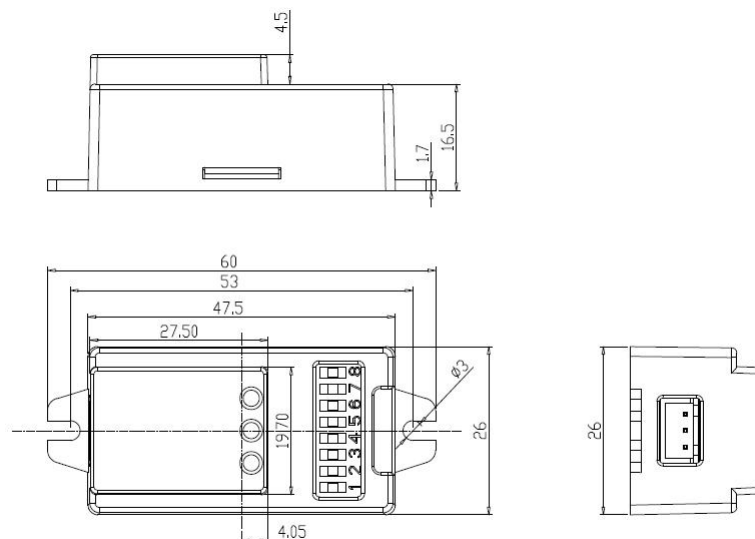


Daylight Priority (MH10 remote control long press 3S “DH Mode”, and Daylight Sensor be set to “5lux/15Lux/30Lux/50Lux/100lux/150lux”, other sensor parameters can be set actual needs)

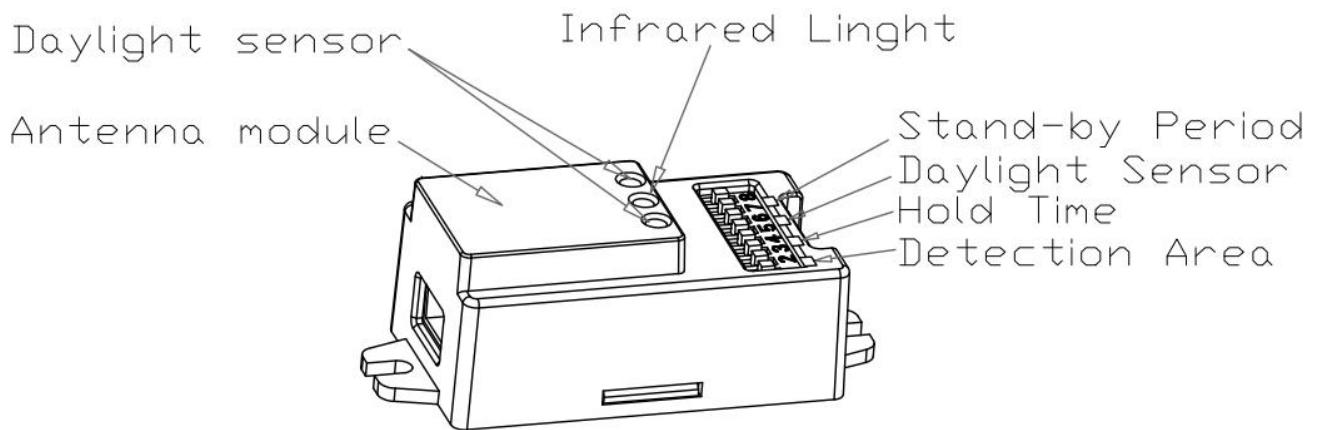
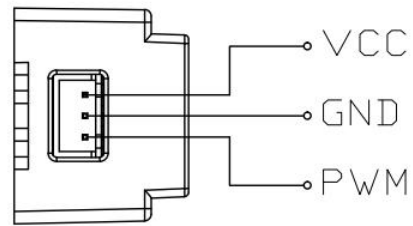


【Diagram】

● Dimension(mm)



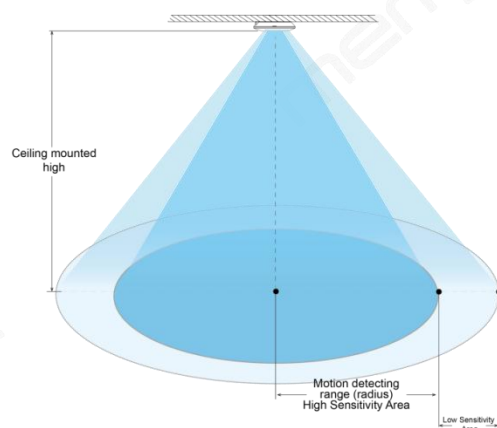
● Wiring, Function



【DIP Switch setting】

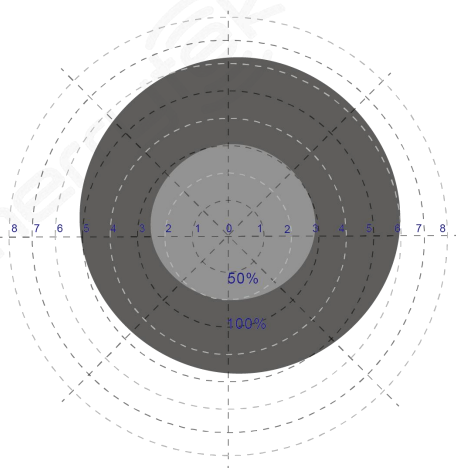
	Detection Area			Hold Time			Daylight Sensor				Stand-by period		
	1	2		3	4		5	6	Turn on	Turn off	7	8	
I	ON	ON	100%	ON	ON	5S	ON	ON	5Lux	15Lux	ON	ON	0S
II	-	ON	75%	-	ON	90S	-	ON	15Lux	50Lux	-	ON	30S
III	ON	-	50%	ON	-	3min	ON	-	50Lux	100Lux	ON	-	10min
IV	-	-	25%	-	-	10min	-	-	Disable		-	-	+∞

● radiation diagram

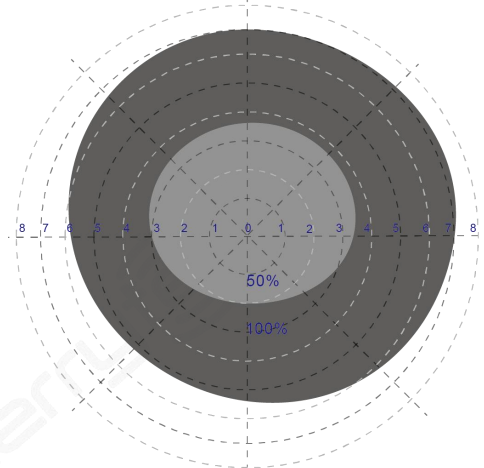


● radiation diagram

Ceiling installation 3m high, indoor 60 m² without obvious shelter, testing personnel: 55kg, 160cm

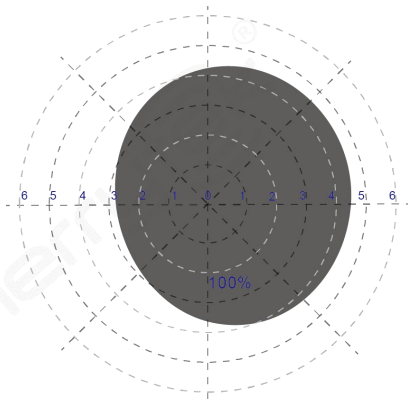


Fast walking speed: 1m/s

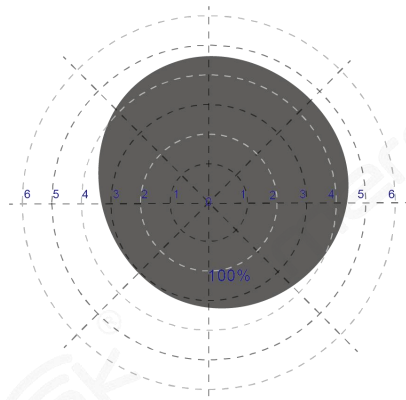


Slow walking speed: 0.3m/s

Ceiling installation 6m high, outdoor without obvious shelter, testing personnel: 55kg, 160cm

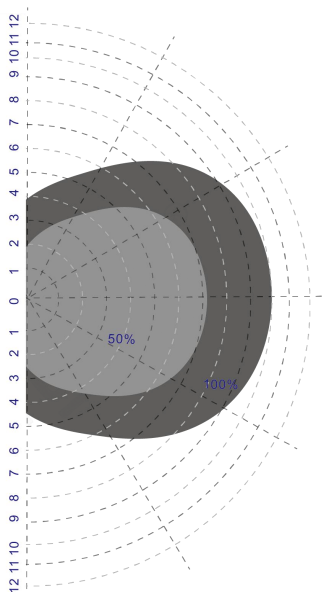


Fast walking speed: 1m/s

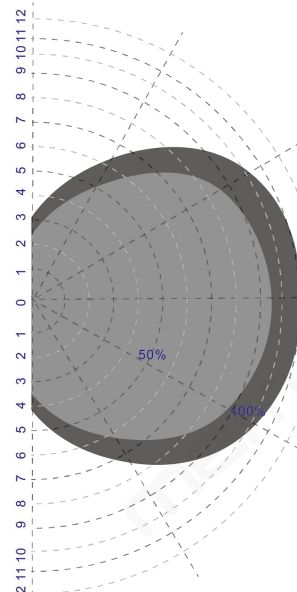


Slow walking speed: 0.3m/s

Wall mounting 2m high, outdoor without obvious shelter, testing personnel: 55kg, 160cm



Fast walking speed: 1m/s

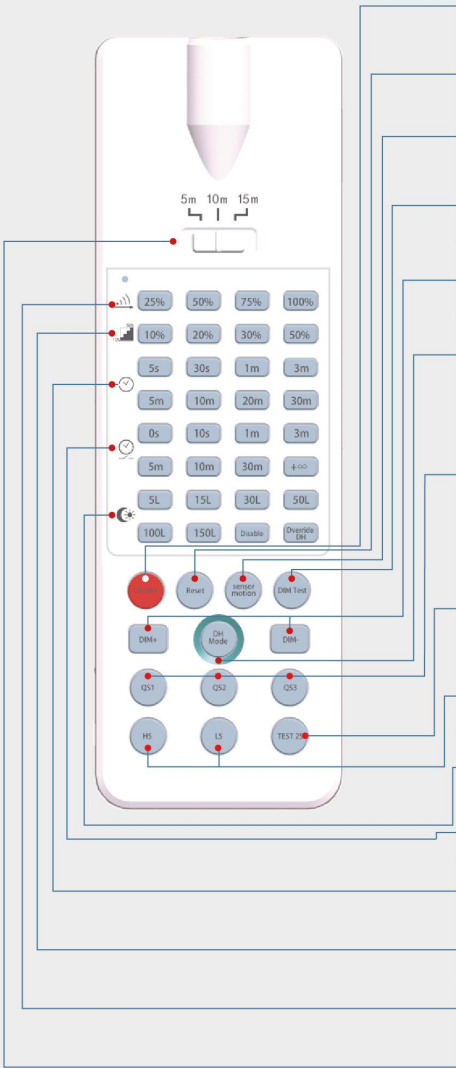


Slow walking speed: 0.3m/s

【Remote Controller MH10】



MH10 Instruction

Remote Control Setting	Button	Remarks																												
		Press the "ON/OFF" button, the light enters the constant ON/OFF mode, and the sensing function is disabled. In ON/OFF mode, DIM+/DIM- function is available, it maintains the same brightness after powering on again. Power off under NO mode and then power on, the lamp enters constant OFF mode. Power off under constant ON mode and then power on, the load lamp lights then power on																												
		Press "Reset" button, all parameters are same as setting of DIP switch or 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 10Vdc dimming ports are connected properly. After 2s, it returns to the latest setting automatically.																												
	 	Short press to transmit a dimming signal, and the brightness of the lamp will be adjusted with +/-5% each time; dimming range:50%-100 %. (Only available for daylight priority function sensor) Note: the maximum brightness can be set with this button;																												
		Long press "DH Mode" >3s to enter the daylight priority function; Press "Reset" quit the daylight priority function																												
	  	<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>Sensor</th><th>Induction 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> Note: Users can press any button to adjust parameters, subject to the last setting. When the sensor does not have the above parameter function, the parameter setting is invalid. Hold time, dim level are not applicable to ON/OFF sensor. Sensor mode is not available for low installation sensor.	Scene Options	Detection Area	Hold Time	Stand-by period	Stand-by Dim level	Sensor	Induction 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	Sensor	Induction model																							
	QS1	100%	5min	10min	10%	30Lux	Hs																							
	QS2	100%	10min	30min	10%	Disable	Hs																							
	QS3	100%	20min	30min	10%	Disable	Hs																							
		Press the "RESET" and then Press the "TEST 2S" bottom can enter the test mode any time At the mode the sensor parameters as below: Detection Area is 100%, Hold Time is 2s. 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.																												
	 	N/A																												
		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/20min/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 bottom can set the remote distance of remote control and sensor.																													

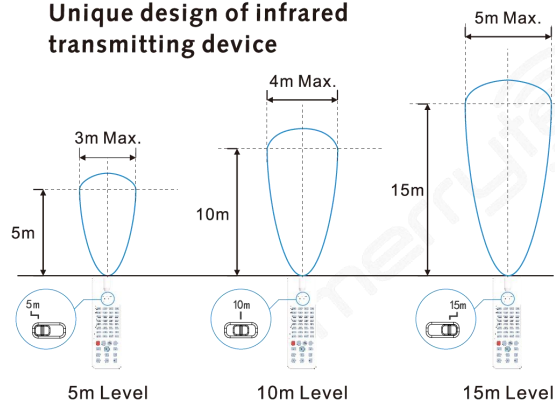
Remote control and code setting conversion

1. DIP switch setting convert to remote control Press any bottom except "RESET" on the remote control, and the sensor settings convert to the function currently selected by the remote control.
(No function button settings invalid)

2 remote control convert to DIP switch setting

- Press the "RESET" button on the remote control, and all settings return to the DIP switch settings of the sensor.
- Turn off the power, toggle any DIP switch, connect to the power, and all settings return to the DIP switch settings when supply power again.

Unique design of infrared transmitting device



【Initialization】

The sensor will turn on the light at 100% brightness for the first time, and turn it off after 10 seconds. During the initialization period, no external motion sensing signal will be detected.

【Default setting】

Sensitivity: 100% Hold time: 5s Daylight Sensor: Disable; Stand-by period: 0S; Stand-by Dim Level: 25%

【Application Notice】

- The sensor should be installed by a professional electrician. Please cut off the power before installing, wiring, changing the setting of the DIP switch, etc.
- The detection distance is related to factors such as the moving speed of the moving object, the size of the moving object, the installation height, the installation angle, whether the installation environment is open, and the material of the reflector. The detection distance given in the specification is a typical value, which is 165cm/65kg tester, and it is tested in an open indoor environment
- When the microwave sensor is installed on the wall, the detection distance will be greatly increased compared with that installed on the ceiling. If you use the wall installation method, please reduce the sensitivity to use or contact our company to confirm the use settings. The light sensitivity threshold is in a sunny environment, no shadows, and ambient light diffuse reflection conditions. In different time periods, climates, and environments, the illuminance value detected by the light sensor may be different
- Sensor parameters may need to be reconfigured in different installation environments, please refer to the following instructions or contact the manufacturer
- This sensor is only for indoor use, outdoor wind and rain, and surrounding moving objects will cause false triggering
- The installation height of the sensor product cannot exceed 6 meters, and the optimal height is 3 meters; the distance between the two sensors should be greater than 3 meters
- When the sensor is installed in a metal lamp, on a metal reflective surface, or in a narrow closed environment, microwaves will be reflected multiple times and cause false triggering. Please reduce the sensor sensitivity or contact the manufacturer for technical support.
- Please make sure that there are no moving signals such as fans, DC motors, sewer pipes, air outlets, etc. around the sensor, otherwise the sensor may cause false triggering.
- Microwaves cannot penetrate metal, avoid installing in closed or semi-closed metal lamps, and there should be no metal or glass blocking the product
- Sensor with different PWM / 0-10V driver, low light effect may be different
- A DC regulated power supply with stable output voltage and low ripple coefficient must be used. The ripple of the power supply should be less than 100mV ; the load current should be greater than 25mA
- Product specifications and parameters may be optimized without prior notice