

Specification

Product Name: **Networking controller (Microwave)**

Product Model: **MC087D 99 B**

Versions	Release/ change Date	Reason	Publishing
V1.0	2024.09.27	First version	James.Guo

【Product Features】

- Grouping networking by 2.4G wireless, no need pairing or gateway.
- Patented di-pole microwave antenna, no false trigger when installed below metal LED tray.
- Super-narrow microwave sensor head, suitable to be fixed in slim LED fixtures.
- All sensor parameters can be set by remote control.
- Output 0-10V dim or PWM dim, 2-step/3-step dim function.
- 6m Max. mounting height.



【Parameter】

Input				
Rated voltage	12±1VDC			
Working current	55 ± 5mA			
Ripple voltage	< 100mVp-p			
Output				
Output signal	○0-10V Dimming Signal		○PWM Dimming Signal	
Sensing parameters				
Working frequency	5.8GHz ±75MHz, ISM band			
Transmit power	1mW Max.			
Detection Area)	100% /75%/50%/25% (MH17) ; 100% / 50%/25% (MH15)			
Hold Time	30s/1min/3min/5min/10min/20min/30min (MH17) ; 30s/1min/3min (MH15)			
Stand-by Period	0s/10s/1min/3min/5min/10min/30min/+∞ (MH17) ; 5min/10min/ +∞ (MH15)			
Daylight Sensor	Daylight threshold	5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/999Lux(Disable)(MH17) 15Lux/ 50Lux/ (Disable)(MH15) (Ambient diffusion status)		
	Daylight Priority	ON	OFF	
		5Lux	55-105Lux	MH17
		15Lux	65-115Lux	MH17;MH15
		30Lux	80-130Lux	MH17
		50Lux	100-150Lux	MH17;MH15
		100Lux	150-250Lux	MH17
	150Lux	200-300Lux	MH17	
MH17press "P" key enable daylight priority mode;MH15;MH15 Stan-by period time set "+∞"enable daylight priority mode				
Stand-by DIM Level	10%/ 20%/ 30%/ 50% (MH17);10%/ 30%(MH15)			
Detection range (radius)	Ceiling Mounting(height: 3m): 0.3m/s ≥3m, 1m/s ≥2.5m Wall Mounting(height: 2m): 0.3m/s ≥5m, 1m/s ≥3m Test conditions : the product is set to 100% sensitivity , and there is no obvious occlusion in the room of 60 m ²			
Installation height	3m (6m Max)			

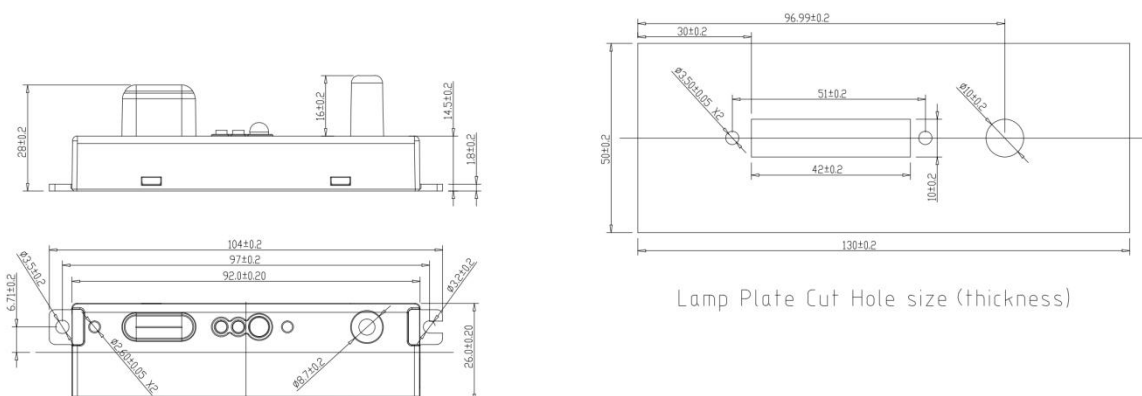
Wireless Module	
Operating Frequency	2.400-2.483GHz
Transmitting Power	6dBm
Group	One group max nodes 32 Pcs
Transmitting Distance	15m MAX(Point-to-point open area transmission distance)
Environment	
Working temperature	Built-in: -25~60℃
Storage temperature	-40℃~80℃, humidity ≤85% (non-condensing)
Certification Standards	
Certified	CE
Environmental requirements	Comply with RoHS 2.0 , Reach requirements
Degree of protection	IP20
Other	
Wiring	3pin 2.0mm terminal
Installation requirements	built-in installation
Packaging requirements	Clapboard + paper carton(K=A)
Net weight	23.5±3g
Life	5 Years Warranty@Ta

【Function description】

☑ ON-OFF function	Stand-by Period be set to “0s”
☑ 2-step dimming	Stand-by Period be set to “+∞”, Daylight sensor be set to “High”
☑ 3-step dimming	Stand-by Period be set to “5min/10min”
○ Daylight harvesting	N/A
☑ Daylight priority	Stand-by Period be set to “+∞”, Daylight sensor be set to “LOW/MED”
☑ Grouping	Remote group “1-8” and set Rx signal for sensor

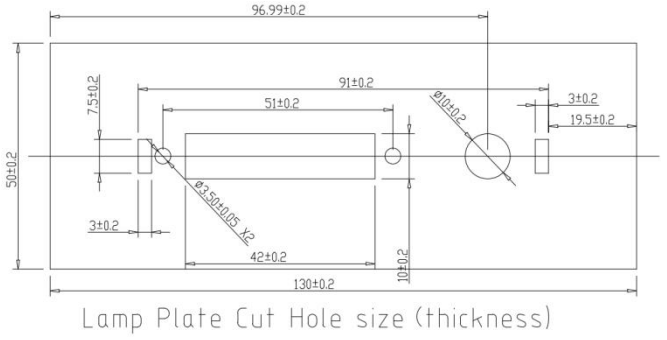
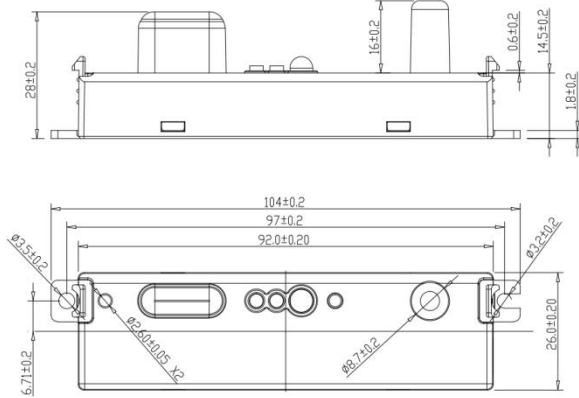
【Diagram】

● Dimension



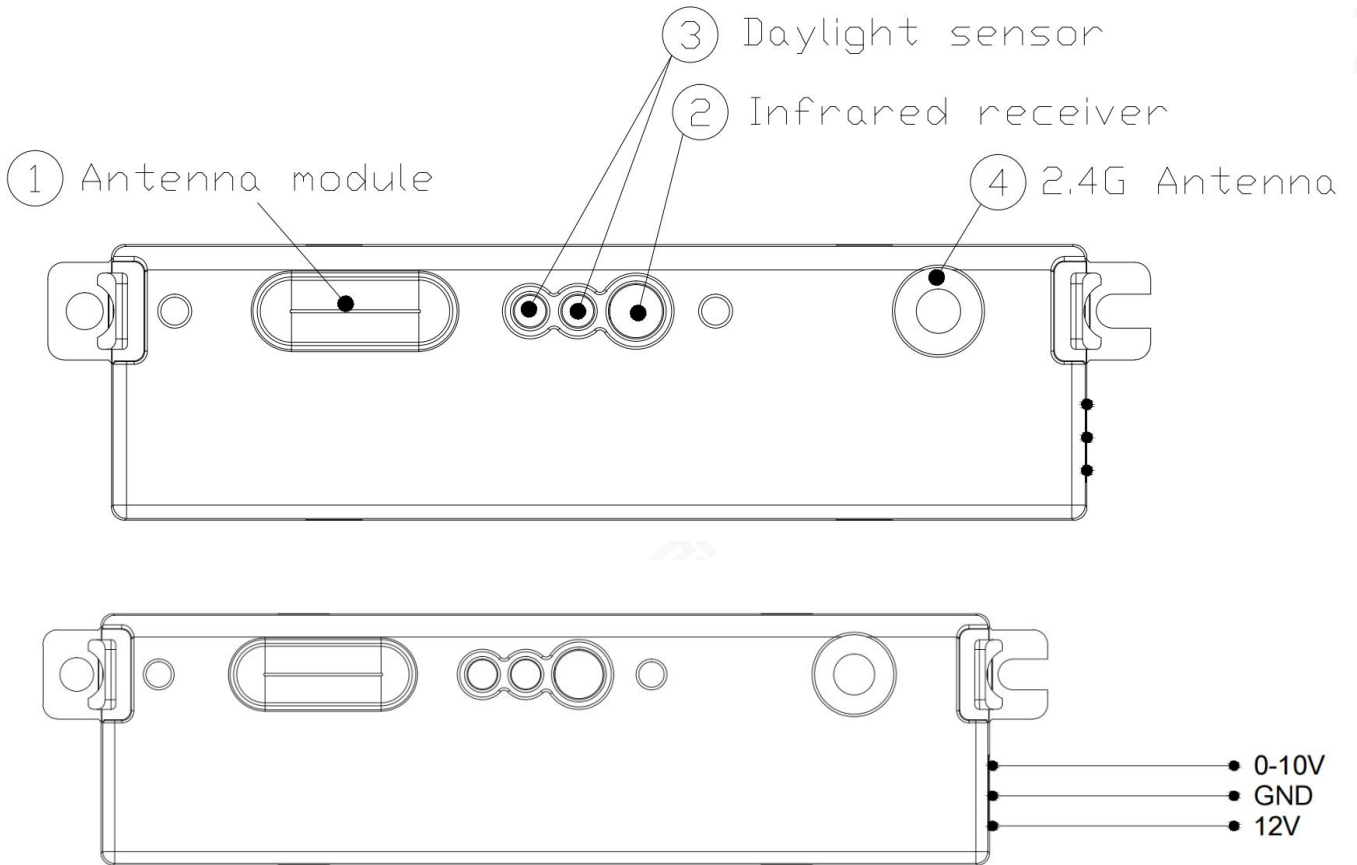
Lamp Plate Cut Hole size (thickness)

Screw installation

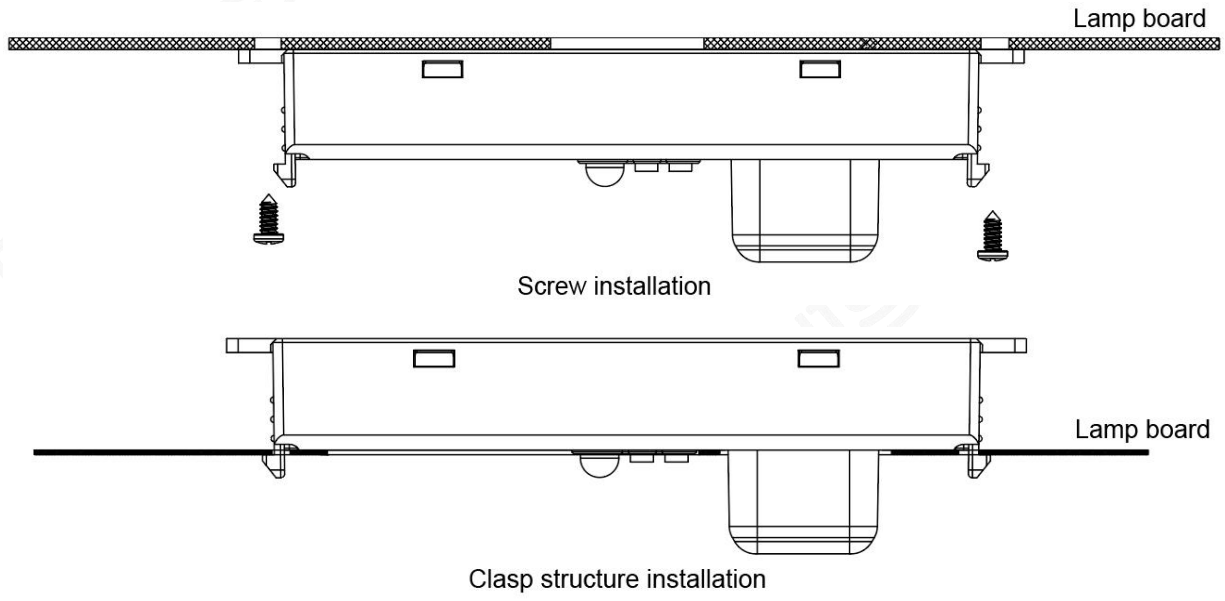


Clasp structure installation

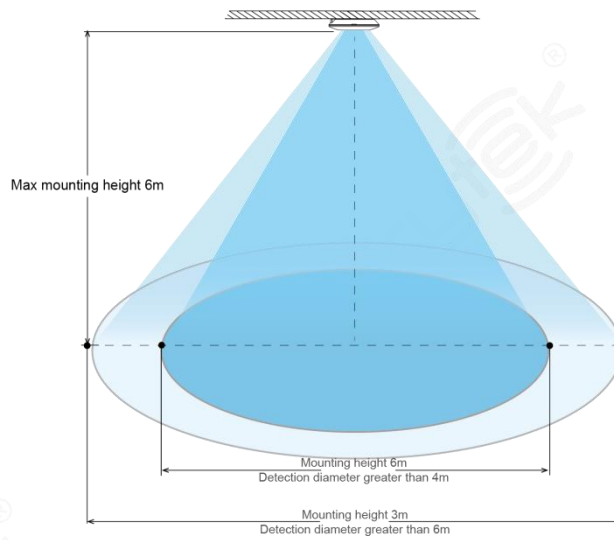
● Wiring, Function



● Installation

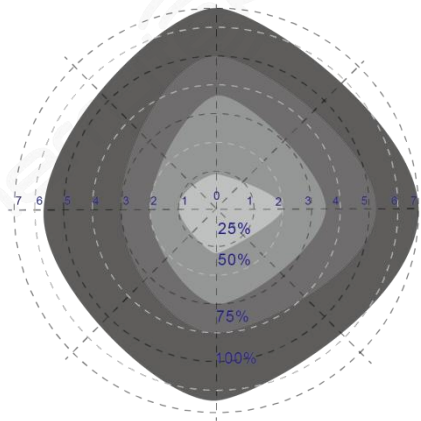


● radiation diagram

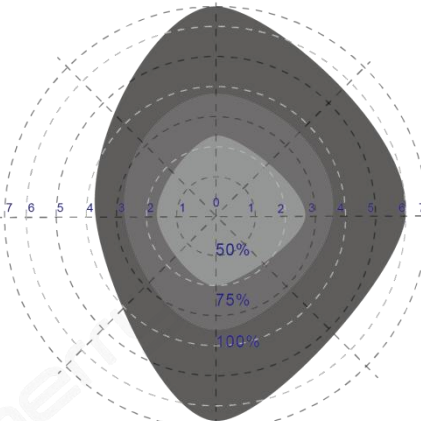


Ceiling mounting

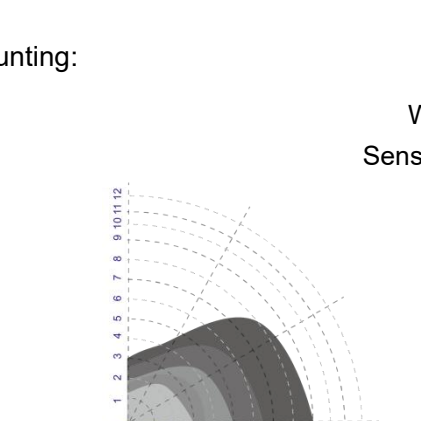
Ceiling mounted height: 3m
Sensitivity: 100%/75%/50%/25%



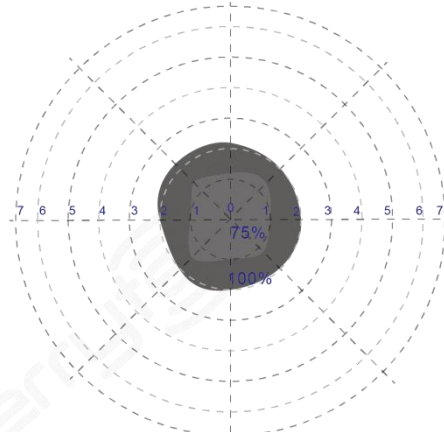
Normal moving (Speed:1m/s)



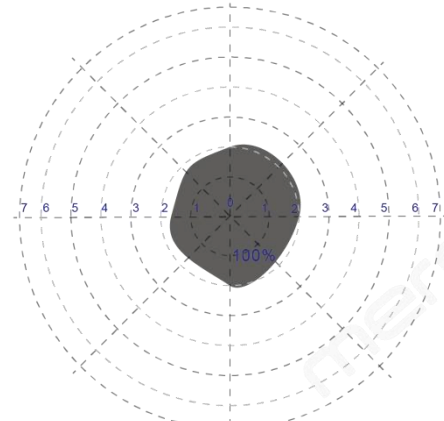
Slow moving (Speed 0.3m/s)



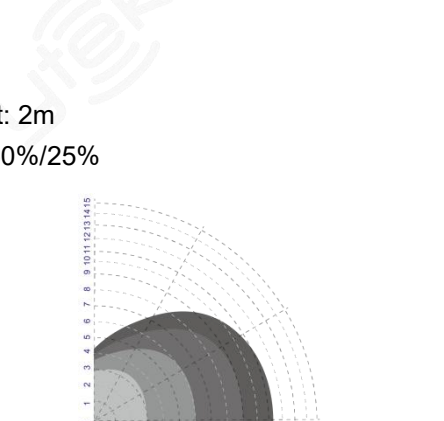
Ceiling mounted height: 6m
Sensitivity: 100%/75%



Normal moving (Speed:1m/s)

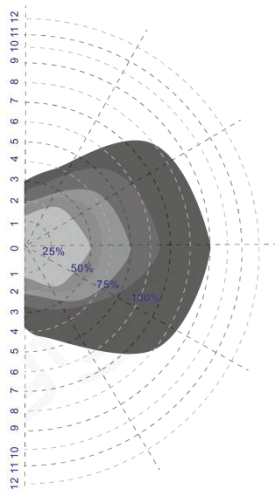


Slow moving (Speed: 0.3m/s)

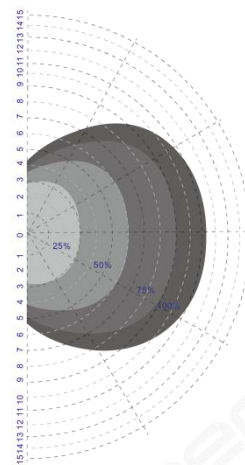


Wall mounting:

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



Normal moving (Speed: 1m/s)



Slow moving (Speed 0.3m/s)

【Remote Controller】 (MH15)

Remote Control Setting	Function	Button	Remarks																		
	Enable/disable Grouping		Short press to disable grouping function and light flashes once. Short press to recover grouping function and light flashes once.																		
	Tx Grouping		Long press the same button code to create groups for the sensors, and the light flashes once. Each sensor only can be added in the same Tx, the last setting Tx is available.																		
	Look Up Sensors In The Same Group		Short press the button code, all LED lights(Tx) in the same group, will flash 3times.																		
	Rx Grouping		Short press and press one of Tx group code that is "1" to "8" within 3 seconds, the sensor can receive the same code same as Tx. Max 4 Rx groups can be set. For examples, 1.Short press of sensor A and press , then press and within 3 seconds, sensor A can receive group code "1" and "2". 2.Rx of Sensor A has been set as "1", "2", "3" and "4", once short press and the sensor only can receive "2", "3", "4" and "5".																		
	Synchronize Sensor Parameters		Short press Tx code from "1" to "8", the LED lights in the same group will flash 3 times, wait for the flashing to complete, and then short press , the sensor parameters will be copied to other members in the same group (The dimming level set by "+/-" cannot be synchronized). Once successfully synchronize all sensor parameters, all lights in the same group will flash 3 times.																		
	Sand-by Dim Level Setting		Short press the button to set Stand-by Dim Level of LED light to 10% or 30%(the duty cycle of the sensor), and the light flashes once.																		
	Motion Trigger Brightness Setting		Short press "+" or "-" to increase or decrease the brightness level by 2% (the duty cycle of the sensor) each time. Dimming range is 15%-100%. Long press "+" or "-" to increase or decrease continuously brightness level.																		
	Sensor Parameters Setting		Short press Detection Area and the light flashes once.																		
			Short press Hold time and the light flashes once.																		
			Short press Stand-by Period and the light flashes once.																		
		1.Daylight threshold Short press the button to set the required daylight threshold and the light flashes once. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Button</th> <th>Daylight threshold</th> </tr> </thead> <tbody> <tr> <td>LOW</td> <td>5Lux</td> </tr> <tr> <td>MED</td> <td>50Lux</td> </tr> <tr> <td>HIGH</td> <td>Disable</td> </tr> </tbody> </table> 2.Daylight priority Long press to enable the daylight priority function and the light flashes once. Long press , the sensor will quit daylight priority mode and the light flashes once. Or short press "HIGH" button the sensor will quit daylight priority mode and the light flashes once. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Button</th> <th>Light ON below</th> <th>Light OFF exceeds</th> </tr> </thead> <tbody> <tr> <td>LOW</td> <td>5Lux</td> <td>55-105Lux</td> </tr> <tr> <td>MED</td> <td>50Lux</td> <td>100-150Lux</td> </tr> <tr> <td>HIGH</td> <td colspan="2">Disable</td> </tr> </tbody> </table>	Button	Daylight threshold	LOW	5Lux	MED	50Lux	HIGH	Disable	Button	Light ON below	Light OFF exceeds	LOW	5Lux	55-105Lux	MED	50Lux	100-150Lux	HIGH	Disable
Button	Daylight threshold																				
LOW	5Lux																				
MED	50Lux																				
HIGH	Disable																				
Button	Light ON below	Light OFF exceeds																			
LOW	5Lux	55-105Lux																			
MED	50Lux	100-150Lux																			
HIGH	Disable																				
Disable Sensor Function/ Light Normally On Or Off		Short press the button to disable sensor function. The light in the same Tx group will be lighted ON or OFF constantly. No triple flash indication will be given when these operations are performed. Power off when lights turn ON, they will turn ON after power up. Power off when lights turn OFF, they will turn ON about 2seconds and then turn off after power up.																			
Enable Sensor Function		Short press the button and the led lights in the same Tx group will flash once, all sensor parameters are back to the last setting.																			
Parameters Back To Dip Switches & Rotary Dials		Long press 3 seconds, all parameters will back to the setting of DIP switches & rotary dials. The light will flash once. This operation applies to a single luminaire only, will not reset all luminaires in the same TX group.																			

【Initialization】

When powering on for the first time, the sensor will turn the light on to 100% brightness, and the light will be turned off after 10 seconds. During initialization, movement signal will not be detected.

【Default setting】

Detection area: 100%; Hold Time: 5s; Stand-by Period: 0s; Daylight Sensor: Disable;
Stand-by Dim Level: 10%.

【Application Notice】

- The sensor should be installed by a professional electrician. Please cut off the power before installing, wiring 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 0-10V / PWM driver, LOW light effect may be different
- 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 100 mA
- Product specifications and parameters may be optimized without prior notice
- For the new installation environment, it is recommended to test 5pcs samples before installation.