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 paring or gateway.
- Patented di-pole microwave antenna, no false trigger when installed beLOW metal LED tray.
- Super-narrow microwave senor 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. mouthing 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	开	关	
		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 ㎡			
Installation height	3m (6m Max)			

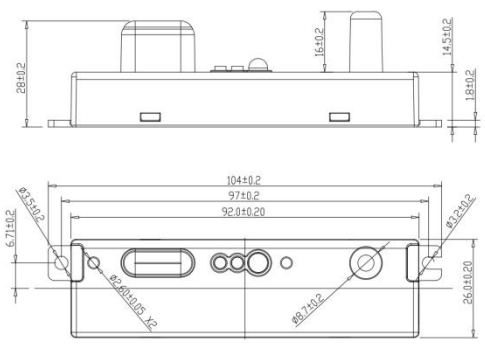
Wireless Module	
Operating Frequency	2.400-2.483GHz
Transmitting Power	6dBm
Group	One group max nodes 32 Pcs
Transmitting Distance	15m MAX(Point-to-point open area transmission distance)
Environment	
Working temperature	Built-in: -25~60℃
Storage temperature	-40℃~80℃, humidity ≤85% (non-condensing)
Certification 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

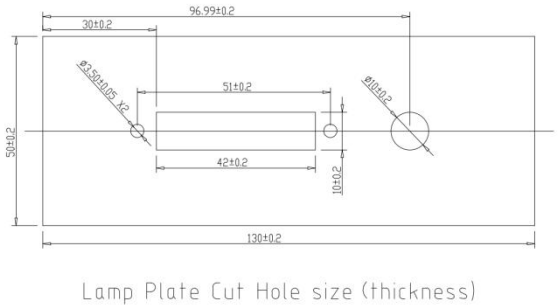
【Function description】

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

【Diagram】

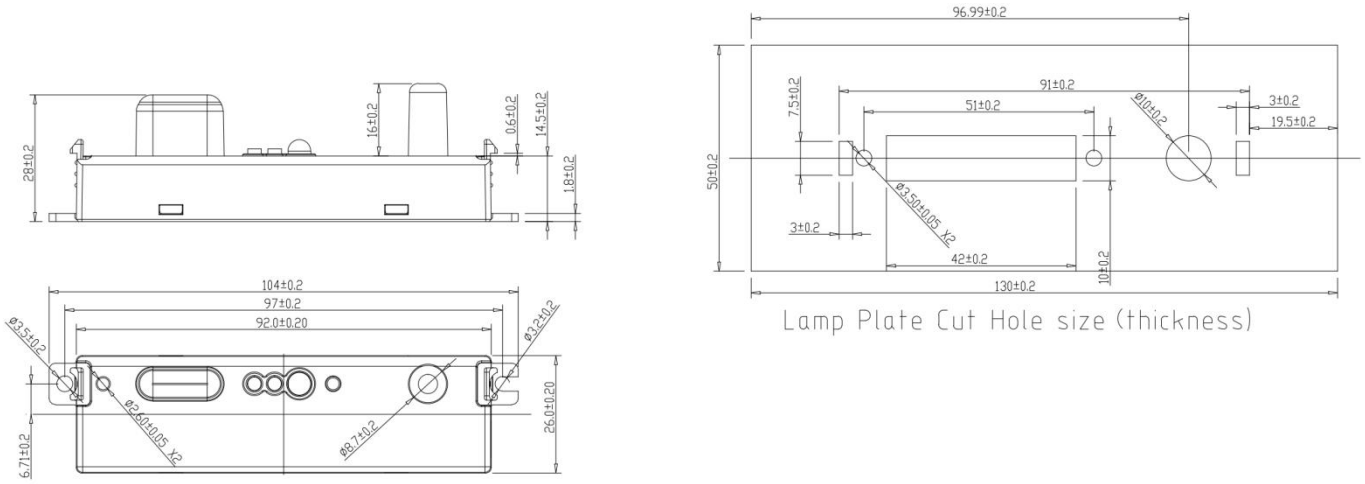
- **Dimension**





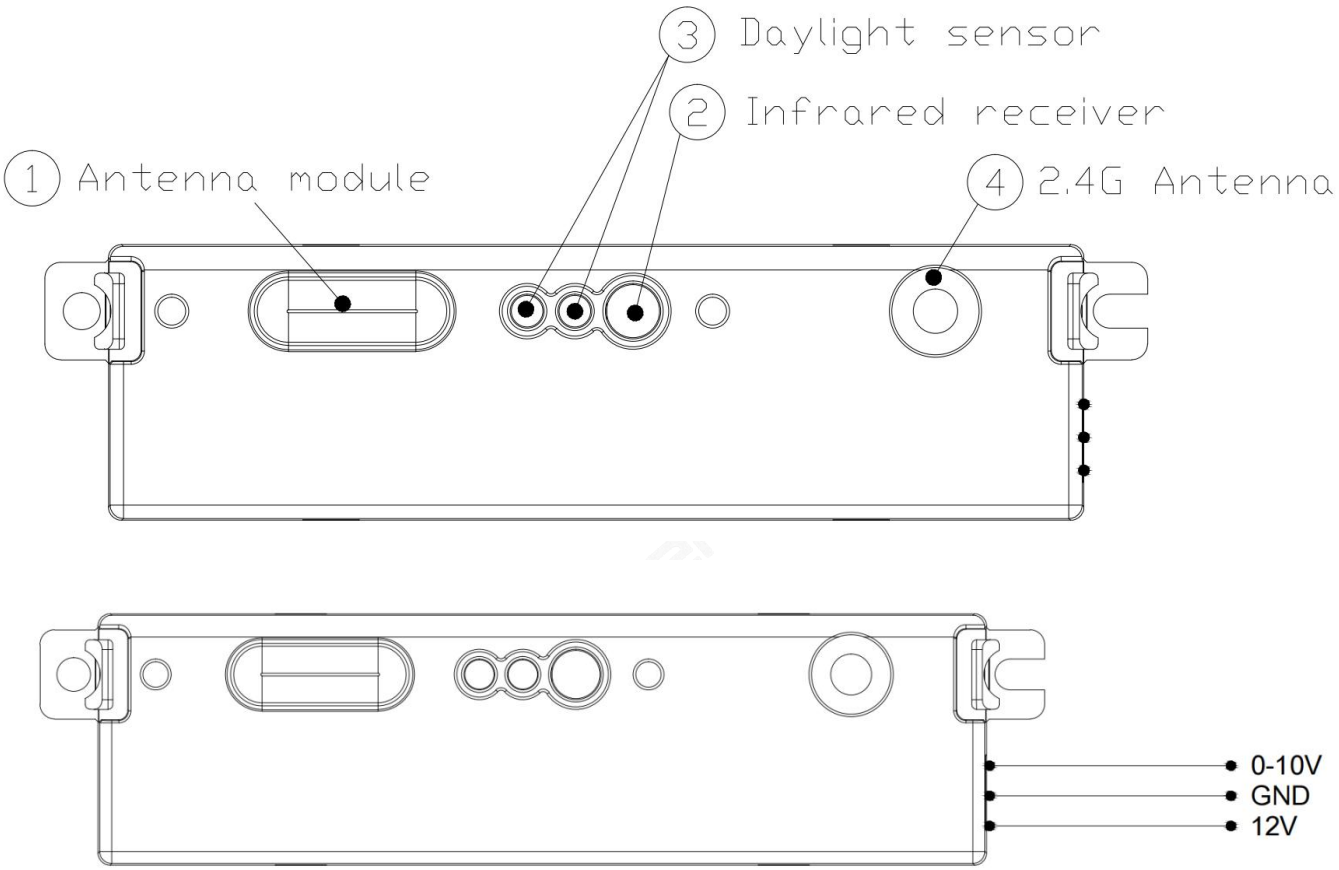
Lamp Plate Cut Hole size (thickness)

Screw installation

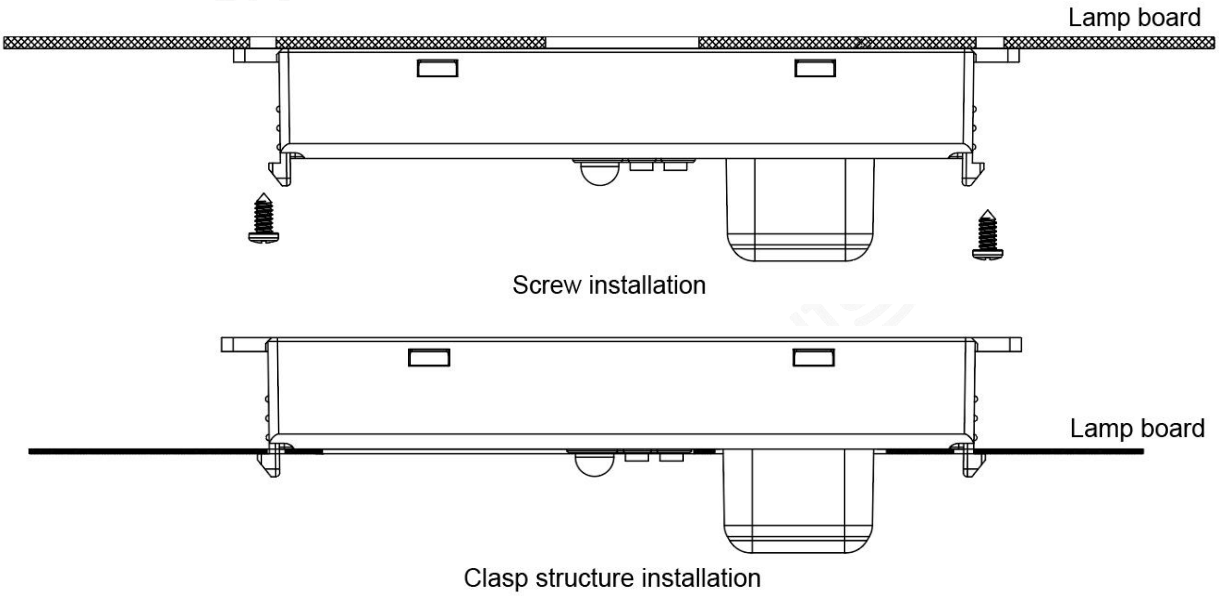


Clasp structure installation

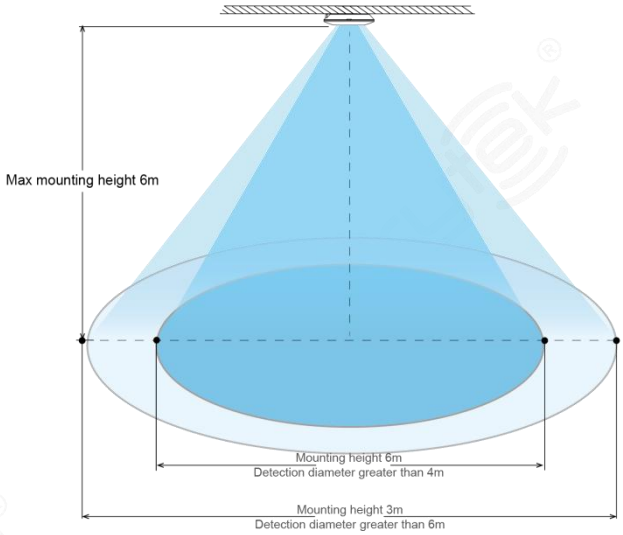
● Wiring, Function



- Installation



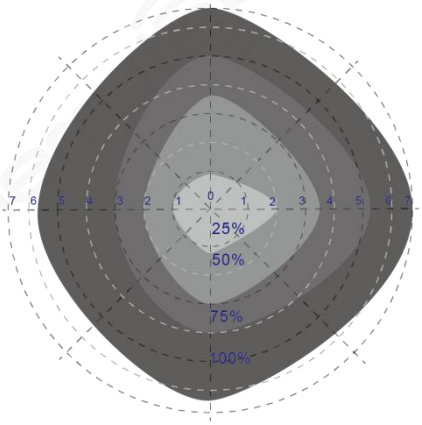
- **radiation diagram**



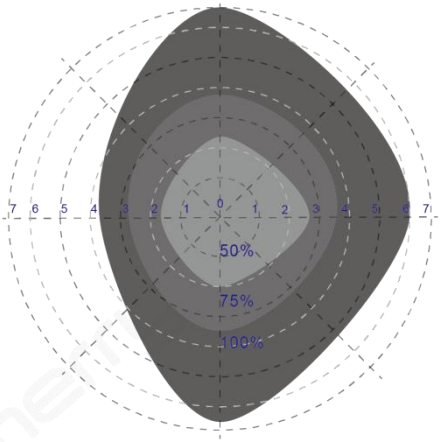
Ceiling mounting

Ceiling mounted height: 3m

Sensitivity: 100%/75%/50%/25%



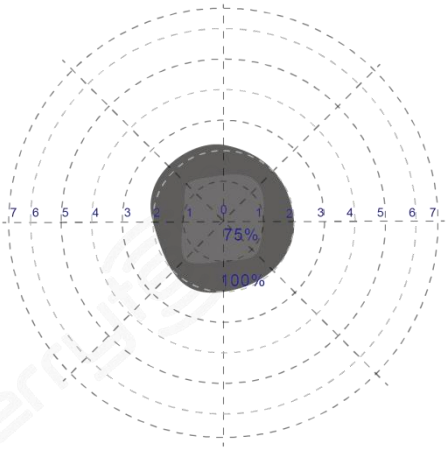
Normal moving (Speed:1m/s)



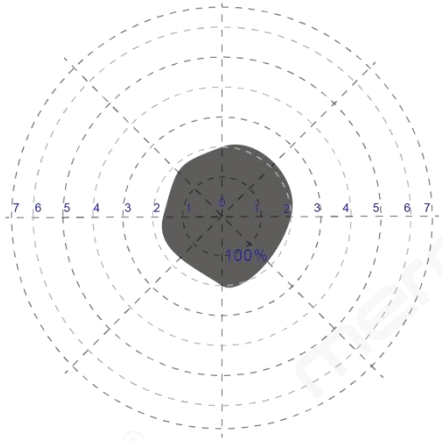
Slow moving (Speed 0.3m/s)

Ceiling mounted height: 6m

Sensitivity:100%/75%



Normal moving (Speed:1m/s)

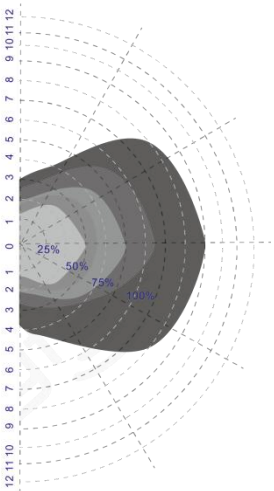


Slow moving (Speed: 0.3m/s)

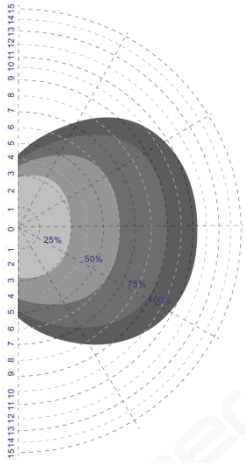
Wall mounting:

Wall mounted height: 2m

Sensitivity: 100%/75%/50%/25%



Normal moving (Speed：1m/s)

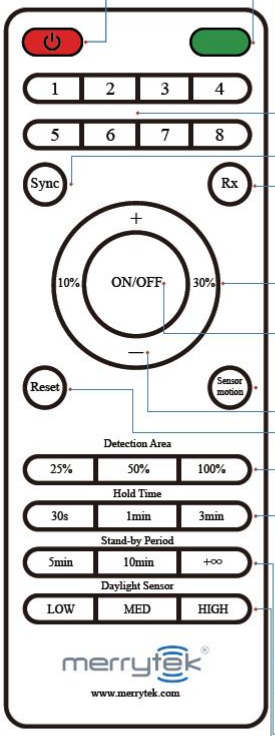


Slow moving (Speed 0.3m/s)

【Remote Controller】（MH15）

merrytek®

Instruction

Remote Control Setting	Button	Remarks
		Turn off wireless transmission
		Recover wireless transmission
		Set the main channel number: Long press a channel number to group the sensors. One flash of the indicator indicates successful grouping. Up to 8 different groups can be established. Short press the channel number, and the light in the same group flashes 3 times. Each sensor can only be set to 1 main channel number at most, based on the most recently set main channel number. Note: Each channel number can be set to a maximum of 32 sensors.
		Short press the channel No. , the lights in the same group will flash 3 time. And then short press the sync button to synchronize sensor parameters to all lights in the same group, including detection area, hold time,stand-by period, daylight senor and stand-by dim level. After the synchronization is successful, the lights in the same group will flash 3 time.
		Set the secondary channel number: Press the Rx button first, and then press any button of groups 1-8 within 3s, and the sensor can receive the signal of the channel. Up to 4 groups of signals can be set to receive. For example: Device A first presses Rx and 1, and then presses Rx and 2, and the device can receive networking signals of groups 1 and 2. If all 4 groups of signals are set, and then a new secondary channel number is set, the first set channel will be removed. For example, device B has set secondary channel numbers of groups 1, 2, 3, and 4. At this time, press Rx and 5, and the sensor can receive secondary channel numbers of groups 2, 3, 4, and 5. Note: Each channel number can set up to 32 sensors.
		Short press this button to set the stand-by dim level, 10% or 30%.
		In any state, short press this button to turn on the current lamp, and the lamp is in a constant on state; long press this button to turn off the current lamp, and the lamp is in a constant off state (memory after power failure). Press the Sensor Motion button to exit and restore the sensing mode, and the parameters will remember the last setting.
		Detection Area (10%-100%)
		Long pressing for 3s to recover factory setting and clear groups. Detection Sensitivity: 100%, Hold time: 10s, Daylight sensor: disable, Stand-by period: 0s, stand-by dim level: 10%.
		Short press to select detection area, 25% is the shortest range. 100% is the maximum.
		Hold Time: 30s, 1min, 3min
		Stand-by Period: 5min, 10min, +∞
		Daylight sensor: 1. Stand-by period set to 5min or 10min or +∞. Enable daylight threshold mode. Light will turn on when ambient light level below the threshold value if with motion trigger. 2. Long press +∞, daylight priority is enabled. Light will automatically turn ON/OFF according to ambient light level against setting below. 3. Press "HIGH" button, Daylight sensor is disabled.

Conditions	Stand-by period Long Press +∞		Stand-by period
Daylight Priority	ON	OFF	Daylight Threahold
LOW	5Lux	55-105Lux	5Lux
MED	50Lux	100-150Lux	50Lux
HIGH	Disabled		

【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.