

SPECIFICATION

Product Name: Microwave Motion Sensor

Model No.: MC087D 1

Issue Date: March 08, 2023

CUSTOMER APPROVED

PRODUCT DIRECTOR APPROVED	P&M CHECKED	R&D CHECKED	PREPARED
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*Please read the 11th instruction carefully before using this product, since the performance of DC-powered microwave products is closely related to the stability and characteristics of the auxiliary power supply of the LED driver.

1. Features



- 1) Adopts Merrytek patented high gain microwave antenna, better metal environment adaptability. Smaller cut size, batch accord with RED certification.
- 2) Build in microwave module and daylight sensor. 12V DC input and PWM dimming signal output.
- 3) Cut size: 10mmx40mm. Suitable for most liner lights.
- 4) All parameters can be set by dip switches.
- 5) 5 years warranty

2. Parameter

Input	Input Voltage Range	7.5-12VDC
	Rated Input Voltage	12V DC
	Operating Current	<25mA
	Voltage Ripple	<100mVp-p
Output	Working Mode	5V PWM Dimming Signal
Sensor Parameters	Operating Frequency	5.8 GHz $\pm$ 75 MHz, ISM Band.
	Transmitting power	1mW Max.
	Detection Area	100%/50%
	Hold time	5s/5min/10min/30min
	Stand-by Period	0s/3min/10min/+ ∞
	Daylight Sensor	30Lux/50Lux/100lux/Disable Daylight priority: ON / OFF value (30Lux)50Lux / 150Lux 100Lux / 200Lux (ambient light diffuse reflection conditions)
	Stand-by DIM Level	10%/30%
	Detecting Radius	mounting height 3m, 1m/S $\geq$ 2.5m
Operating Environment	Mounting Height	3m (6m Max)
	Detecting Angle	90°@Xz plane / 130°@Yz plane
Certificate	Operating Temperature	-25°C...+70°C
	Storage Temperature	-40°C...+80°C Humidity: 85% (non-condensing)
Others	Environmental Requirement	RED
	Wiring	3 pin 2.0mm fast connector
	IP Rating	IP20
	Installation	Base installation
	Dimension	See dimension

Shenzhen Merrytek Technology Co.,Ltd

Add: No.17th Building, Dianda Guyuan Industrial Park, Mashantou, Matian, Guangming District, Shenzhen, China, 518106
Tel: +86 (0)755-2305 7253 Fax: +86 (0)755-2786 3012 Website: www.merrytek.com

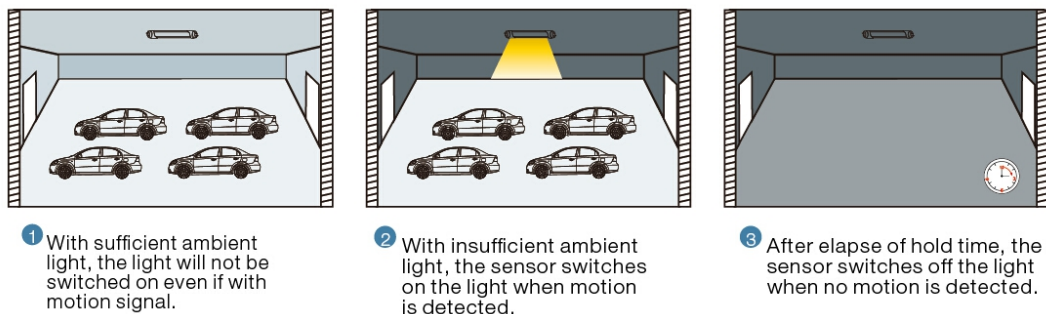
Others	Package	card +cartons (K=A)
	Net Weight	18g
	Lifetime	5 years warranty@Ta

Note:

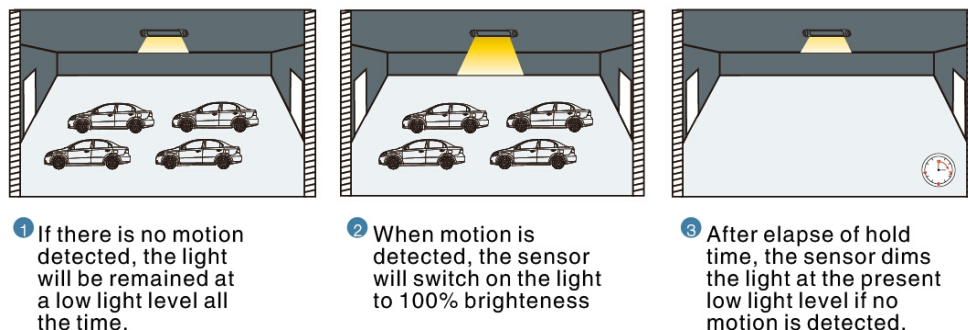
1. "N/A" means not available.
2. The detection range of the sensor is related to the moving speed and size of moving object, mounting height, installation height and angle, installation site, reflectors around the sensor etc. The data in the document is typical value and tested by a 165cm person in an open indoor area.
The detection range at wall mounting will be longer at ceiling mounting. Please reduce detection sensitivity at wall mounting or contact us to confirm the sensor data settings.

3. Function

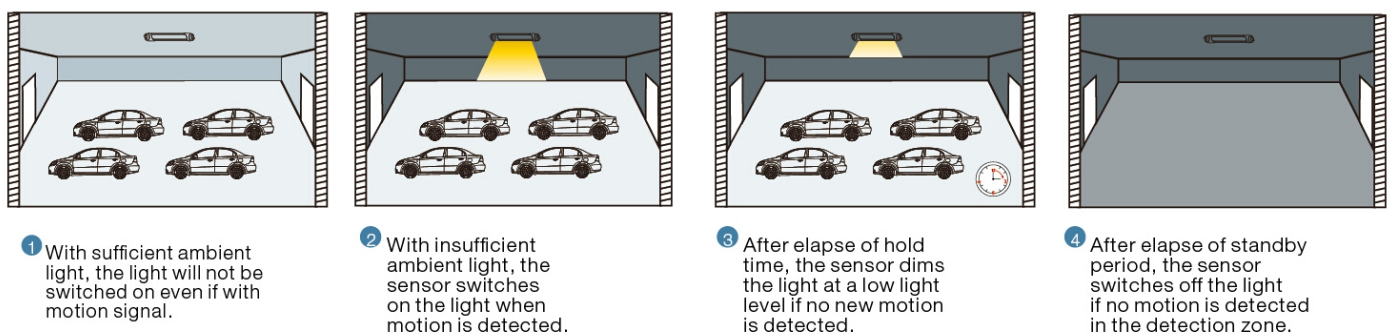
1) On/OFF Function (set Stand-by Period to "0s")



2) 2-step Dimming Function (set Stand-by Period to "+∞", set Daylight Sensor to "Disable")



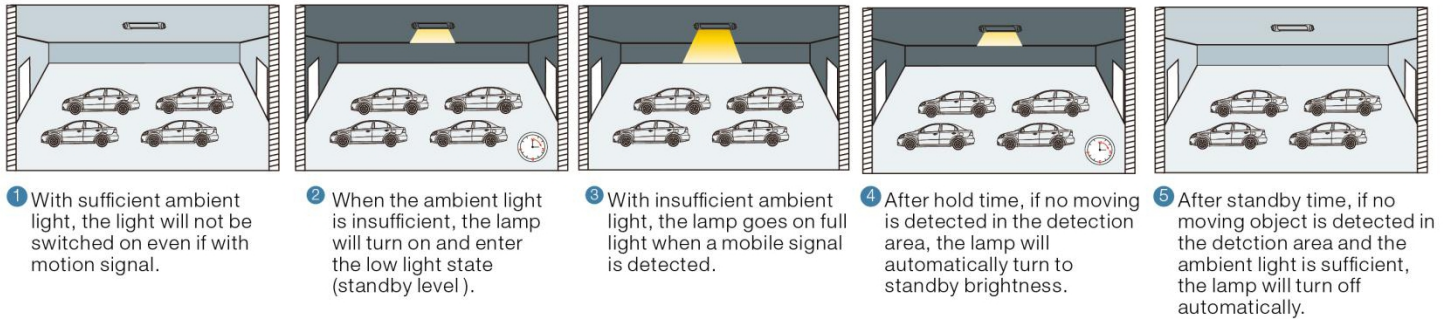
3) 3-step dimming function (set Stand-by Period to "3min/10min", other sensor parameters can be set actual needs)



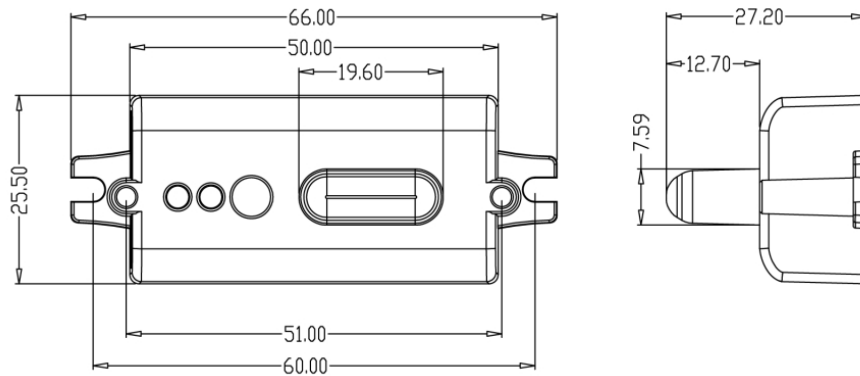
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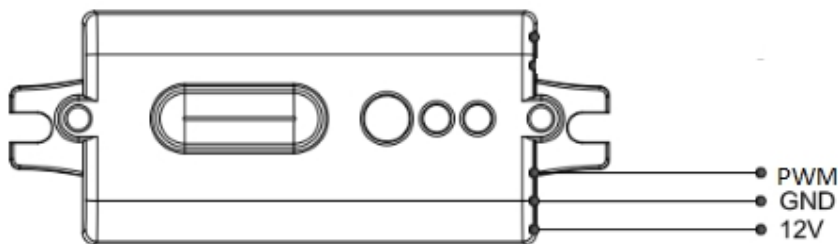
4) Daylight Priority (Daylight Sensor be set to “30lux/50lux/100lux ” and set Stand-by Period to “+∞”, other sensor parameters can be set actual needs)



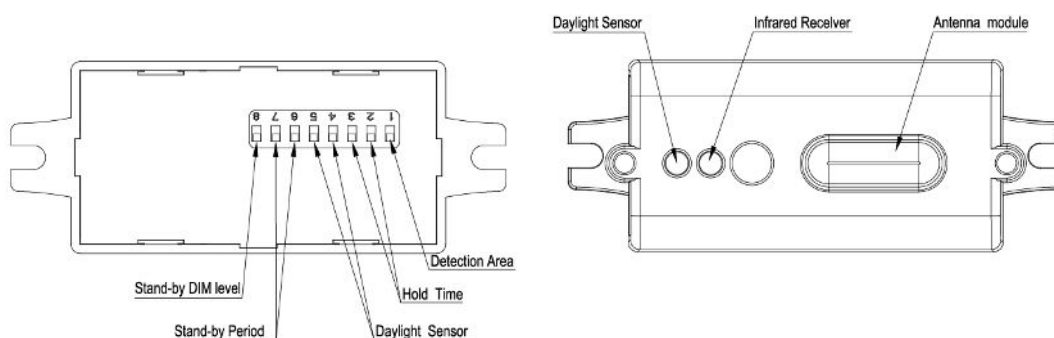
4. Dimension(mm)



5. Wiring



6. Structure and installation



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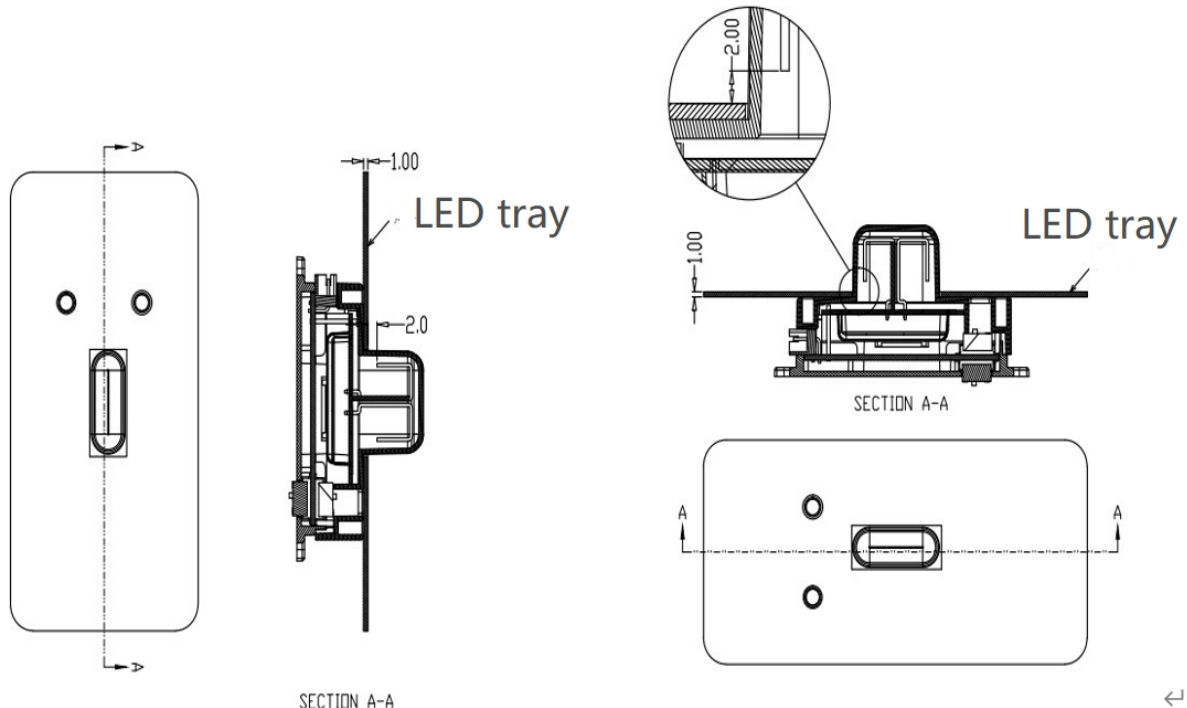
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7. Installation

Note: Sensor antenna should be above LED tray at least 2mm.



1. Cut a suitable opening size.



2. Put the product into the opening, and fasten it with screws.

8. Function Dialing Settings

1) Detection Area

	1	
I	ON	100%
II	-	50%

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2) Hold Time

	2	3	
I	ON	ON	5s
II	ON	-	5min
III	-	ON	10min
IV	-	-	30min

3) Daylight Sensor

	4	5	Daylight Sensor	ON/OFF
I	ON	ON	30Lux	150Lux
II	ON	-	50Lux	150Lux
III	-	ON	100Lux	200Lux
IV	-	-	Disable	Disable

4) Stand-by period

	6	7	
I	ON	ON	0s
II	ON	-	3min
III	-	ON	10min
IV	-	-	+∞

Note: (Be daylight priority when setting to “+∞”)

5) Stand-by Dim Level

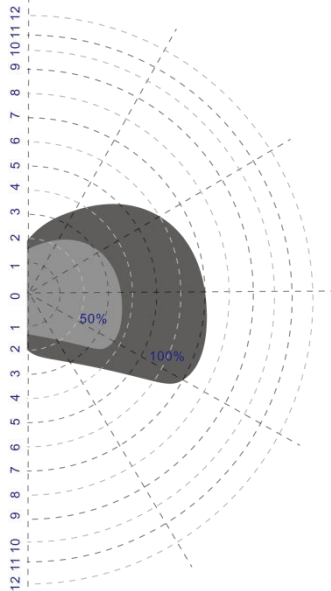
	8	
I	ON	30%
II	-	10%

9. Radiation Pattern

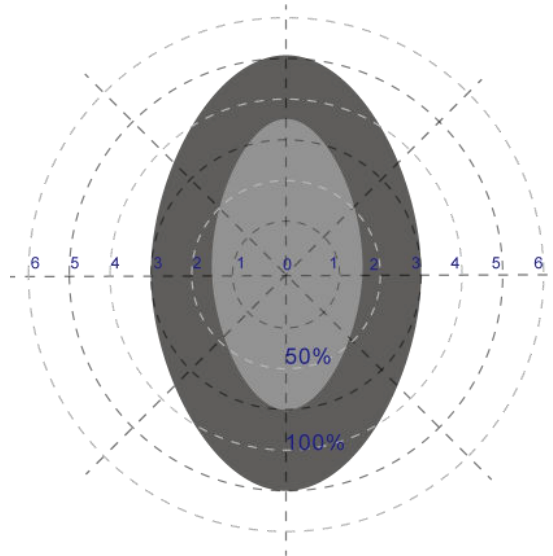
Wall mounted height: 2m
Sensitivity Area: 100%/50%

Ceiling mounted height: 3m
Sensitivity Area: 100%/50%

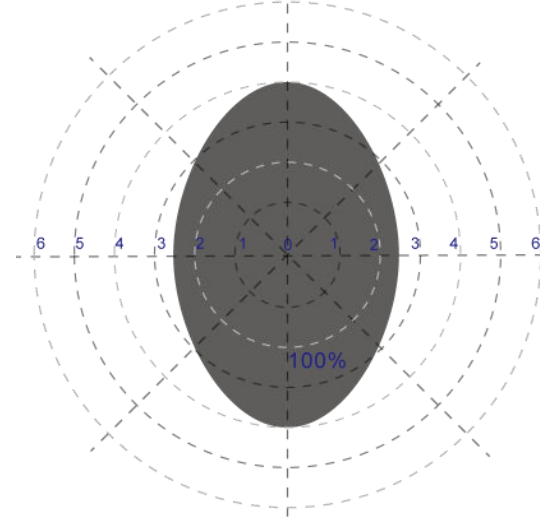
Ceiling mounted height: 6m
Sensitivity Area: 100%



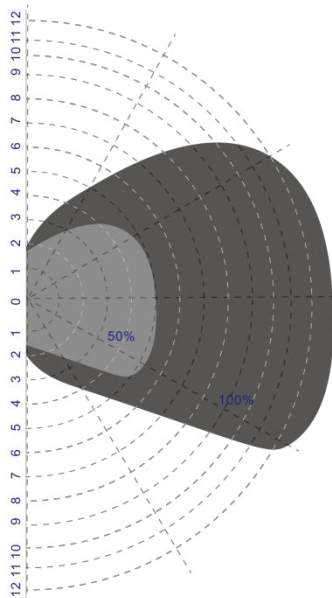
Normal moving (Speed:
1m/s)



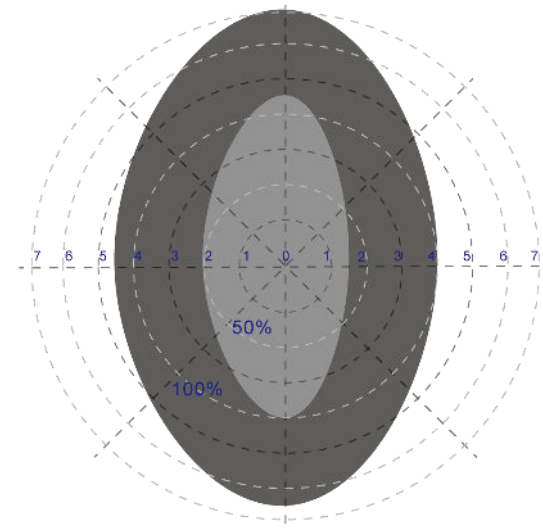
Normal moving (Speed: 1m/s)



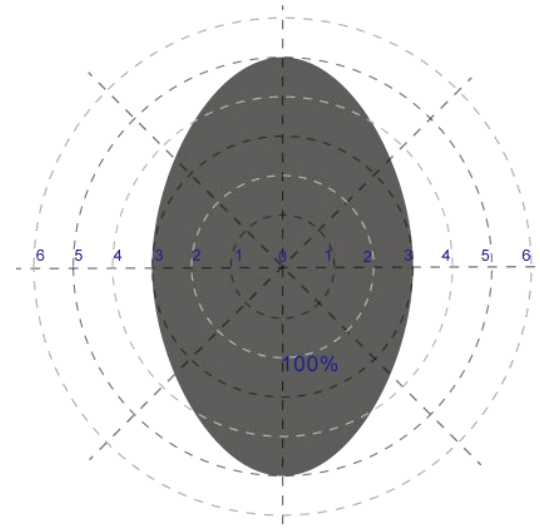
Normal moving (Speed: 1m/s)



Slow moving (speed:
0.3m/s)



Slow moving (speed: 0.3m/s)



Slow moving (speed: 0.3m/s)

*When installed at 6m height, sensor with 50% detection area is unable to detect motion signal.

10. Initialization

After power on, the sensor automatically turns on light at 100% brightness. After 10sec, it turns low brightness. 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 should be installed by a professional electrician. Please turn off the power before installing, wiring or changing parameters.
- (2) Microwaves cannot penetrate metal. Do not place the product in a closed metal lamp or a half-closed metal lamp and metal or glass are not allowed to cover above the product. If antenna needs to pass through the metal plate, please ensure that the top of the sensor is close to the metal plate.
- (3) The distance between any inductive sensors should be greater than 2 meters. Keep sensor away from switches, routers and other wireless devices to avoid radio interference, more than 1.5 meters. The antenna surface of the microwave module should not be directly facing input AC and output DC to avoid low or high frequency signals affect the normal operation of microwave sensor's antenna.
- (4) Vibration signals will be regarded as moving signals to trigger the sensor. Avoid using objects that vibrate for a long time around the sensor, such as large metal equipment, pipes, air conditioning outlets, exhaust vents, smoke exhaust machine ports, shaking fans, etc. Pets in detecting area may trigger sensing.
- (5) Sensor is for indoor use only. The waterproof effect for outdoor use will be affected. Wind, rain, and moving objects around will cause false triggering. When the sensor is installed in a metal lamp, metal reflective surface, or a narrow enclosed environment, the microwave will be reflected repeatedly and cause false triggering. Please reduce the sensitivity or contact the manufacturer for technical support.
- (6) This Sensor is suitable for ceiling mounting. If wall mounting, the microwave detection distance will be greatly increases, which may lead to the phenomenon that the microwave passes through the wall or does not turn off the lamp. Please adjust the sensitivity by 50%. If 50% cannot be used, please avoid wall installation or contact the manufacturer to provide technical support.

- (7) Due to continuous improvement, the contents of this instruction could be changed without prior notice.
- (8) Different PWM drivers, different low brightness. The daylight threshold is measured in a sunny environment without shadow and ambient light diffuse reflection. Ambient lux level could be different in different environment, weather, climate, time-of-day and season.
- (9) Sensitivity distance is related to moving speed of objects, size of moving objects, mounting height, mounting angle, working environment, reflecting materials etc.
- (10) Given detecting area is typical value that was measured by 165cm high testers in an indoor open environment.
- (11) This product have to use with voltage-stabilized DC power supply whose input voltage is stable and ripple factor is low(ripple factor is lower than 100mV; load current is greater than 25mA).
- (12) When installing in new environment, please install and test at least 5pcs product firstly before mass installation.