

Specification

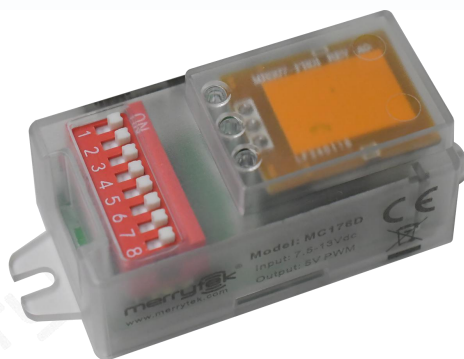
Product Name: DC controller

Product Model: MC176D

Versions	Release/ change Date	Reason	Publishing
V1.0	2024.03.12		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
- Low impedance antenna module with light guide column design small size, can reduce the opening of the lamp board;
- Daylight priority function



【Parameter】

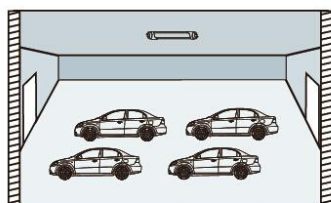
Input			
Rated voltage	7.5-13VDC		
Working current	16±2mA		
Ripple voltage	< 100mVp-p		
Output			
Output signal	5V PWM dimming signal		
Daylight Sensor			
Daylight sensor	Daylight threshold	5Lux/15Lux/50Lux/Disable	
	Daylight priority	ON	OFF
		5Lux	15Lux
		15Lux	50Lux
		50Lux	100Lux
Dimming level	25%		
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

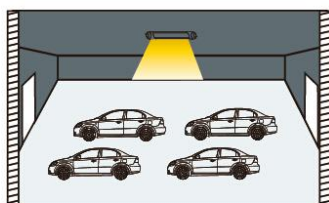
【Function description】

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 “+∞”

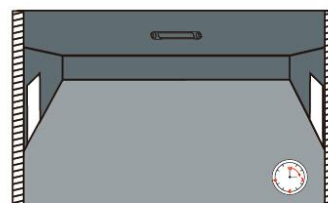
On/OFF Function (set Stand-by Period to “0s”)



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

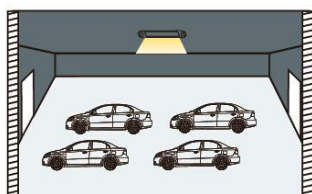


② With insufficient ambient light, the sensor switches on the light when motion is detected.

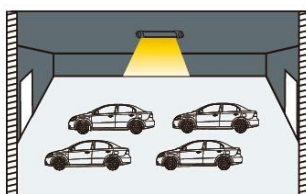


③ After elapse of hold time, the sensor switches off the light when no motion is detected.

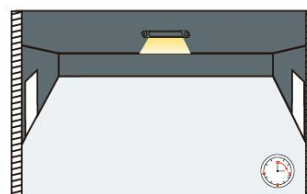
2-step Dimming Function (set Stand-by Period to “+∞”)



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

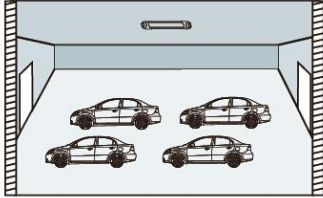


② When motion is detected, the sensor will switch on the light to 100% brightness

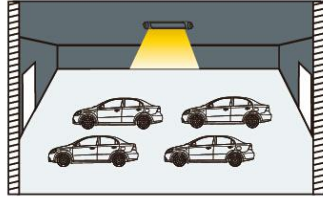


③ After elapse of hold time, the sensor dims the light at the present low light level if no motion is detected.

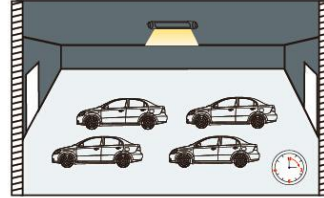
3-step dimming function (stand-by period be set to “10min/30min”)



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.

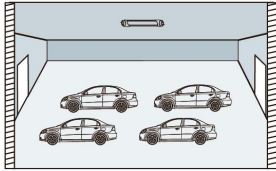


③ After elapse of hold time, the sensor dims the light at a low light level if no new motion is detected.

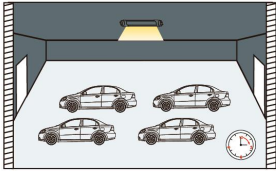


④ After elapse of standby period, the sensor switches off the light if no motion is detected in the detection zone.

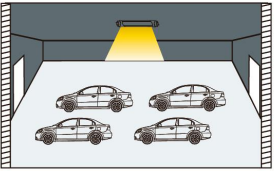
Daylight Priority Stand-by Period be set to “+∞”



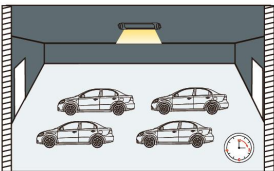
① With sufficient ambient light, the light will not be switched on even if with motion signal.



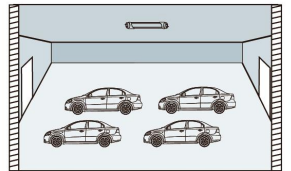
② When the ambient light is insufficient, the lamp will turn on and enter the low light state (standby level).



③ With insufficient ambient light, the lamp goes on full light when a mobile signal is detected.



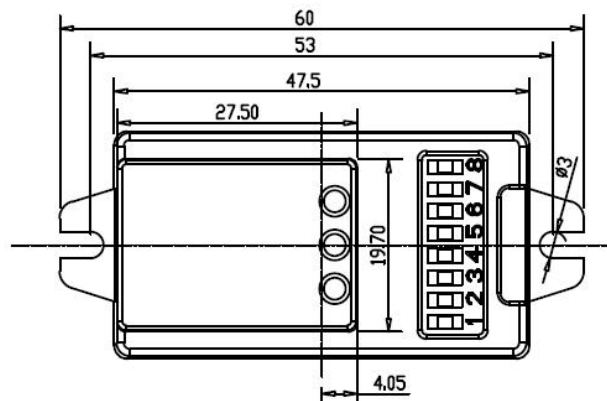
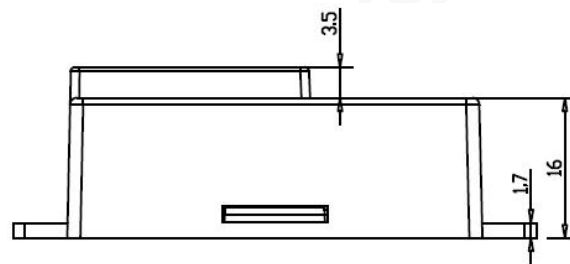
④ After hold time, if no moving is detected in the detection area, the lamp will automatically turn to standby brightness.



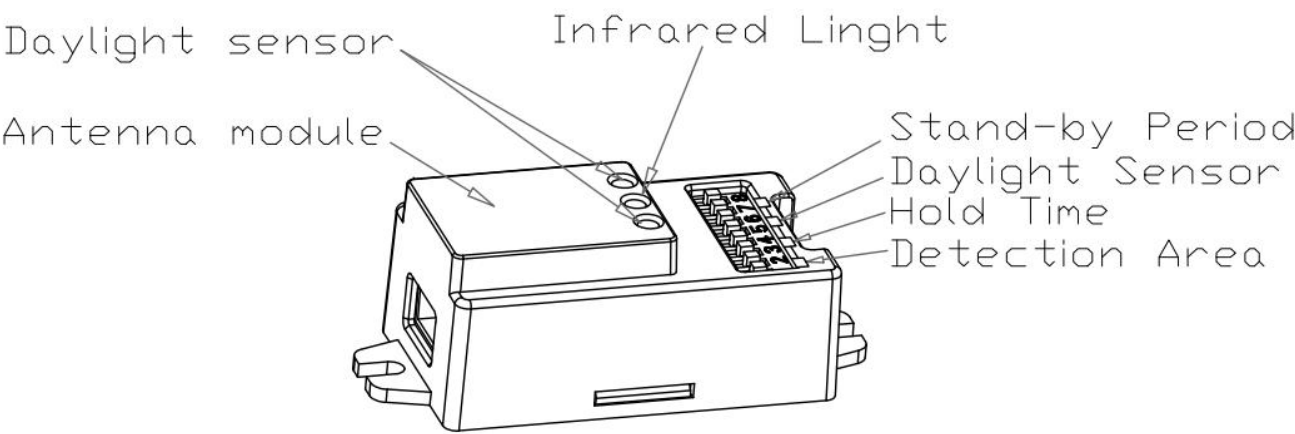
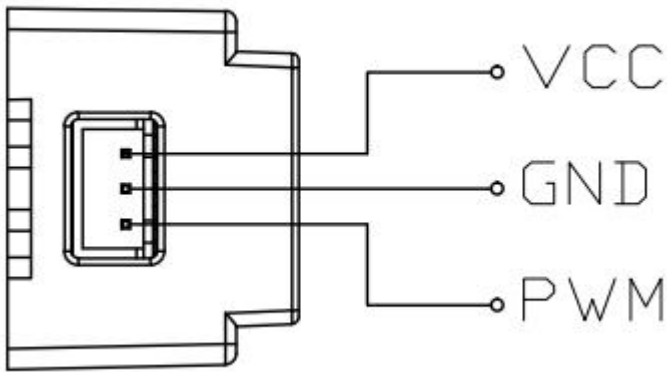
⑤ After standby time, if no moving object is detected in the detection area and the ambient light is sufficient, the lamp will turn off automatically.

【Diagram】

● Dimension(mm)



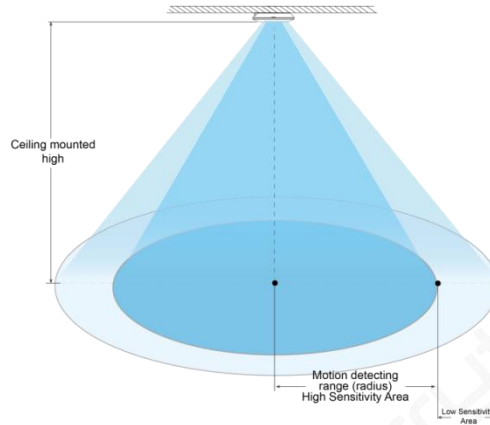
● Wiring, Function



【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



【Remote Controller MH16 Optional】

【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】

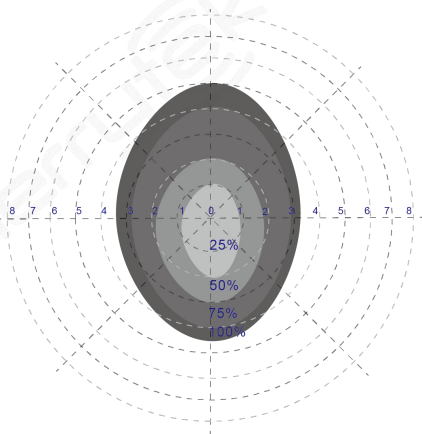
- The sensor should be installed by a professional electrician. Please cut off the power before installing, wiring, changing the setting of the DIP switch, etc.
- The detection distance is related to factors such as the moving speed of the moving object, the size of the moving object, the installation 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.

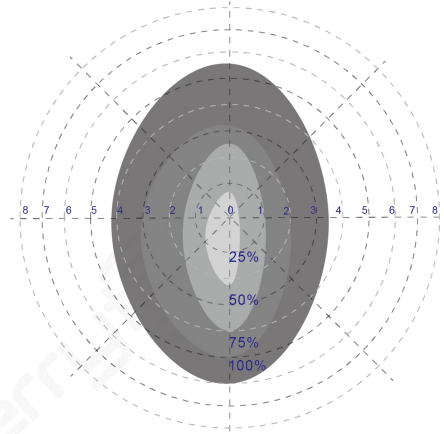
- Please make sure that there are no moving signals such as fans, DC motors, sewer pipes, air outlets, etc. around the sensor, otherwise the sensor may cause false triggering.
- Microwaves cannot penetrate metal, avoid installing in closed or semi-closed metal lamps, and there should be no metal or glass 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

● radiation diagram

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

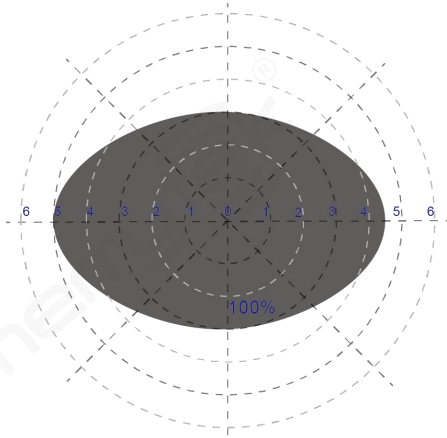


Fast walking speed: 1m/s

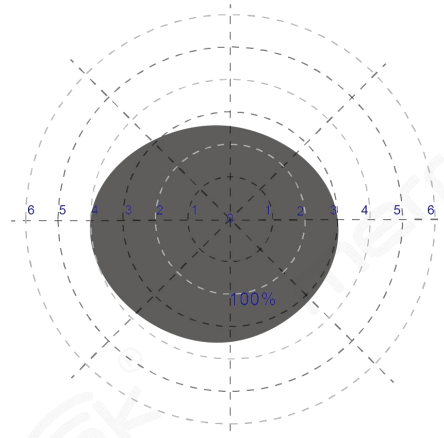


Slow walking speed: 0.3m/s

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

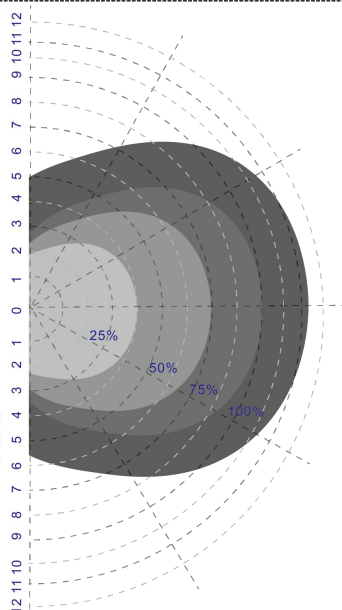


Fast walking speed: 1m/s

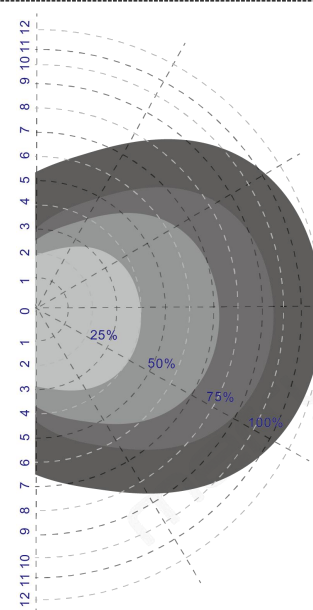


Slow walking speed: 0.3m/s

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



Fast walking speed: 1m/s



Slow walking speed: 0.3m/s