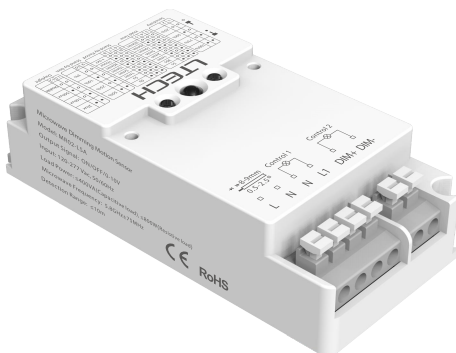


# LTECH

## MR02-LSA

### Microwave Motion Sensor



## Manual



ON/OFF



Detect Motions



Sense Sunlight & LED Light



Daylight Threshold



3-Step Dimming

## Product Introduction

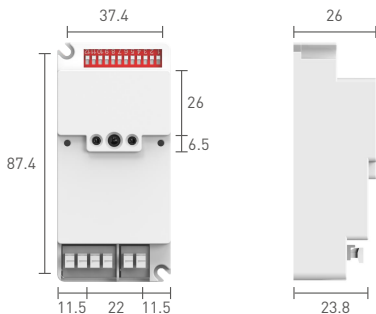
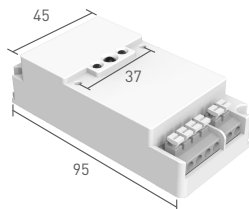
- MR02-LSA is a microwave motion sensor with microwave detection and light sensing function combined.
- Turn on/off 0-10V drivers or lights, and adjust dimming.
- Sense daylight & LED light source and adopt a photosensor that removes IR interference to intelligently control lights with high sensitivity and anti-interference capacity.
- Turn on/off and support 2-step dimming & 3-step dimming, making sensors ideal for hallway, stairway and office applications.
- This compact sensor supports wall mounting and ceiling mounting that let you easily achieve smart lighting control.
- Easily set up sensor parameters using the remote (LR1) or dip switches.

## Technical Specs

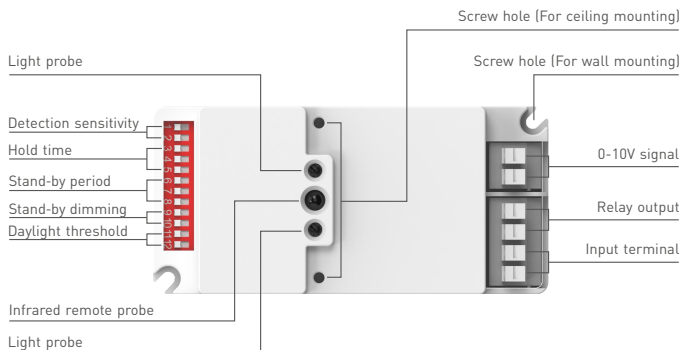
<b>Input</b>	Working voltage	120-277Vac, 50/60Hz
<b>Output</b>	Working mode	NO/OFF, Multi-level 0-10V dimming
	Stand-by power consumption	≤0.5W
	Load capacity	≤400VA(Capacitive load), ≤800W(Resistive load)
<b>Parameters</b>	Microwave frequency	5.8GHz ± 75MHz
	Detection sensitivity	100%, 75%, 50%, 25%
	Hold time	5S, 30S, 1min, 2min, 5min, 10min, 20min, 30min
	Stand-by period	0s, 5S, 1min, 5min, 10min, 30min, 1hour, +∞
	Stand-by dimming	50%, 25%, 10%, 3%
	Daylight threshold	2lux, 10lux, 50lux, Disable
	Detection range	≤10m
	Mounting height	≤6m
<b>Environment</b>	Working temperature	-20°C~60°C
	Storage temperature	-40°C~80°C, 10~95%RH
<b>Others</b>	Terminal specs	Wire diameter: 0.5-2.5mm <sup>2</sup> , Strip length: 8-9mm
	IP rating	IP20
	Mounting	Wall mounting or ceiling mounting
	Net weight	52g±10g
	Dimensions	95x45x26mm (LxWxH)
	Package size	99x49x29mm (LxWxH)

# Product Size

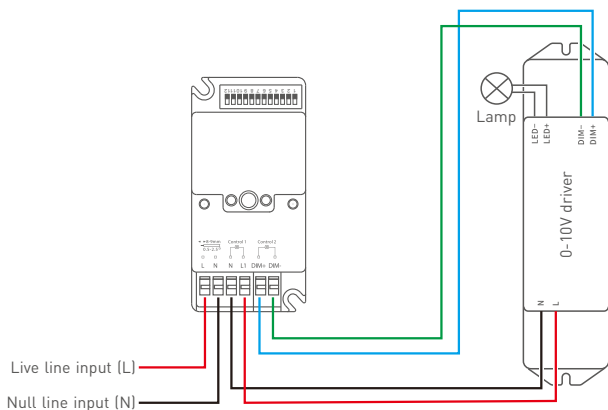
Unit: mm



# Product Structure



## Wire Connection



## Wall mounting

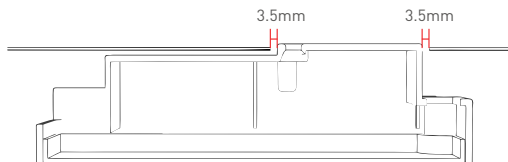
⚠ The product should be installed by a qualified electrician in accordance with electrical codes and product requirements.

Before you install the product and connect wires, please be sure to disconnect the power. Then secure the sensor to the wall with screws.

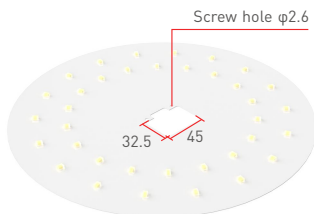


## Ceiling Mounting

Note: Microwaves cannot pass through metal, so please make sure there is no metal object above the sensor. The distance between the microwave antenna and the metal object should be at least 3.5mm. It is not allowed to place the antenna and the metal object on the same horizontal level, as shown in the figure below.



Cut a 45x32.5mm hole on the metal light panel to insert the sensor into it, and two screw holes are needed to be cut as well.



Insert the sensor into the metal light panel (the sensor should be higher than the metal light panel), and then secure the sensor with screws.



# Dip Switch Settings

Dip switch 1-2: Sensibility. Sensor sensitivity can be selected by placing the dip switch in the on or off position to match different detection range.

Dip switch 3-5: Hold time. Lamp remains 100% illuminated over this time period after no motion is detected.

Dip switch 6-8: Stand-by period. Lamp remains at a low light level over this time period before it completely switches off in the long absence of people. When the stand-by period is set to " +∞ " mode, the low light level is maintained until a motion is detected.

Dip switch 9-10: Stand-by dimming. This low light level is used in periods of absence for enhanced comfort and safety.

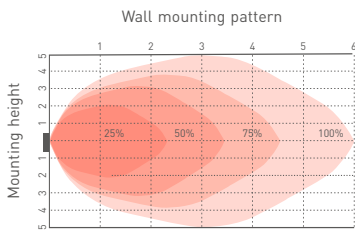
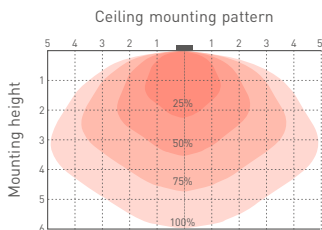
Dip switch 11-12: Daylight threshold. The sensor can be set up to work based on the ambient light level. When the ambient light is 2lux, 10lux or even reaches 25lux, 50lux, the sensor will trigger the light fixture to turn on. "Disable" mode will disable the ambient light sensing feature, which means the light fixture will be triggered to turn on once a motion is detected regardless of the ambient light level.

Sensibility			Hold time			Stand-by period			Stand-by dimming			Daylight threshold		
1	2		3	4	5	6	7	8	9	10		11	12	
●	●	100%	●	●	●	5s	●	●	●	0s	●	●	●	2lux
●	○	75%	●	●	○	30s	●	●	○	5s	●	○	○	10lux
●	○	50%	●	○	●	1min	●	○	●	1min	●	○	○	50lux
○	●	25%	●	○	○	2min	●	○	○	5min	○	●	○	Disable
○	○		○	●	●	5min	○	●	●	10min	○	○		
			○	●	○	10min	○	●	○	30min				
			○	○	●	20min	○	○	●	1hour				
			○	○	○	30min	○	○	○	+∞				

## NOTE:

1. The higher the detection sensitivity you set, the farther the range the sensor can detect. In cases where microwaves pass through walls to mistrigger the light fixture to turn on, detection sensitivity needs to be reduced to narrow the detection area.
2. There are many factors that may affect the detection range of the sensor, such as mounting height, the height and speed of moving people, the position of people and the sensor, the size of the space for installation, and obstructive and reflecting objects.
3. Please do not place dip switches in positions that are not shown in the figure above. Otherwise, the function may be affected.

# Coverage Pattern



## Product Functions

Detect minor movements of humans during their normal daily lives and at the moments when they are not in the sleeping state.



Leaning forward



Bending backward



Lowering the head



Raising the hand



Turning right



Turning left

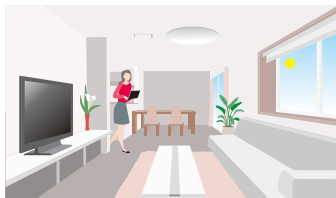


Looking right

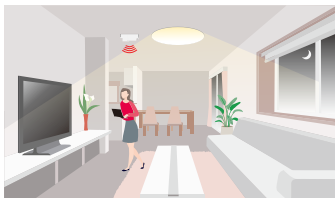


Looking left

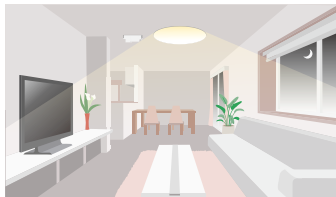
## 1) Auto-on and auto-off (Set stand-by period to 0s)



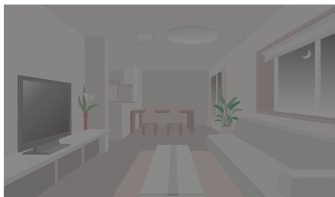
- ① With sufficient ambient light (when light sensing feature enabled), the light fixture won't switch on even when a motion is detected.



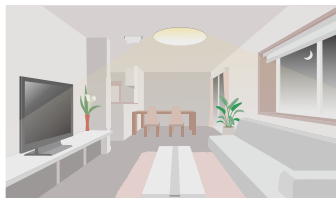
- ② With insufficient ambient light (when light sensing feature enabled), the light fixture will switch on automatically when a motion is detected.



- ③ When the sensor does not detect a motion, time will start counting down according to the preset hold time. After the hold time ends, the light fixture will automatically switch off. If a motion is detected during the hold time, time will start counting down again after no motion is detected.



## 2) 2-step dimming function (Set stand-by period to +∞)

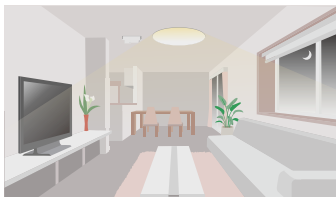
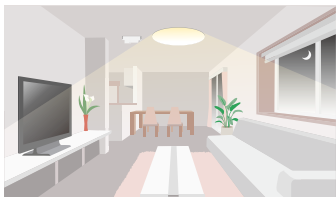


- ① When no motion is detected, the light fixture will remain at the preset low light level (stand-by dimming level).



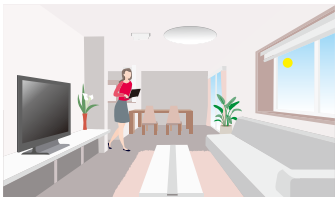
- ② When a motion is detected, the light fixture will be 100% illuminated.



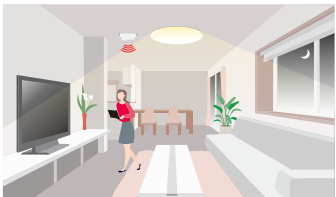


- ③ When the sensor does not detect a motion, time will start counting down according to the preset hold time. After the hold time ends, light will be adjusted back to a low level during the stand-by period. If a motion is detected during the hold time, time will start counting down again after no motion is detected.

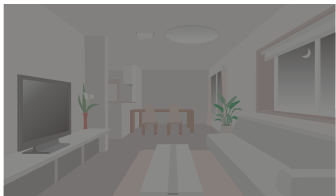
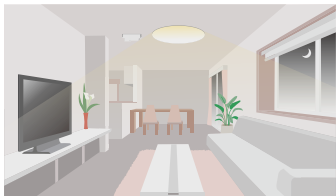
### 3) 3-step dimming function (Set stand-by period to 5s/1min/5min/10min//30min/1hour)



- ① With sufficient ambient light (when light sensing feature enabled), the light fixture won't switch on when a motion is detected.



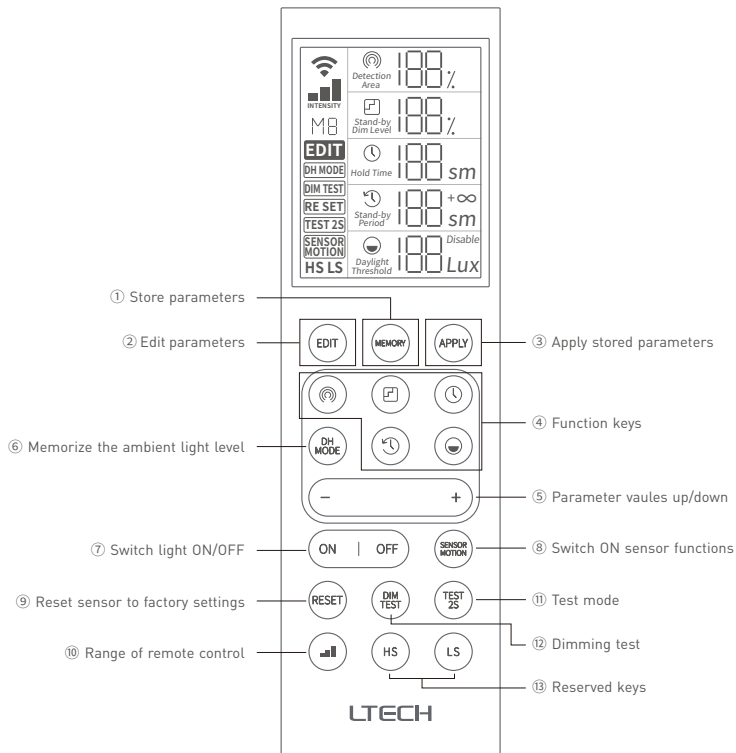
- ② With insufficient ambient light (when light sensing feature enabled), the light fixture will switch on automatically when a motion is detected.



- ③ When the sensor does not detect a motion, time will start counting down according to the preset hold time. After the hold time ends, light will be adjusted back to a low level during the stand-by period. If no motion is detected after the stand-by period ends, the light fixture will switch off automatically.

# Infrared Remote

Configure the sensor parameters using the infrared remote. Please refer to the remote manual for detailed instructions.



## Attentions

- The sensor must be debugged and installed by qualified professionals.
- The sensor must be fixed on the ceiling if you test them, which cannot be placed on the table or on the floor.
- It is better to connect a lamp to the sensor before you test it, so that you can test the sensor work well or not by testing whether the lamp remains on.
- To avoid blocking microwave signals, please place the sensor away from metal panels, concrete walls and beams when you install.
- To avoid mistriggering light fixtures, please place the sensor away from glass, plasterboard and other objects that are easily penetrated by microwaves when you install.
- To avoid wireless signal interference, please place the sensor away from wireless devices such as interchangers and routers. The distance between the sensor and wireless devices should be at least 2m.
- If a pet passes through the detection area, light fixtures may be triggered.
- When several sensors are installed side by side, please be sure the distance between sensors is no less than 1m, so that each sensor functions individually and is not be affected other sensors.

\* This manual is subject to change without prior notice. If there is inconsistency between the manual and the actual product, the actual product shall prevail. If you have any question, please feel free to contact our authorized distributor.

## Warranty Agreement

Warranty periods from the date of delivery: 5 years.

Free repair or replacement services for quality problems are provided within warranty periods.

Warranty exclusions below:

- Beyond warranty periods.
- Any artificial damage caused by high voltage, overload, or improper operations.
- Products with severe physical damage.
- Damage caused by natural disasters and force majeure.
- Warranty labels and barcodes have been damaged.
- No any contract signed by LTECH.

1. Repair or replacement provided is the only remedy for customers. LTECH is not liable for any incidental or consequential damage unless it is within the law.
2. LTECH has the right to amend or adjust the terms of this warranty, and release in written form shall prevail.