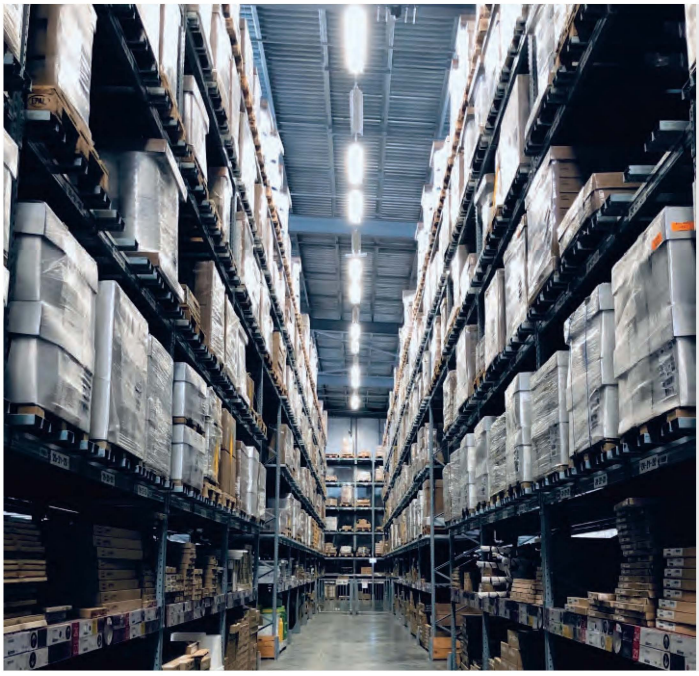
# Radial IP66 batten with CCT switchable Standard,Sensor and Emergency models


## Advantages

- Batten with tool free easy remove and close clips
- 3000, 4000 and 5000K color temperature in the same body and adjusted by selector switch
- Adjustable power input for Lumen output with the same body
- Simple stock management through color temperature by selector switch and Lumen Output by Dip-switch of drivers
- MERRYTEK sensor system for Occupancy comfort and energy saving
- EFFORT models for 1.2 and 1.5m available
- 5x2.5mm$^2$ cable through for easy and quick installation

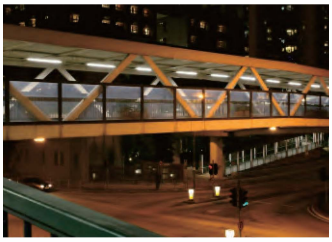


## Features

- 3 sizes of 600, 1200 and 1500mm
- Max > 150Lm/W
- 3000 and 5000K LG or LumiLEDs 2835 chips to create 3000K, 4000K and 5000K in one body
- High Lumen Efficacy 150Lm/W
- IP66 and IK10 to give extra protection
- Auto-test inverter with $LiFePO_4$ batteries by EFFORT
- Basic sensor models with MERRYTEK

Garage

Car Park



Footbridge

Producton Line

UNI-BRIGHT®

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Belcrownlaan 13 Q
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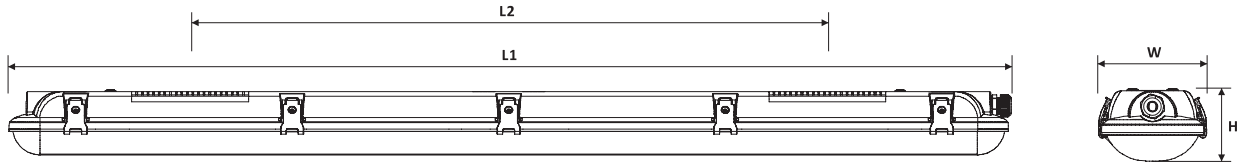
PHILIPS merryfek Lit by LUMILEDS

# General specifications

| Model | 600mm | 1200mm | 1500mm |
|---|---|---|---|
| **Structure for all models** | | | |
| Body and Diffuser | Polycarbonate injection moulding in white | | |
| Diffuser | Polycarbonate injection moulding in opal | | |
| Gearplate | Cold Roll steel epoxy powder coated | | |
| Accessories | Stainless steel mounting clips x 2, cable gland x 2, ceiling or wall mounted screws x 2 sets | | |
| Stainless steel clips qty ( Pcs ) | 6 | 10 | 12 |
| Cable through | 5x2.5mm$^2$ cable through from one to the other end with 5 pole terminal block x 2, extra 3 pole terminal block for emergency models | | |
| IP rating | 66 | | |
| IK rating | 10 | | |
| Dimension ( mm ) | 607x116x80 | 1207x116x80 | 1507x116x80 |
| **Working conditions and warranty** | | | |
| Ambient temperature ( °C ) | -25 to 35 | | |
| Working Humidity ( % ) | 10 to 90 | | |
| Life time ( Hours ) | 100,000 | | |
| Warranty | 5years or 50,000 hours whichever come first | | |
| Compliant | CE-LVD, CE-EMC, RoHS ,CE-RED for sensor models | | |

# Dimension




| Model | Length L1(mm) | Length L2(mm) | Width W(mm) | Height H(mm) |
|---|---|---|---|---|
| RD6018 RD6018E RD6018S | 607 | 280 | 116 | 80 |
| RD12033 RD12033E RD12033S RD12033SE | 1207 | 765 | 116 | 80 |
| RD15060 RD15060E RD15060S RD15060SE | 1507 | 1065 | 116 | 80 |

# Standard and Sensor models

| Model | RD6018 | RD6018S | RD12033 | RD12033S | RD15060 | RD15060S |
|---|---|---|---|---|---|---|
| MERRYTEK sensor | X | MC098S | X | MC098S | X | MC098S |
| **Electrical data** | | | | | | |
| Driver model ( Philips Xitanium ) | 929002831880 | | | | 929002832080 | |
| Driver description | Xitanium 41W 0.5-0.8A 51V DS 230V | | | | Xitanium 72W 1.2/1.4A 51V DS 230V | |
| Input voltage ( Vac ) | 220-240Vac, 50Hz | | | | | |
| Max Input current ( mA ) | 260 | | | | 370 | |
| Max Input power ( W ) | 11/14/16/ 19 | | 22/26/31/37 | | 34/42/50/59 | |
| Power factor | >0.9 | | | | | |
| Driver Efficiency ( % ) | 88 | | 88 | | 89 | |
| Output voltage ( Vdc ) | 25 | | 39 | | 39 | |
| Output current ( mA ) | 500/600/700/800 ( By dip-switch ) | | | | 1200/1400 ( By dip-switch ) | |
| Output Current Ripple | ≤ 4% | | | | | |
| TC Max ( °C ) | 75 | | | | 80 | |
| Class | II | | | | | |
| Inrush current ( A ) | 15.3 | | | | 25.1 | |
| THD | <20% | | | | | |
| Surge protection Diff/common mode ( KV ) | 1/2 | | | | | |
| Short circuit protection | Yes | | | | | |
| Overload protection | Yes | | | | | |
| Over power protection | Yes | | | | | |
| Max no protected by 16A Type B MCB ( Pcs ) | 72 | | | | 28 | |
| **Photometric data** | | | | | | |
| Ra | >80 | | | | | |
| Color temperature ( K ) | 3000, 4000, 5000K by selector switch | | | | | |
| Max Lumen Output at 3000K ( Lm ) | 2550 | | 5300 | | 8600 | |
| Max Lumen Output at 4000K ( Lm ) | 2800 | | 5600 | | 9300 | |
| Max Lumen Output at 5000K ( Lm ) | 2750 | | 5600 | | 9350 | |
| Color tolerance | ≤ 5 SDCM | | | | | |
| LED chips | LG or LumiLEDs 2835 , 0.5W, 3Vdc or equivalent 3000 and 5000K | | | | | |
| No of chips | 2 x 108 | | 2 x 168 | | 2 x 308 | |
| Beam angle | 110° | | | | | |

# Emergency models with and without sensor

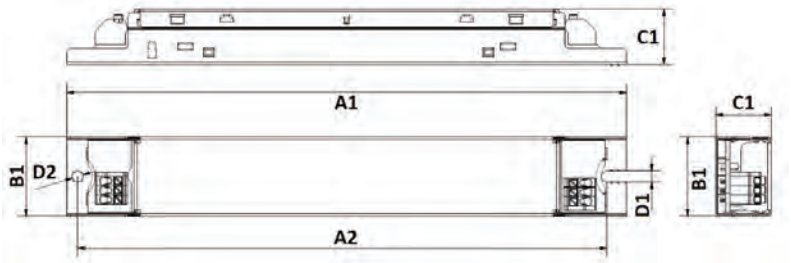
| Model | RD6018E | RD12033E | RD12033SE | RD15060E | RD15060SE |
|---|---|---|---|---|---|
| MERRYTEK sensor | X | X | MC098S | X | MC098S |
| Emergency Power Supply | √ | √ | √ | √ | √ |
| **Electrical data** | | | | | |
| Driver model ( Philips Xitanium ) | 929002831880 | | | 929002832080 | |
| Driver description | Xitanium 41W 0.5-0.8A 51V DS 230V | | | Xitanium 72W 1.2/1.4A 51V DS 230V | |
| Input voltage ( Vac ) | 220-240Vac, 50Hz | | | | |
| Max Input current ( mA ) | 260 | | | 370 | |
| Input power ( W ) | 11/14/16/ 19 | 22/26/31/37 | | 34/42/50/59 | |
| Power factor | >0.9 | | | | |
| Driver Efficiency ( % ) | 88 | 88 | | 89 | |
| Output voltage ( Vdc ) | 25 | 39 | | 39 | |
| Output current ( mA ) | 500/600/700/800 ( By dip-switch ) | | | 1200/1400 ( By dip-switch ) | |
| Output Current Ripple | ≤ 4% | | | | |
| TC Max ( °C ) | 75 | | | 80 | |
| Class | II | | | | |
| Inrush current ( A ) | 15.3 | | | 25.1 | |
| THD | <20% | | | <10% | |
| Surge protection ( KV ) | 1/2 | | | 2/2 | |
| Short circuit protection | Yes | | | | |
| Overload protection | Yes | | | | |
| Over power protection | Yes | | | | |
| Max no protected by 16A Type B MCB ( Pcs ) | 72 | | | 28 | |
| **Photometric data** | | | | | |
| Ra | >80 | | | | |
| Color temperature ( K ) | 3000, 4000, 5000K by selector switch | | | | |
| Max Lumen Output at 3000K ( Lm ) | 2550 | 5300 | | 8600 | |
| Max Lumen Output at 4000K ( Lm ) | 2800 | 5600 | | 9300 | |
| Max Lumen Output at 5000K ( Lm ) | 2750 | 5600 | | 9350 | |
| Color tolerance | ≤ 5 SDCM | | | | |
| LED chips | LG or LumiLEDs 2835 , 0.5W, 3Vdc or equivalent 3000 and 5000K | | | | |
| No of chips | 2 x 108 | 2 x 168 | | 2 x 308 | |
| Beam angle | 110° | | | | |

# Specification of Auto-test Emergency Supply

| Parameter | Description |
|---|---|
| Inverter Dimension ( mm ) | 157.5 X 30.4 X 21mm |
| Input Voltage | 220-240Vac, 50/60Hz |
| Output Voltage | 20-60Vdc |
| Battery type | $LiFePO_4$ 3000mAH 3.2Vdc |
| Charge time | <24 hours |
| Designed Life | >4 Years |
| Operating Temp. ( °C ) | 0 - 55°C |
| Emergency Power Output | 2.5W |
| Work Mode | Maintain |
| Indicator Light | To show the status of the inverter and battery |
| Protection | Over-Charge / Over-Discharge |
| Operating time for 2.5W | >3.0 hours |

# Driver specifications for Standard and Emergency model

| Driver Model | A1(mm) | A2(mm) | B1(mm) | C1(mm) | D1(mm) | D2(mm) |
|---|---|---|---|---|---|---|
| 929002831880 | 188 | 176.4 | 30.2 | 21 | 4.1 | 4.1 |
| 929002832080 | 279.5 | 265 | 30.2 | 21 | 4 | 4 |




929002831880

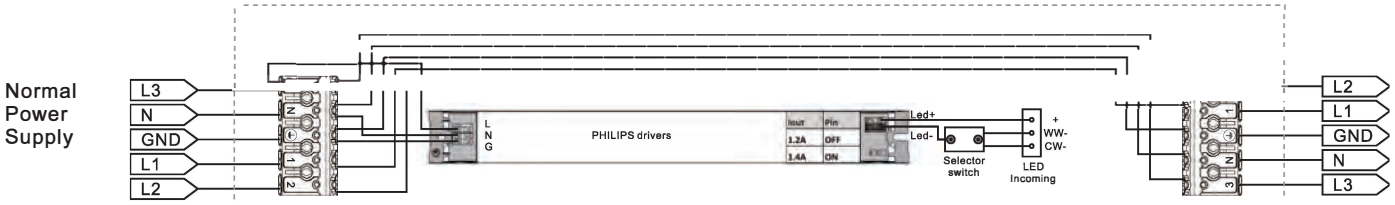

929002832080

# Wiring diagram for Standard and emergency models

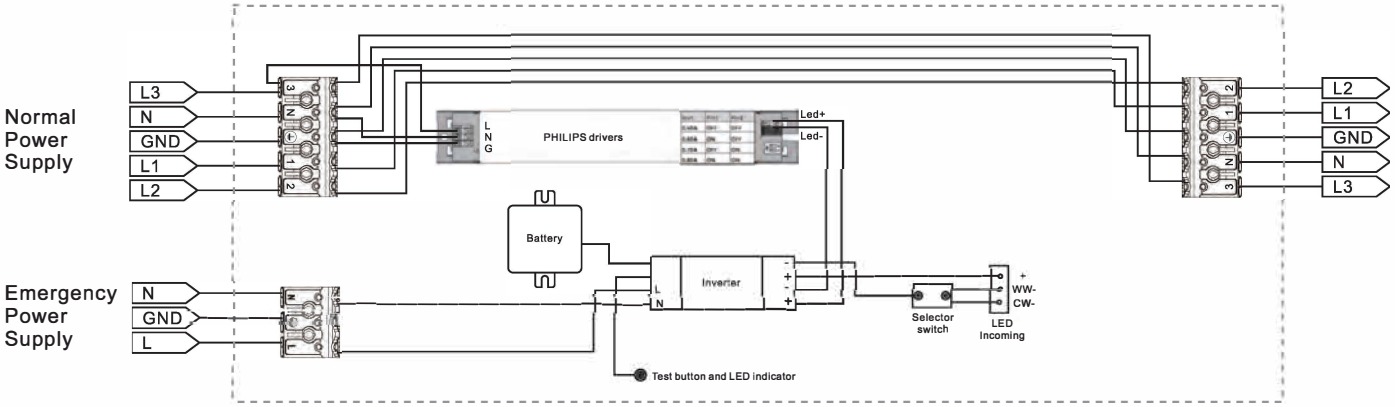
Standard model :0.6 and 1.2m


Live connected on incoming side for Easy switching to L1 or L2

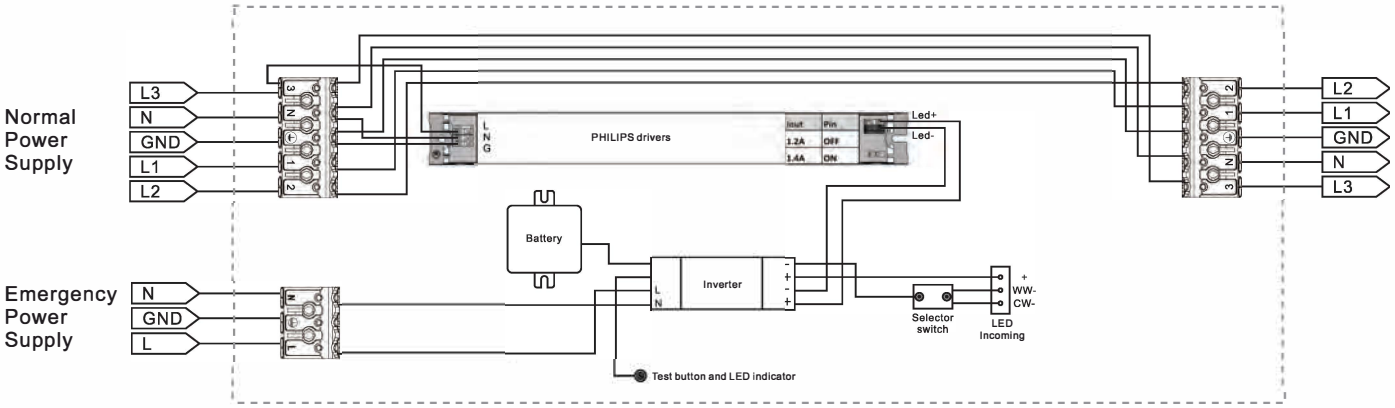
Standard model : 1.5m



Emergency model :0.6m, 1.2m

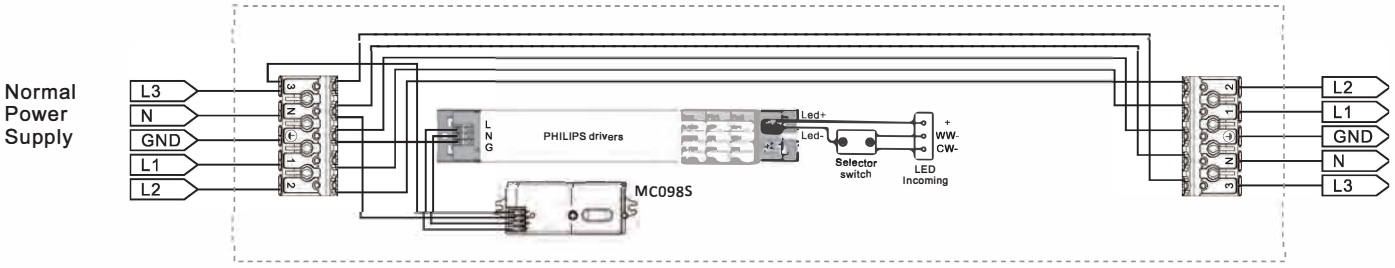



Emergency model : 1.5m



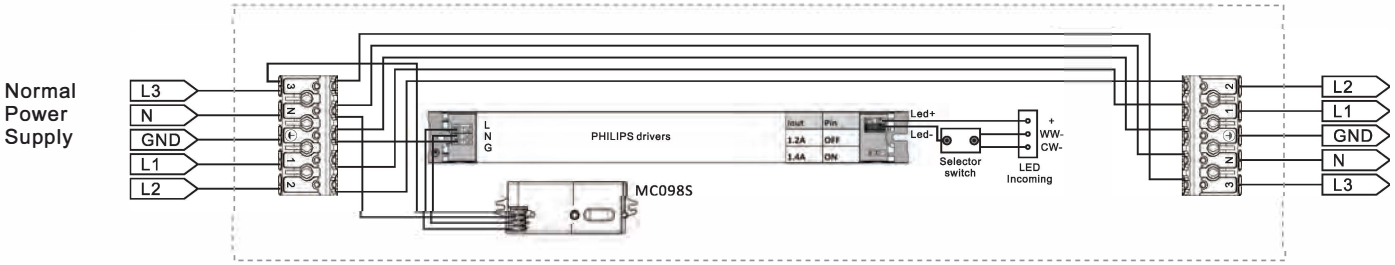

# Wiring diagram of MC098S sensor models

Sensor model :0.6m, 1.2m



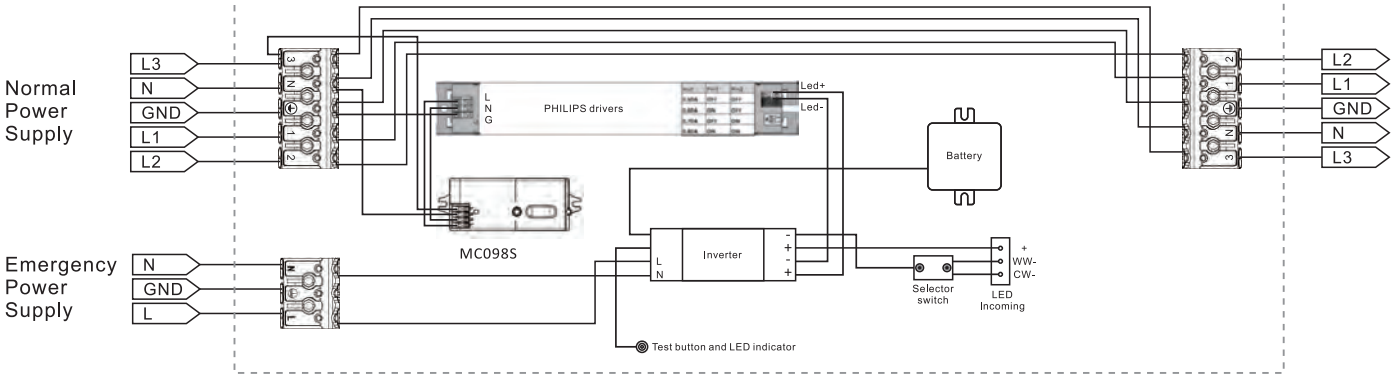

Live connected on incoming side for Easy switching to L1 or L2

Sensor model :1.5m

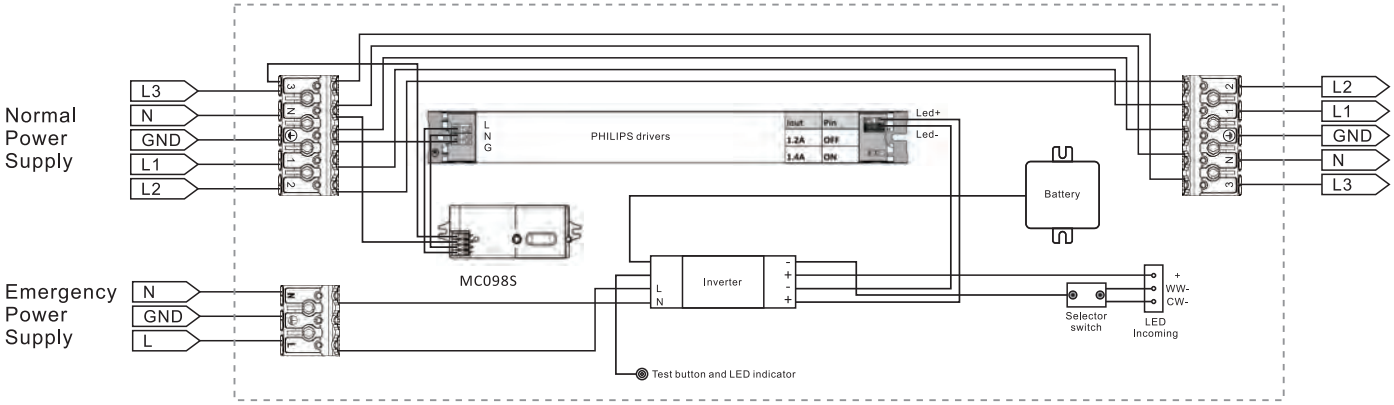


# Wiring diagram of MC098S sensor models with Emergency supply

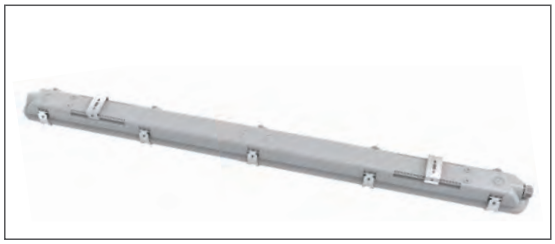
Sensor model + Emergency supply :1.2m



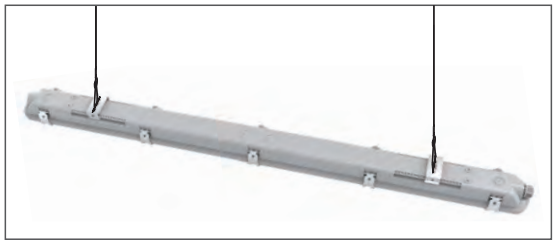

Sensor model + Emergency supply :1.5m




# Installation Method



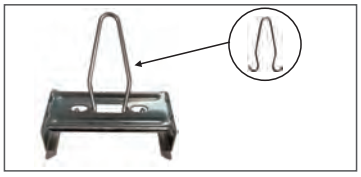
Ceiling or wall mounted
Good for most installation environment



Pendant Mounted
This installaton method is good for high ceiling taller than 3m.

# Suspension accessories

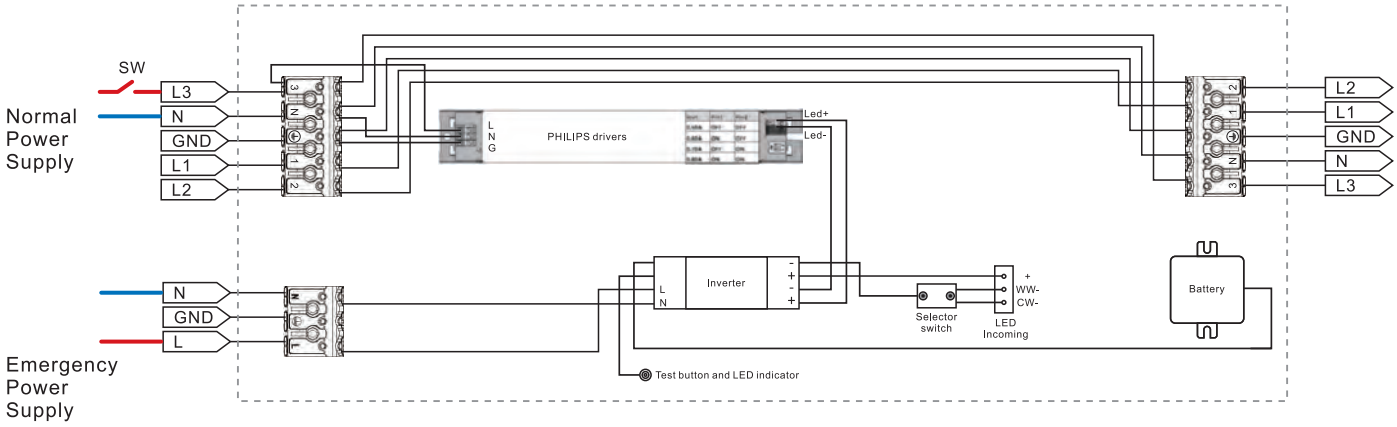
Suspension wire
Adjustable length of 3M max for pendant mounted



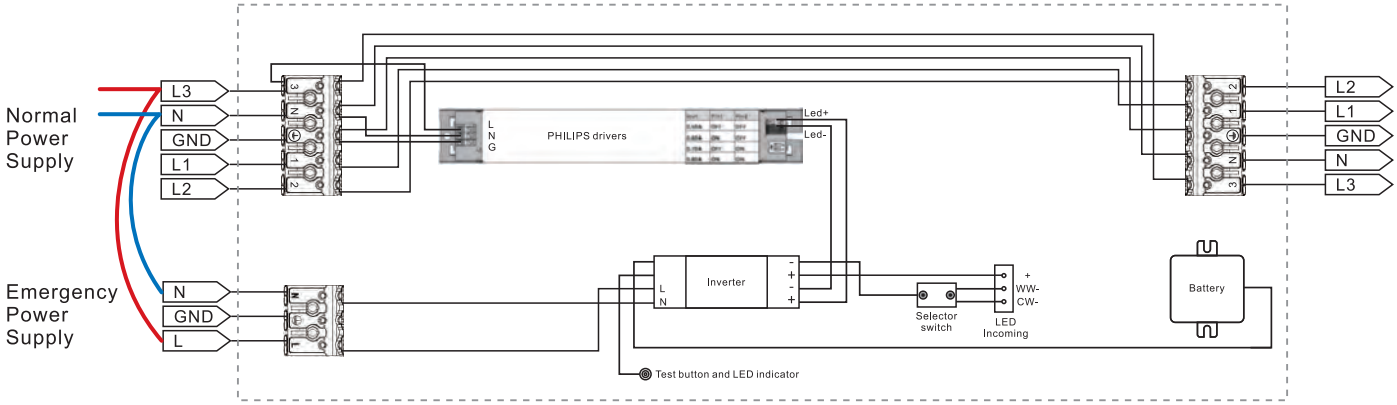
Hook for pendant mounted

# Different Emergency mode wiring

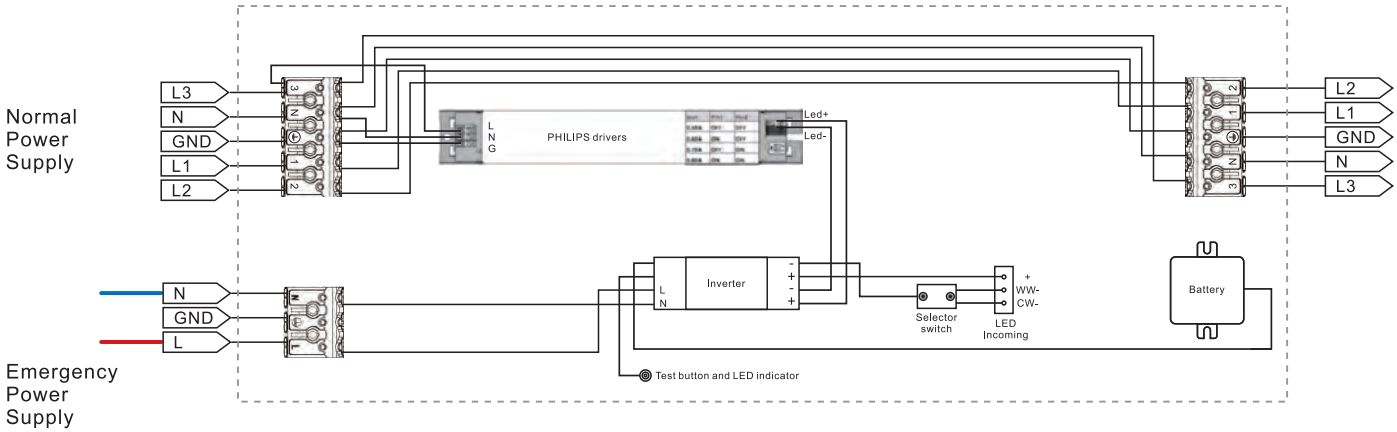
## 1. Switch ON/OFF and Emergency Power Supply wiring



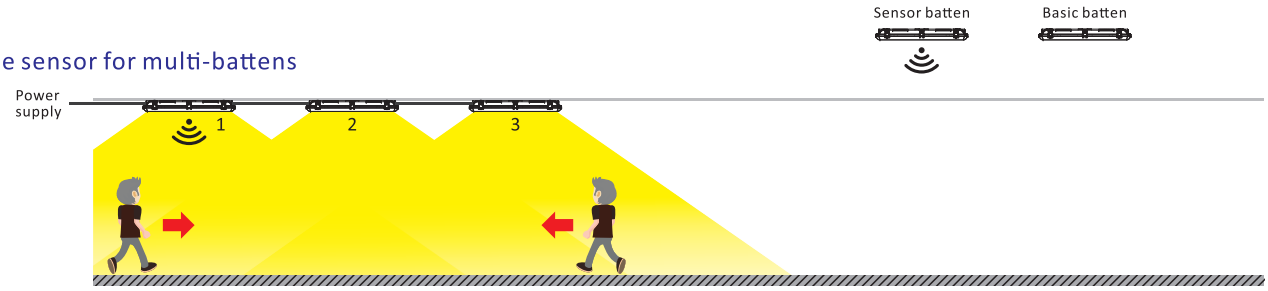

## 2. Maintained type wiring



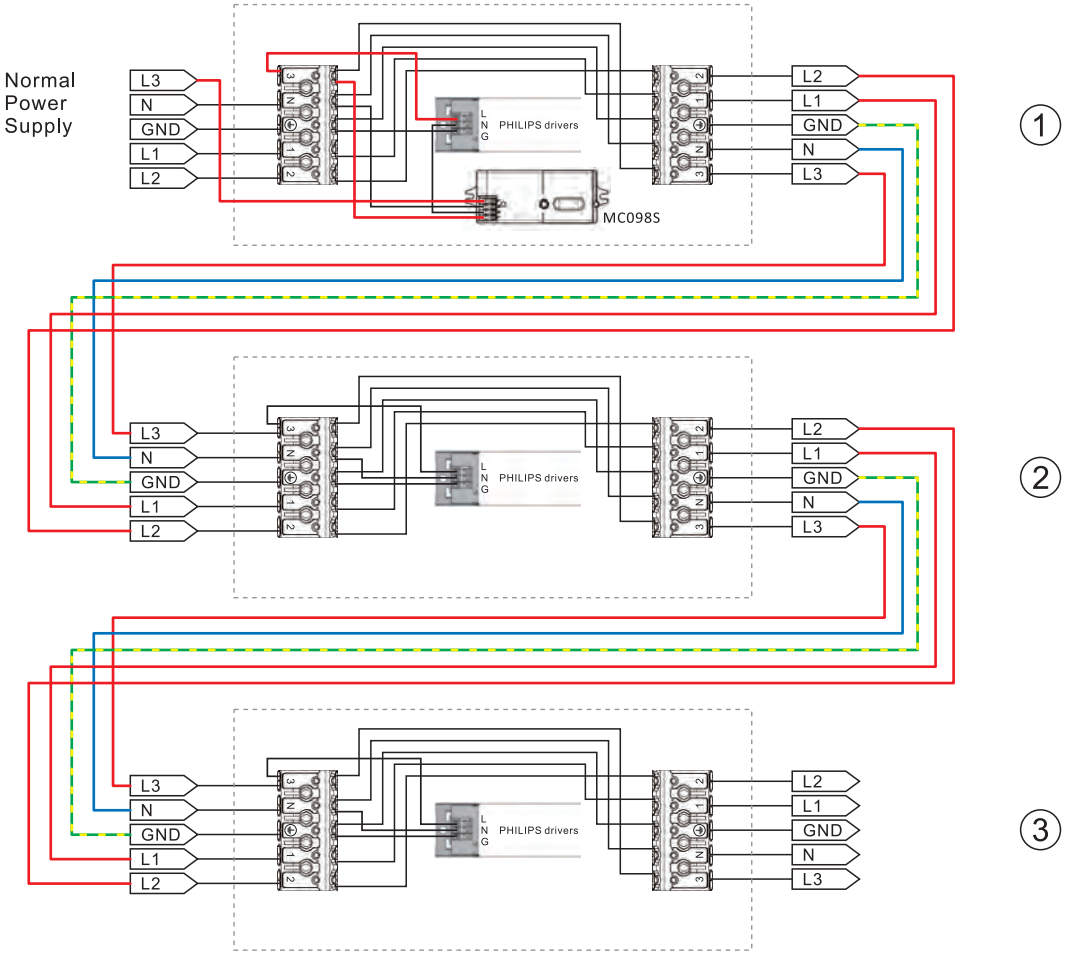

## 3. Non-maintained type wiring



# Radial batten one sensor to serve multi battens

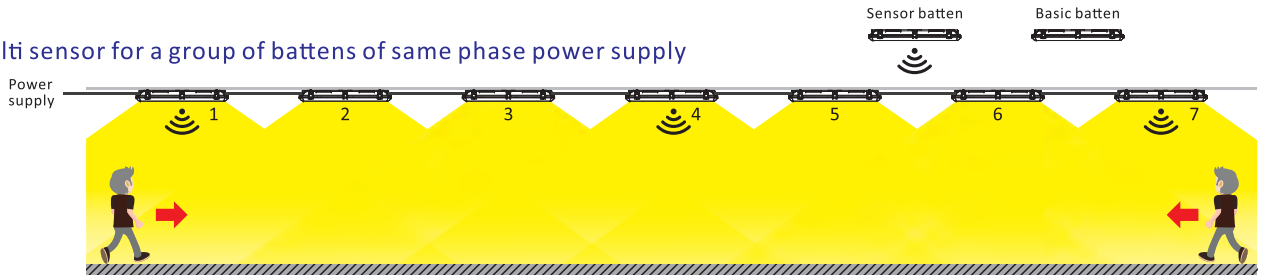



Remark :
1. Sensor max power : 400W
2. Sensor have max 8m so cannot go for distance longer than 8m
3. Multiple sensor wiring provided if necessary



# Radial batten 3 sensors to serve multi battens with same phase power supply

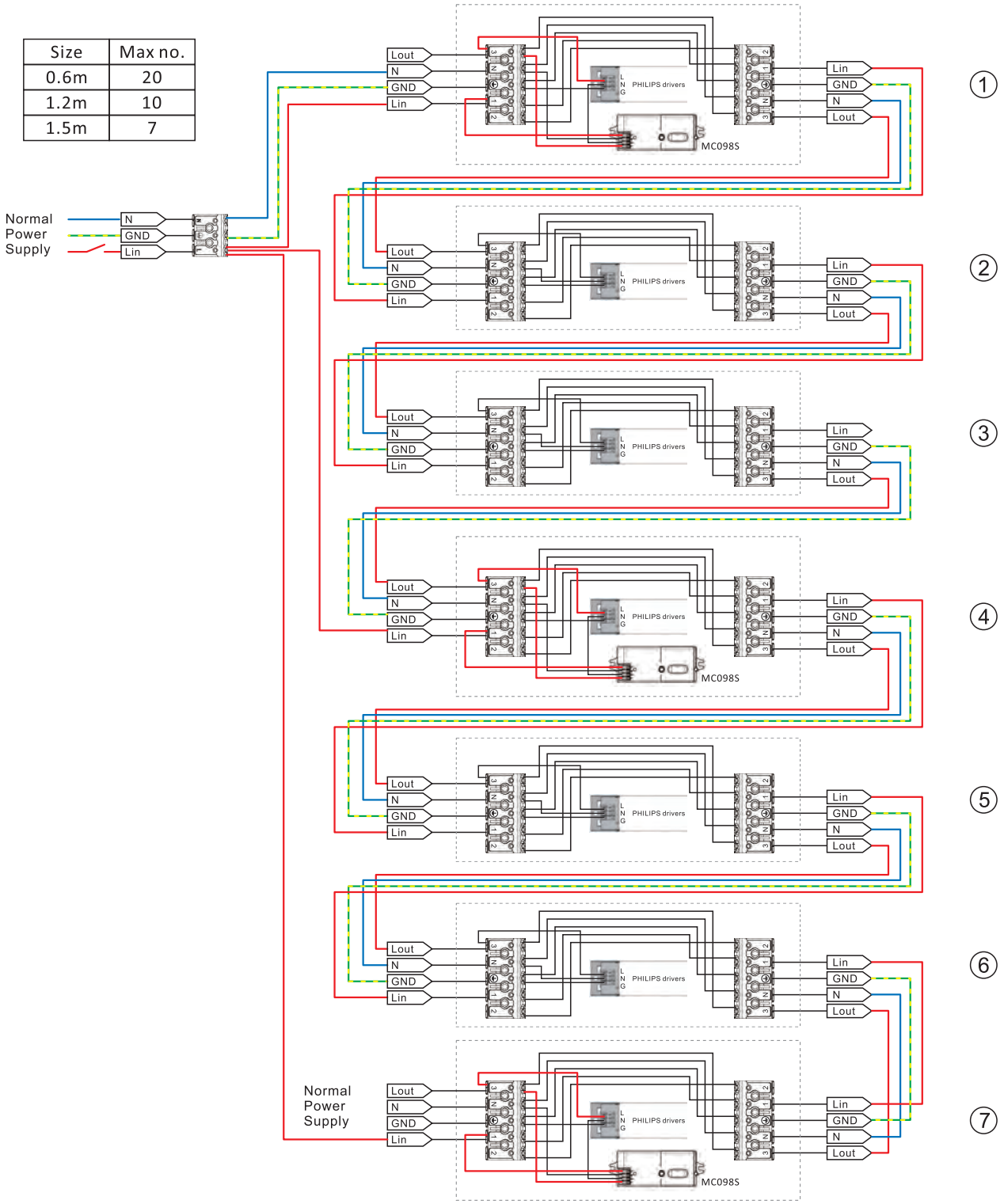
## Multi sensor for a group of battens of same phase power supply



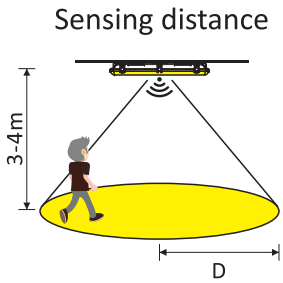

Remark :

1. Sensor max power : 400W
2. Sensor have max 8m so cannot go for distance longer than 8m
3. Multiple sensor wiring max no of battens

| Size | Max no. |
|---|---|
| 0.6m | 20 |
| 1.2m | 10 |
| 1.5m | 7 |

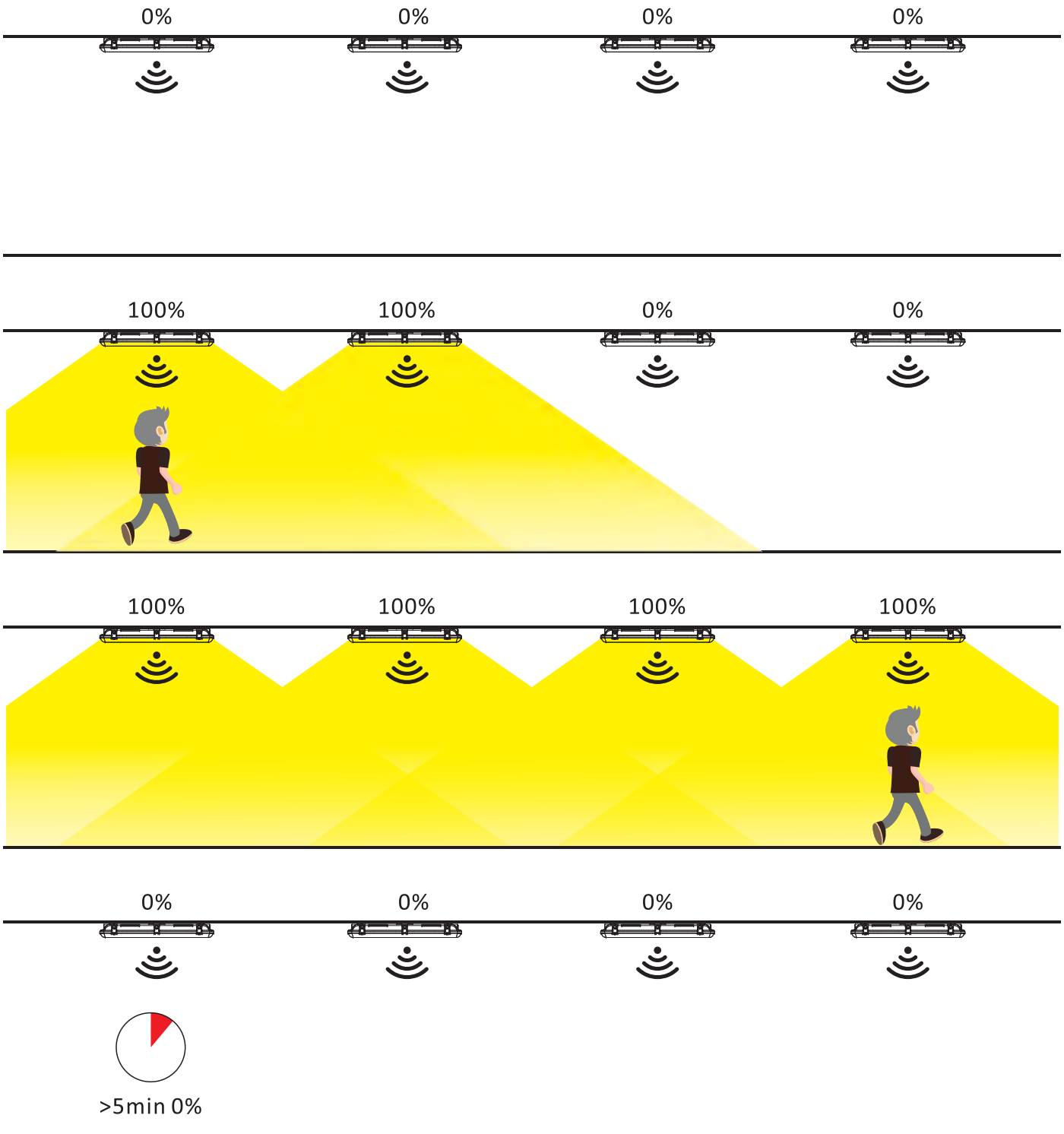


# How Radial batten work with sensor




## Setting the following by the dip-switch in the sensor

**Sensing distance** : 1-2m, 2-4m, 4-6m, 6-8m
**Hold time** : 5s, 30s, 90s, 5min, 20min, 30min
**Daylight threshold** : 2Lux, 10Lux, 30Lux, 50Lux, Disable
**Override sensor** : Quick switch ON/OFF 3 times within 2sec to override sensor function. Lights will switch on all the time. Power off and on again to recover sensor function.



# MERRYTEK sensor specifications

## 1. Features

MC098S

- Ultra-slim design for Tri-proof LED light
- Patented antenna design makes reliable detecting, avoid missing triggered when sensor built-in backside of metal LED plate.
- Adjustable detecting sensitivity via DIP switches, suitable to variety of installation sites.
- Support 6m Max. Mounting height .
- 5 years warranty

## 2. Parameter

| | | |
|---|---|---|
| **Input** | Operating Voltage Rage | 198-264V AC, 50Hz/60Hz |
| | Rated Voltage | 220-240V AC, 50Hz/60Hz |
| | Stand-by Power | ≤0.5W |
| | Surge Test | L--N: 1kV |
| **Output** | Working Mode | ON/OFF function |
| | Type of Load | Inductive or Resistive |
| | Load Capacity | 400W(Inductive) ; 800W(Resistive) |
| | Max. Surge Capacity | 30A (50% Ipeak, twidth =500uS, 230Vac full load, cold start);<br>60A (50% Ipeak, twidth =200uS, 230Vac, full load, cold start ) |
| **Sensor Parameters** | Operating Frequency | 5.8 GHz ±75 MHz, ISM Band. |
| | Transmitting power | 0.5mW Max. |
| | Hold time | 5s//30s/90s/5min/20min/30min |
| | Detection Sensitivity | 100%/75%/50%/25% |
| | Daylight Sensor | 2Lux/10Lux/30Lux/50Lux/Disable |
| | Detecting Radius | 3-10m (mounting height 3-4m), 2-8m(mounting height 6m) |
| | Mounting Height | 6m Max. |
| | Detecting Angle | 150° (Wall mounted), 360° (Ceiling mounted) |
| **Operating Environment** | Operating Temperature | -25℃...+60℃ |
| | Storage Temperature | -40℃...+80℃(Humidity: 10%-95% Non-condensing) |
| **Certificate Standards** | Safety standards | EN61058-1 |
| | EMC standards | EN300440; EN301489-1; EN55015; EN61547; EN61000-3-2;EN61000-3-3; EN62479 |
| | Environmental Requirement | Compliant to RoHS |
| | Certificate | CE, RED |

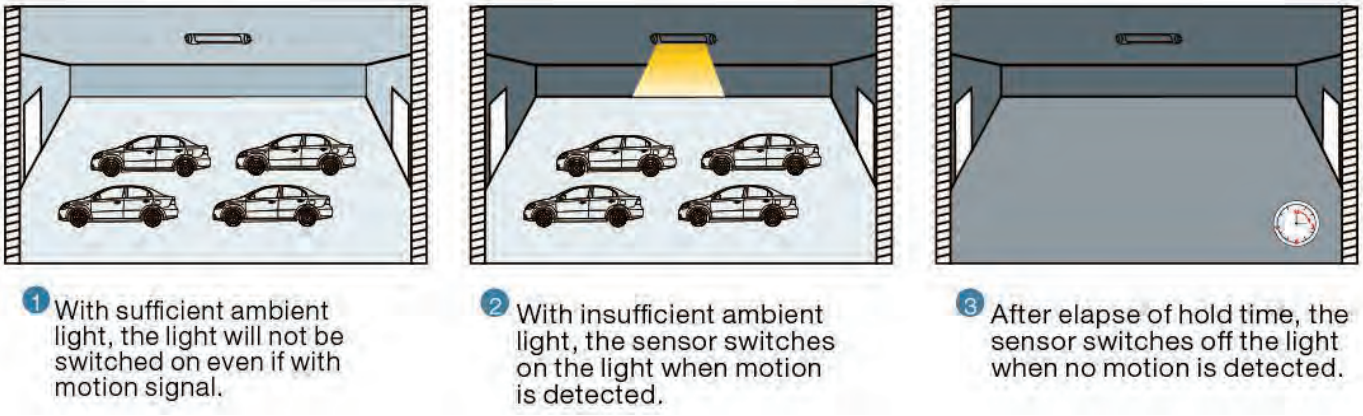
| | | |
|---|---|---|
| **Others** | Wiring | Press-in Type Terminals, wire diameter: 0.75-1.5mm$^2$ |
| | IP Rating | IP20 |
| | Protection Class | Class II |
| | Installation | Built-in |
| | Dimension | 77.5*34.5*22mm |
| | Package | Bubble bag+Clapboard + Carton ( K=A ) |
| | Net Weight | 58±2g |
| | Lifetime | 5 years warranty @Ta 230V full load |

Note

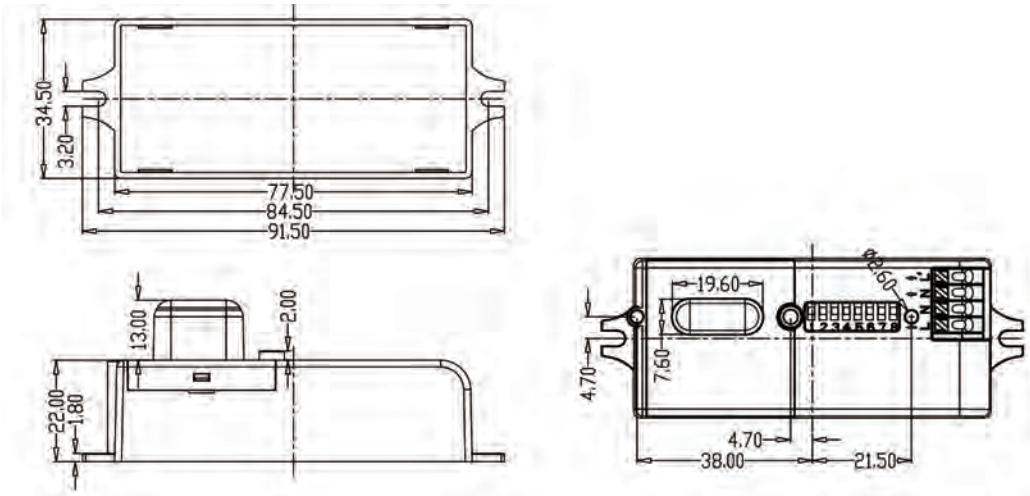
1. “N/A”means not available.
2. Detection area is effected on volume of motion object and motion speed. The detection area is tested by a 170cm height person and walking speed is 0.3m/s.

# 3.Function

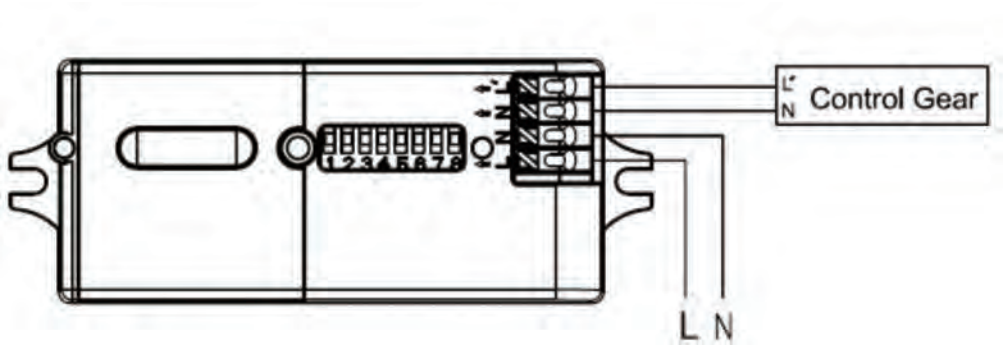
On/OFF Function




# 4. Dimension (mm)

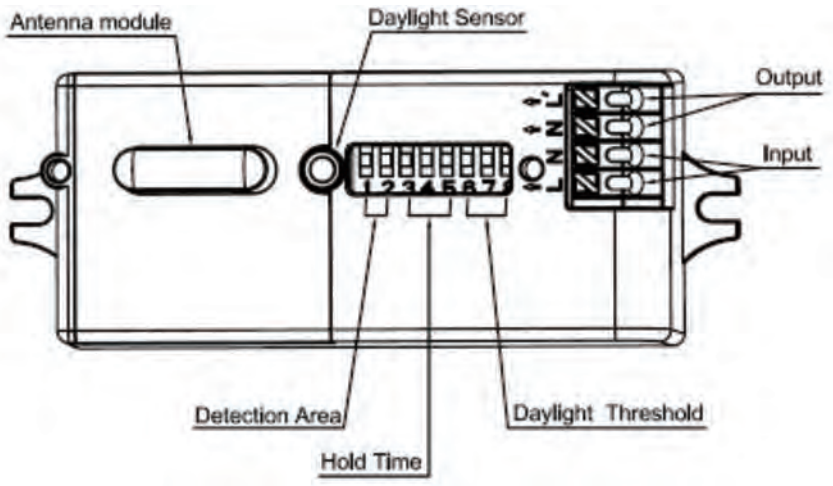


# 5. Wiring




*The sensor is designed for connect one load only. Connect more than one loads may damage the sensor.

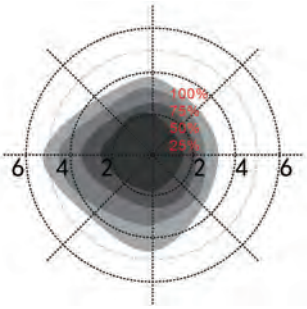
# 6. Structure




# 7. Radiation Pattern

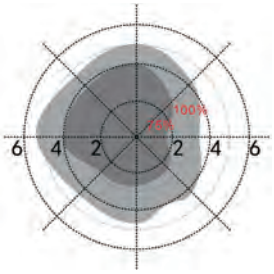
1) Ceiling mounting

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

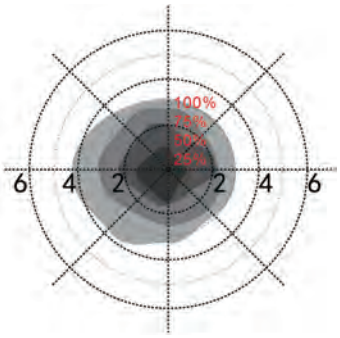



Normal moving (Speed:1m/s)

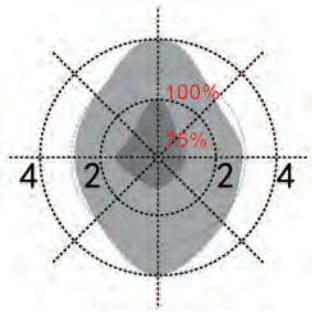
Ceiling mounted height: 6m(*)
Sensitivity:100%/75%




Normal moving (Speed:1m/s)




Slow moving (Speed: 0.3m/s)

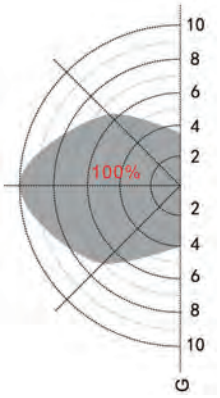



Slow moving (Speed: 0.3m/s)

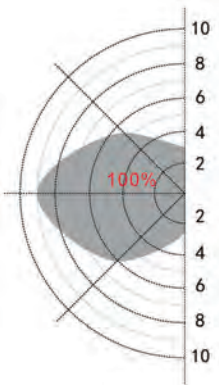
*Only 100%/75%detection sensitivity is workable when installed at 6m mounting height. 25%/50% sensitivity is not able to detect motion signal.

2) Wall mounting

Horizon mounted height: 2m
Sensitivity: 100%




Normal moving (Speed: 1m/s)




Slow moving (Speed 0.3m/s)

# 8. DIP Switch Setting

Detection Area (Sensitivity)

| | 1 | 2 |
|---|---|---|
| 100% | ON | ON |
| 75% | - | ON |
| 50% | ON | - |
| 25% | - | - |

Hold Time

| | 3 | 4 | 5 | |
|---|---|---|---|---|
| Ⅰ | ON | ON | ON | 5S |
| Ⅱ | - | ON | ON | 30S |
| Ⅲ | ON | - | ON | 90S |
| Ⅳ | - | - | ON | 5min |
| Ⅴ | ON | ON | - | 20min |
| Ⅵ | - | - | - | 30min |

Daylight Threshold

| | 6 | 7 | 8 | |
|---|---|---|---|---|
| Ⅰ | ON | ON | ON | 2Lux |
| Ⅱ | ON | ON | - | 10Lux |
| Ⅲ | - | ON | - | 30Lux |
| Ⅳ | ON | - | - | 50Lux |
| Ⅴ | - | - | - | Disable* |

*Disable" means the daylight sensor not work. it will turn on light once motion is detected regardless of ambient light .

## 9. Override Function

Quick switch ON/OFF 3 times within 2sec to override sensor function. Lights will switch on all the time. Power off and on again to recover sensor function.

## 10. Initialization

After power on, the sensor automatically turns on light at 100% brightness. After 10sec, it turns off the light. During the initialization, the sensor is not able to detect movement.

## 11. Factory Setting

Detection area: 100%, Hold Time: 5S, Daylight Sensor: Disable

## 12. Application Notice

1) The sensor should be installed by a professional electrician. Please turn off the power before installing, wiring, changing the setting of the DIP switch.
2) The sensor which installed in the plastic and glass lampshade will reduce the sensitivity.For every 3mm increase in thickness, the sensitivity will be reduced by 20%.
3) The light sensitivity threshold is in a sunny environment, no shadow and ambient light diffuse reflection.Ambient lux level will be different in different environment, weather, climate, time-of-day and season.
4) The parameters of the sensor may need to be reconfigured in different installation environments.
5) This sensor is for indoor use only. It will affect the waterproof effect for outdoor use. Wind, rain, and moving objects around will cause false triggering.
6) The distance between any inductive sensors should be greater than 3m.
7) Do not place the sensor close to high-density objects such as metal, glass,concrete walls, etc, false triggering
could happen. 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.
8) Please ensure that there are no moving signals around the sensor, such as fan,DC motor, sewer pipe, air outlet, etc., the sensor may generate false trigger.
9) You are advised to test 5 samples before mass application of sensor in a new lighting project.
10) Due to continuous improvement, the contents of this instruction could be changed without prior notice.
11) If the sensor is built under metal board ,make sure the sensor surface should to be seamless close to the metal plate without space .