

Entry / ECO

Standard / STD

Professional / PRO

ODM & OEM

Intelligent / INT

2019

**STD**  
Specifications



LED Ceiling Light

AL91 Series



**luzon**  
lighting™



## Introduction

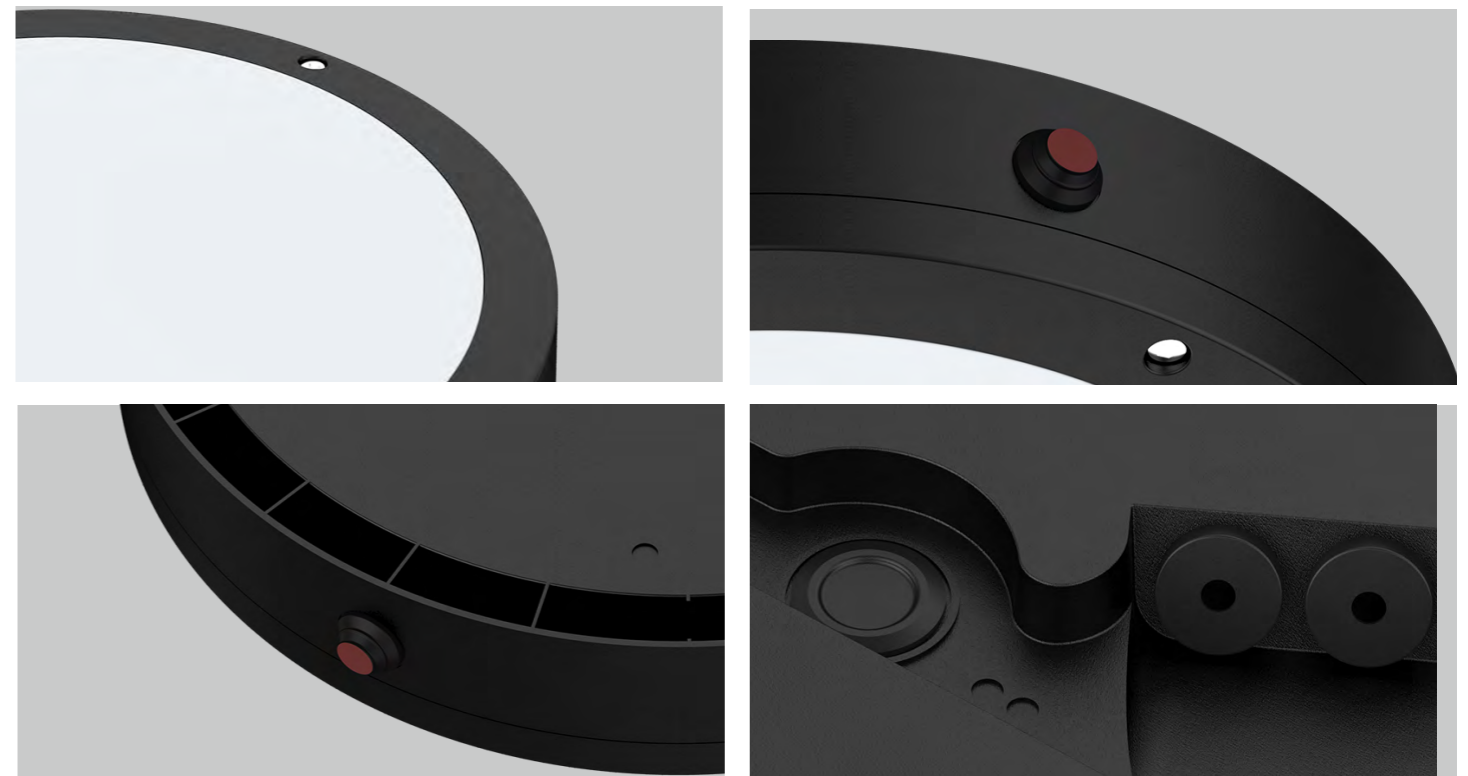
This ceiling light has multiple shapes: circular, semicircle, square, oval. Adopt high lumen SMD LED and lighter weight fire-rated material to ensure better heat resistance and corrosion resistance. Wall mounted and surface mounted available. The base and shade are detachable which make easier maintenance and installation.

## Features

- Multiple shape options: circular, semicircle, square, oval.
- High lumen efficiency, 100lm/W.
- Interchangeable CCT (3000/4000/5700k) with slide switch.
- Interchangeable wattage for round shape only.
- IP65, IK10.
- Triac/ DALI/ 0-10V Dimmable.
- Multiple functions: adjustable sensor, Emergency, adjustable power.

## Application Areas

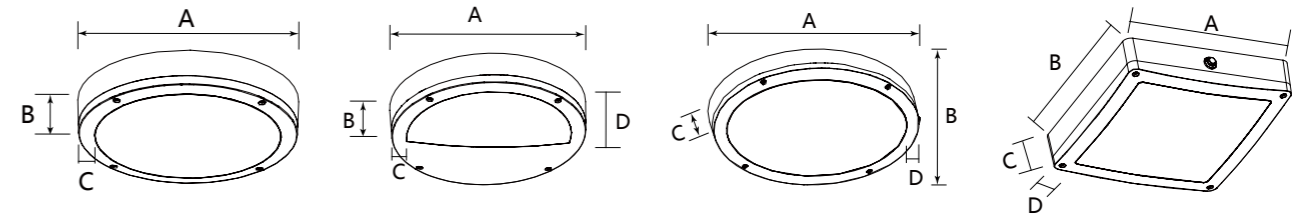
It is designed for general lighting applications in office, supermarket, shop, school, hotel, etc. It is also widely used for public areas, such as stairway, lobby, reception, corridors etc.





## Technical Data Sheet (1)

Model No.	11"Circular/11"Semicircle		11"Circular		14"Circular		
	AL91-11-12W	AL91-11-18W	AL91-11-25W	AL91-14-25W	AL91-14-30W		
Dimension(mm)	Ø275*59				Ø350*59		
Cutout (mm)	-				-		
Watt(W)	12W	18W	25W	25W	30W		
Rated Input Voltage(V)	AC100-240V    AC230V						
Input Voltage(V)	AC85-265V    AC200-240V						
LED Module Input	-						
Light Source	SMD						
SDCM	<6 (@3000K 4000K 5000K)						
CCT(K)	1-CCT: 3000K/4000K/5000K/5700K    3-CCT: 3000K + 4000K + 5700K						
CCT Selection DIP Switch	YES						
Luminous Flux (lm) ±5%	Non-DIM	1-CCT	1000~1200	1480~1750	2140~2420	2140~2420	2520~2800
			950~1150	1450~1720	2120~2400	2120~2400	2500~2780
	DIM	3-CCT	1000~1250	1480~1780	2140~2450	2140~2450	2520~2850
			950~1200	1480~1750	2120~2430	2120~2430	2500~2820
CRI	≥80						
Beam Angle (°)	110°						
UGR	-						
LED Driver	Built-in						
Dimming Option	Triac/ DALI/ 0-10V						
Sensor	adjustable sensor						
Emergency Kits	YES						
Electrical Class	Class II						
Ingress Protection (IP Rating)	IP65						
Impact Resistance (IK Rating)	IK10						
Product Finishing(Base)	BLACK RAL 9005 / WHITE RAL9016						
Materials of Optics	PC						
Materials of Housing	PC						
Lifetime (hr)	50,000h						
Glow wire test (°C)	750°C (Cover) 850°C (Lamp Base)						
Operating Temp. (°C)	-20°C ~45°C						
Storage Temp. (°C)	-20°C ~65°C						
Installation	Surface mount						



## Measurement

Model	Dimension(mm)				Size(mm)	Product Weight (Kg)		Package weight (Kg)		Carton Size(cm)	Qty/CTN	20GP (pcs)	40HQ (pcs)
	A	B	C	D		N.W/PC	G.W/PC	N.W/CTN	G.W/CTN				
11"Circular	Ø275	59	22	-	Ø275*59	0.76	0.92	9.12	12.2	58.5*44*30	12PCS	4032	9408
14"Circular	Ø350	59	26.5	-	Ø350*59	1.19	1.4	7.14	9.4	44*37.5*37.5	6PCS	2880	6804
11"Semicircle	Ø275	59	22	133	Ø275*59	0.77	0.93	9.24	12.3	58.5*44*30	12PCS	4032	9408
12"Oval	320	230	60	22	320*230*60	0.78	0.9	9.36	12	49.5*44*34.5	12PCS	4320	10164
10"Square	242	242	59	23.5	242*242*59	0.72	0.87	8.64	11.6	52.5*44*27	12PCS	5472	12312

## Technical Data Sheet (2)

Model No.	10"Square			12"Oval				
	AL91-10-12W	AL91-10-18W	AL91-10-25W	AL91-12-12W	AL91-12-18W	AL91-12-25W		
Dimension(mm)	242*242*59			320*230*60				
Cutout (mm)	-			-				
Watt(W)	12W	18W	25W	12W	18W	25W		
Rated Input Voltage(V)	AC100-240V    AC230V							
Input Voltage(V)	AC200-240V							
LED Module Input	-							
Light Source	SMD							
SDCM	<6 (@3000K 4000K 5000K)							
CCT(K)	1-CCT: 3000K/4000K/5000K/5700K    3-CCT: 3000K + 4000K + 5700K							
CCT Selection DIP Switch	YES							
Luminous Flux (lm) ±5%	Non-DIM	1-CCT	1000~1200	1480~1750	2140~2420	1000~1200	1480~1750	2140~2420
			950~1150	1450~1720	2120~2400	950~1150	1450~1720	2120~2400
	DIM	3-CCT	1000~1250	1480~1780	2140~2450	1000~1250	1480~1780	2140~2450
			950~1200	1480~1750	2120~2430	950~1200	1480~1750	2120~2430
CRI	≥80							
Beam Angle (°)	110°							
UGR	-							
LED Driver	Built-in							
Dimming Option	Triac/ DALI/ 0-10V							
Sensor	adjustable sensor							
Emergency Kits	YES							
Electrical Class	Class II							
Ingress Protection (IP Rating)	IP65							
Impact Resistance (IK Rating)	IK10							
Product Finishing(Base)	BLACK RAL 9005 / WHITE RAL9016							
Materials of Optics	PC							
Materials of Housing	PC							
Lifetime (hr)	50,000h							
Glow wire test (°C)	750°C (Cover) 850°C (Lamp Base)							
Operating Temp. (°C)	-20°C ~45°C							
Storage Temp. (°C)	-20°C ~65°C							
Installation	Surface mount							

## Technical Data Sheet (3)

Model No.	AL91-10-23W-AC3 (Square)	AL91-11-23W-AC3 (Circular)	AL91-12-23W-AC3 (Oval)	AL91-14-28W-AC3 (Circular)
Dimension(mm)	242*242*59	Ø275*59	320*230*60	Ø350*59
Cutout (mm)	-	-	-	-
Watt(W)	9W/14W/18W/23W			14W/18W/23W/28W
Rated Input Voltage(V)	AC230V			
Input Voltage(V)	AC200-240V			
LED Module Input	-			
Light Source	SMD			
SDCM	<6 (@3000K 4000K 5000K)			
CCT(K)	1-CCT: 3000K/4000K/5000K/5700K    3-CCT: 3000K + 4000K + 5700K			
CCT Selection DIP Switch	YES			
Luminous Flux (lm) ±5%	Non-DIM	1-CCT	-	-
	DIM		-	-
	Non-DIM	3-CCT	9W: 880~1050 14W:1200~1450 18W:1480~1800 23W:2000~2450	14W: 1200~1500 18W: 1650~1900 23W: 2000~2400 28W: 2500~2850
	DIM		-	-
CRI	≥80			
Beam Angle (°)	110°			
UGR	-			
LED Driver	Built-in			
Dimming Option	-			
Sensor	adjustable sensor			
Emergency Kits	YES			
Electrical Class	Class II			
Ingress Protection (IP Rating)	IP65			
Impact Resistance (IK Rating)	IK10			
Product Finishing(Base)	BLACK RAL 9005 / WHITE RAL9016			
Materials of Optics	PC			
Materials of Housing	PC			
Lifetime (hr)	50,000h			
Glow wire test (°C)	750°C (Cover) 850°C (Lamp Base)			
Operating Temp. (°C)	-20°C ~45°C			
Storage Temp. (°C)	-20°C ~65°C			
Installation	Surface mount			

## Driver Datasheet (Non-dimmable )

Total load wattage		12W	18W	25W	30W
Output	Output Voltage range	DC60-80V	DC60-80V	DC60-75V	DC60-75V
	Rated output current	150mA	230mA	325mA	380mA
	Line Regulation	±5%			
	Setup, Rise Time	<1S			
	Flickering Index	-			
Input	Input Voltage	AC85-265V			
	Rated Input Voltage(V)	AC100-240V			
	Frequency	50/60Hz			
	Input Current	≤0.16A	≤0.24A	≤0.33A	≤0.4A
	Rated Input Current	≤0.14A	≤0.2A	≤0.28A	≤0.34A
	Power Factor	0.9			
	THD	-		<20% @230V	
	Efficiency	≥88%			
	No load wattage	<1W			
	Protection	Short circuit protection	Pass		
Over voltage protection		Pass			
Over temperature protection		Pass			
Safety & EMC	Withstand voltage	-			
	Isolation Resistance	-			
	Surge	IEC61000-4-5(L-N:0.5KV, L/N-PG:1KV)		IEC61000-4-5(L-N:1KV, L/N-PG:2KV)	
	EMC Emission	EN55015, EN61000-3-2			
EMC Immunity	EN61000-4-2,3,4,5,6,8,11; EN61547				

## Driver Datasheet (Triac Dimmable)

Total load wattage		12W	18W	25W	30W
Output	Output Voltage range	DC65-75V	DC65-75V	DC65-75V	DC65-75V
	Rated output current	150mA	230mA	320mA	390mA
	Line Regulation	±5%			
	Setup, Rise Time	<1S			
	Flickering Index	-			
Input	Input Voltage	AC200-240V			
	Rated Input Voltage(V)	AC230V			
	Frequency	50Hz			
	Input Current	≤0.07A	≤0.1A	≤0.14A	≤0.17A
	Rated Input Current	≤0.06A	≤0.09A	≤0.13A	≤0.15A
	Power Factor	0.9			
	THD	-		<20% @230V	
	Efficiency	≥83%		≥86%	
	No load wattage	<1W			
	Protection	Short circuit protection	Pass		
Over voltage protection		Pass			
Over temperature protection		Pass			
Safety & EMC	Withstand voltage	-			
	Isolation Resistance	-			
	Surge	IEC61000-4-5(L-N:0.5KV, L/N-PG:1KV)		IEC61000-4-5(L-N:1KV, L/N-PG:2KV)	
	EMC Emission	EN55015, EN61000-3-2			
EMC Immunity	EN61000-4-2,3,4,5,6,8,11; EN61547				

## Driver Datasheet (DALI Dimmable)

Total load wattage		18W	25W	30W
Output	Output Voltage range	DC27-40V		
	Rated output current	400mA	600mA	700mA
	Line Regulation	±5%		
	Setup, Rise Time	<1S		
	Flickering Index	-		
Input	Input Voltage	AC200-240V		
	Rated Input Voltage(V)	AC230V		
	Frequency	50Hz		
	Input Current	≤0.1A	≤0.14A	≤0.17A
	Rated Input Current	0.09A	0.13A	0.16A
	Power Factor	0.9		
	THD	<20% @230V		
	Efficiency	≥81%		
	No load wattage	<1W		
Protection	Short circuit protection	Pass		
	Over voltage protection	Pass		
	Over temperature protection	Pass		
Safety &EMC	Withstand voltage	I/P-O/P:3.75KVac, <5mA 60S;I/P-FG:1.6KVac, <5mA 60S;O/P-FG:0.5KVac, <5mA 60S		
	Isolation Resistance	I/P-O/P: 500VDC, ≥100M Ω		
	Surge	IEC61000-4-5(L-N:1KV, L/N-PG:2KV)		
	EMC Emission	EN55015, EN61000-3-2		
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11; EN61547		

## Driver Datasheet (0-10V Dimmable)

Total load wattage		18W	25W	30W
Output	Output Voltage range	DC27-40V		
	Rated output current	400mA	600mA	700mA
	Line Regulation	±5%		
	Setup, Rise Time	<1S		
	Flickering Index	-		
Input	Input Voltage	AC200-240V		
	Rated Input Voltage(V)	AC230V		
	Frequency	50Hz		
	Input Current	≤0.1A	≤0.14A	≤0.17A
	Rated Input Current	0.09A	0.13A	0.16A
	Power Factor	0.9		
	THD	<20% @230V		
	Efficiency	≥81%		
	No load wattage	<1W		
Protection	Short circuit protection	Pass		
	Over voltage protection	Pass		
	Over temperature protection	Pass		
Safety &EMC	Withstand voltage	I/P-O/P:3.75KVac, <5mA 60S;I/P-FG:1.6KVac, <5mA 60S;O/P-FG:0.5KVac, <5mA 60S		
	Isolation Resistance	I/P-O/P: 500VDC, ≥100M Ω		
	Surge	IEC61000-4-5(L-N:1KV, L/N-PG:2KV)		
	EMC Emission	EN55015, EN61000-3-2		
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11; EN61547		

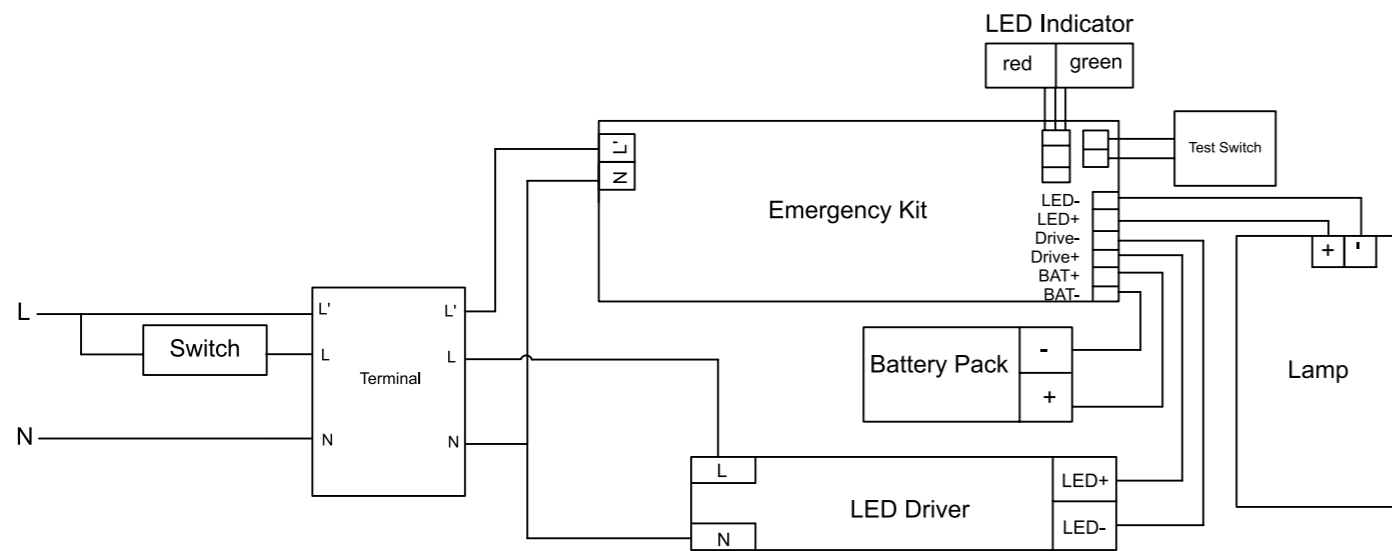
## Driver Datasheet (Adjustable power)

Total load wattage		9W/14W/18W/24W	14W/18W/24W/28W
Output	Output Voltage range	DC23-40V	
	Rated output current	230/350/450/580mA	350/450/600/700mA
	Line Regulation	±5%	
	Setup, Rise Time	<1S	
	Flickering Index	10%	
Input	Input Voltage	AC200-240V	
	Rated Input Voltage(V)	AC230V	
	Frequency	50/60Hz	
	Input Current	≤0.14A	≤0.17A
	Rated Input Current	0.13A	0.16A
	Power Factor	0.9	
	THD	<20% @230V	
	Efficiency	≥83%	
	No load wattage	<1W	
Protection	Short circuit protection	Pass	
	Over voltage protection	Pass	
	Over temperature protection	Pass	
Safety &EMC	Withstand voltage	I/P-O/P:3.75KVac, <5mA 60s	
	Isolation Resistance	I/P-O/P: 500VDC, ≥100M Ω	
	Surge	IEC61000-4-5(L-N:1KV)	
	EMC Emission	EN55015, EN61000-3-2	
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11; EN61547	

## Driver Datasheet (Emergency)

Power	3W
Rated Input Voltage(V)	AC230V
Frequency	50/60Hz
Input Voltage	AC200-240V
Total load wattage	3W±0.5W
Rated Input Current	≤0.03A
Battery	6.4V 1500mAh (LifepO4)
Lifetime	Over 2000 cycles
Battery duration	≥3hrs
Charge Period	≥24hrs
Emergency switching time	≅ 1S

## Wiring Diagram:



### Instructions for automatic test option

#### 1. Once the unit is powered up it will automatically initiate a self test and diagnostics as follows:

- Every 4seconds: Check for battery disconnection, charger board fault, lamp failure and transformer failure.
  - Every month: Perform a 3minute duration test.
  - Every yeat: Perform a 1 Hour or 3 Hours duration test.
- All test functions are factory preset and do not need field adjustment.

#### 2. Dual Colour Indicator LED Status Meanings

- Green Solid On Ready/Normal Operation
- Red Requires Service

•	One flash, 4 second pause	Battery not connected
••	Two flashes, 4 second pause	Battery short or low battery voltage
•••	Three flashes, 4 second pause	Charger board fault
••••	Four flashes, 4 second pause	Transformer fault
•••••	Five flashes, 4 second pause	LED lamp fault

**NOTE:** After repairing a service fault, press and hold the test button for 2 seconds to reset the flashing indicator light to green.

### 3. Manual Test

Press test button once	30 second duration test
Press test button twice within 2 seconds	3 minute duration test
Press test button 3 times within 2 seconds	30 minutes duration test
Press test button 4 times within 2 seconds	1 or 3 hours duration test

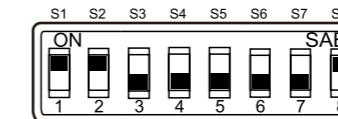
**Note:** DALI & 0-10V driver specification, please refer to individual driver datasheet.

## Sensor Setting



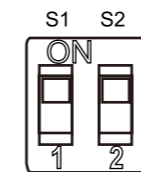
#### Default setting

SENS: 10M TIME: 10S LUX: 10lux



SK605B	
Operating voltage	220~240Vac, 50/60Hz
Transmission power	<0.2mW
Rated load	1200W/5A, Max, tungsten (cosφ=1) 600W/2.5A, Max, fluorescent (cosφ=0.5)
HF system	5.8GHz CW electric wave, ISM band
Detection angle	360°
Detection range	2m/5m/8m/10m (radii), (adjustable)
Time setting	10sec±3sec/1min±10sec/5min±30sec/ 10min±1min/15min±1min/20min±2min/ 25min±2min/30min±3min (adjustable)
Installation sit	indoors, ceiling mounting
Working temperature	-15°C ~ +70°C
Power consumption	approx. 0.5W

## Detection range setting (sensitivity)



SENS: S1, S2

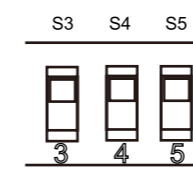
S1	S2	detection range
0	0	2m
0	1	5m
1	0	8m
1	1	10m

Detection range is the term used to describe the radii of the more or less circular detection zone produced on the ground after mounting the sensor light at a height of 2.5m, pull switch to the ON position as "1", pull switch to the OFF position as "0", switch location and detection range of the corresponding table is as follows:

**Note:** the above detection range is gained if the detected person is between 1.6m~1.7m tall with middle figure and moves at a speed of 1.0~1.5m/sec. if person's stature, figure and moving speed change, the detection distance will also change.

**ATTENTION:** When use this product, please adjust the sensitivity to an appropriate position you need, please do not adjust the sensitivity to maximum, in case the product works abnormally because of wrong motion detection, including blowing leaves & curtains small animals, or even power grid & electrical equipment. All the above factors can lead to abnormal work. When the product does not work normally, please try to lower the sensitivity appropriately, and then test it.

## Time setting



SENS: S3, S4, S5

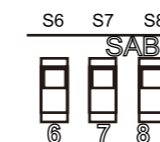
S3	S4	S5	TIME
0	0	0	10s
0	0	1	1min
0	1	0	5min
0	1	1	10min
1	0	0	15min
1	0	1	20min
1	1	0	25min
1	1	1	30min

The light can be set to stay ON for any period of time between approx. 10sec and a maximum of 30min. Any movement detected before this time elapse will re-start the timer. It is recommended to select the shortest time for adjusting the detection zone and for performing the walk test.

Pull switch to the ON position as "1", pull switch to the OFF position as "0", switch location and detection range of the corresponding table is as follows:

**NOTE:** after the light switches OFF, it takes approx. 4sec before it is able to start detecting movement again. The light will only switch on in response to movement once this period has elapsed.

## Light-control setting



LUX: S6, S7, S8

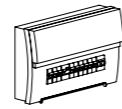
S6	S7	S8	LUX
0	0	0	Disable
0	0	1	10LUX
0	1	0	20LUX
0	1	1	50LUX
1	0	0	100LUX
1	0	1	200LUX
1	1	0	300LUX
1	1	1	500LUX

The chosen light response threshold can be infinitely from approx. 10-500lux, pull switch to the ON position as "1", pull switch to the OFF position as "0", switch location and light-control of the corresponding table is as follows:

# Installation Procedure

## WARNING ⚡

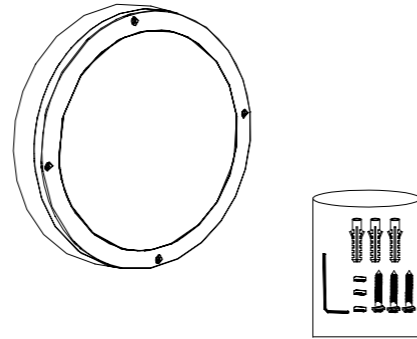
1. Switch off before installation / maintenance.
2. Switch on only after complete installation and examination of the circuit.
3. Professional electrician for installation and maintenance only.



Turn Off power supply before starting any installation. Read instructions & check you have all the tools & accessories to complete the installation correctly.

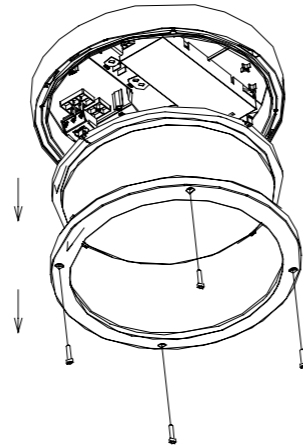
## How to install

### Step 1



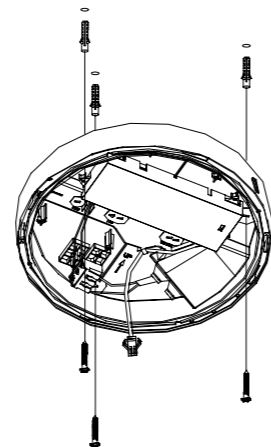
Take out the lamp and accessory pack

### Step 2



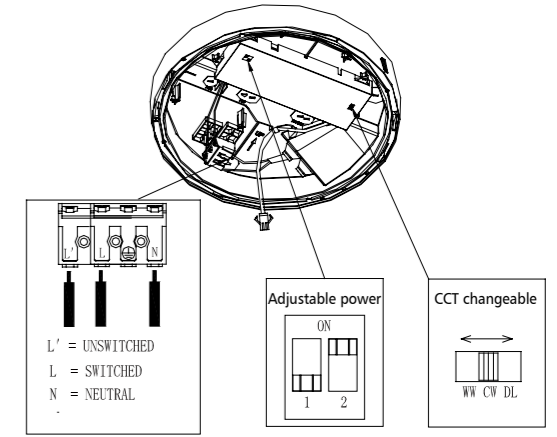
For round shape only: Unscrew the front frame, take the lamp cover apart by rotating it in anti-clockwise direction. For square and oval shape, Unscrew the front frame and take it out.

### Step 3



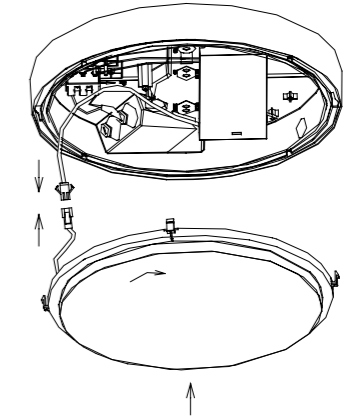
Knock-in the plastic anchor into ceiling, fix the base.

### Step 4



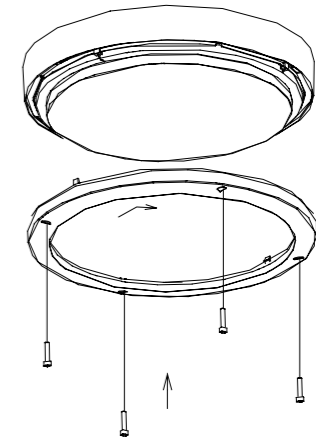
Feed the AC wire into terminal block respectively; If with 3CCT or changeable power function, choose preferred CCT or wattage by slide switch. For emergency function, connect battery wire; For dimming function, connect D+ and D- wire

### Step 5



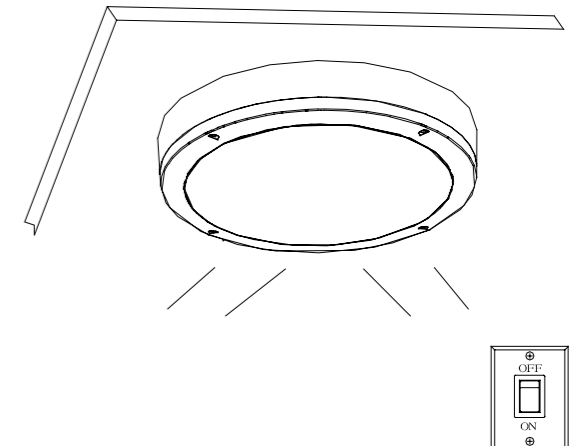
Plug the male and female connector. Align the hooks on the lamp cover with the notch of the base, rotate the lamp cover clockwise until they match well. No need to rotate square or oval shape frame, clip the lamp cover directly.

### Step 6



Clip the frame into the base, rotate the frame clockwise until they match well, fix frame with screw. (Square and oval shape lamp no rotary buckle, hold the cover and fix it with screw)

### Step 7



Switch on.

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Specifications

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