

ALTO-LED-EM

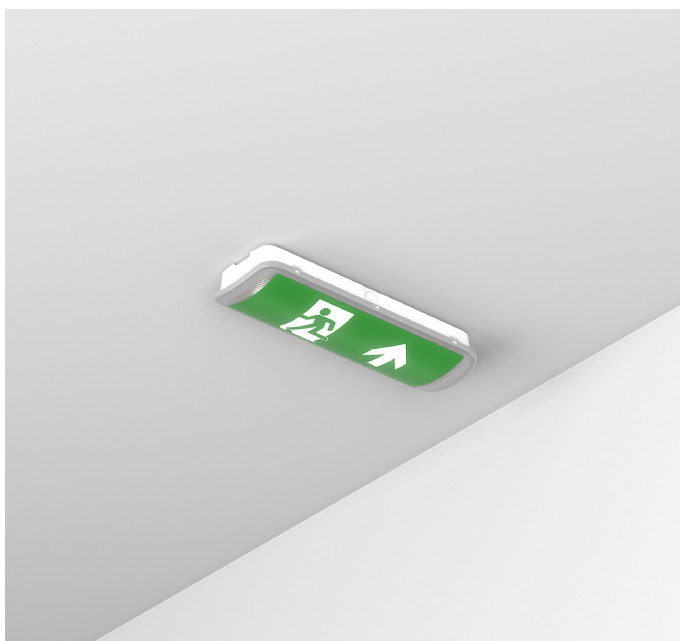
ITEM NO. 35943

Features

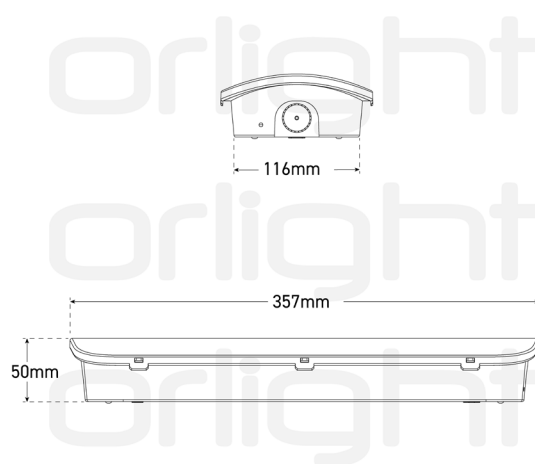
- LED emergency module suitable for direct installation in ceilings
- Complete set with integrated electronics, LED module, housing, and battery
- Wall mounted/ Exit sign
- Polycarbonate white RAL 9016
- IP65 protection class
- Very low stand-by power loss

Functions

- Standard function and self-test function
- Self testing products can switch the self testing, standard function through the dial switch
- Maintained and non-maintained mode



Dimension



Technical Specification

Rated supply voltage	220 - 240 V
AC voltage range	140-180VAC
Mains Frequency	50/60Hz
Power factor	≥ 0.4
Starting time	0.5s
Ambient temperature ta	5-40°C
IP rating	IP65
In-rush current	1.5A
In-rush current duration	3.5ms
Mains surge capability (between L - N)	1KV

Item Code	Typical output emergency power	Mains input current, min	Mains input current, max	Input power in mains operation, min	Input power in mains operation, max
ALTO-LED-EM (Maintained)	2W	25mA	50mA	3.5W	6W
ALTO-LED-EM (Non-maintained)		5mA	25mA	0.4W	2.5W

Technical Specification Continued

LED module forward voltage range Min-Max	9Vdc-12Vdc
LED module forward current range Min-Max	150mA-170mA
LED module forward power range Min-Max	1.5W-1.85W
Fixture Luminous Flux	300lm±10%
Self-test	No
Test Line	No
Test Switch	Yes

Note:

1. All specifications are typical at 25°C unless otherwise stated.
2. All specifications are typical on the 230VAC unless otherwise stated.

Please Note: The fixture comes complete with up, down, right, and left legends, making it adaptable for any exit path configuration.

Testing/Commissioning (self test)
Functionality of the test switch

1. A short press (>1s) on the button start a function test lasting 5 seconds (The battery's capacity should be more than 5%=charging 30mins)
2. Holding down the button(>10s) resets the timer(System-reset)

Functional test

The 5 second long, each 7 days' function test serves to check the functionality of the emergency unit, the batteries and LED module.

Notice.

- If a mains supply failure occurs while a function test is in progress, the test will be postponed and the system will enter emergency operation.

Duration test (EN)

- First test: After 24 hours of AC mains power input, the emergency lighting unit will enter into a 3-hour duration test.
- Half year duration test: Conduct 3-hour duration test every 180-182 days to check the battery capacity.

Notice.

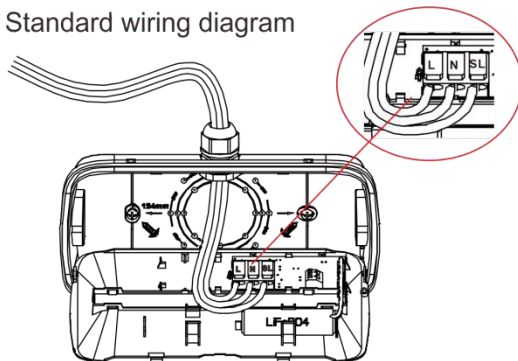
- A duration test shall only be started when the battery supply is fully charge if a mains supply failure occurs while a duration test is in progress, the test shall be postponed and the system shall enter emergency operation. Following restoration of the mains supply, a postponed duration test shall re-commence automatically when the battery supply is fully re-charge.
- The indicator will be slow flashing Green within 5 days if the duration test be carried out successfully.

Indicator LED System status is locally by a bi-colour indicator LED.

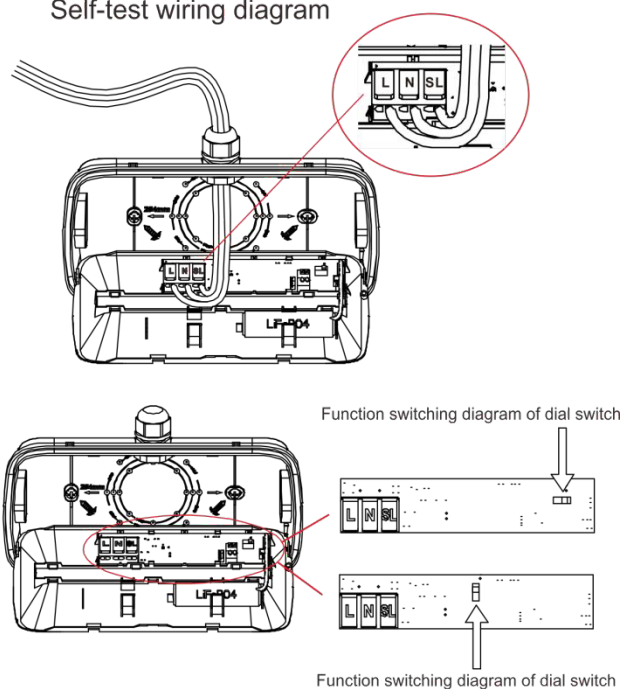
LED Indication	Status	Description	NOTICE Fault status: If an error is detected, the indicator LED switches to RED. If the error has been corrected please re-connecting the battery after the mains power off, the indicator LED immediately switches back to GREEN when mains power on. Battery failed duration test: After an exchange of the battery and holding down the button(>10S) reset the timer, the indicator LED switches to GREEN. Before power on, self-test and standard function can be switched through dial switch. When it is detected that the battery capacity is insufficient, power off and unplug the battery and power on again, which can be reset. The BS and ST function can be switched through the dial switch only after the power is completely out off. When switching from BS to ST or ST to BS, the program will refresh automatically.
Permanent Green	Standby ,System OK	Mains Operation, battery is charged	
Fast flashing Green (0.25s on 0.25s off)	Function test underway	Function test underway	
Slow flashing Green (1s on 1s off)	Duration test underway	Duration test underway	
Permanent Red	Lamp failure	Open Circuit or Short circuit or LED failure	
Fast flashing Red (0.25s on 0.25s off)	Battery capacity failure	Battery failed duration test	
Slow flashing Red (1s on 1s off)	Battery fault	Incorrect battery voltage or Short circuit or Open Circuit	
Green and Red off	Battery Operation	Emergency mode: Mains disconnected or Mains failure	

Wiring Diagram

Standard wiring diagram



Self-test wiring diagram



Note:

- Step 1: Lead the AC cables from the waterproof connector, connect the SL,L,N cables to the terminal respectively to complete the wiring, and turn on the maintain mode.

Wiring Diagram

Function switching:

Step 1: According to the diagram, switch the BS/ST function by the dial switch.

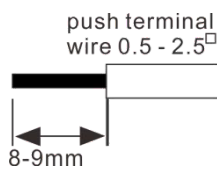
Step 2: Turn to the right and switch the function to self-test version (ST).

Step 3: Turn to the left and switch the function to standard version (BS).

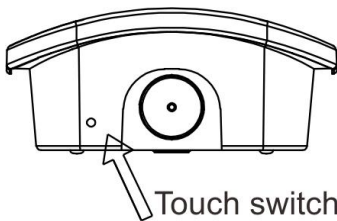
Note:

1. Please noted that only the self-test version product can switch functions by the dial switch, which is not available for the standard version.
2. Please note that functions switching by dial switch would only be available when all the wiring is disconnected, including the AC input, DC output and the battery.

1. Wire diameter range: 0.5-2.5 square millimeters;



Test switch

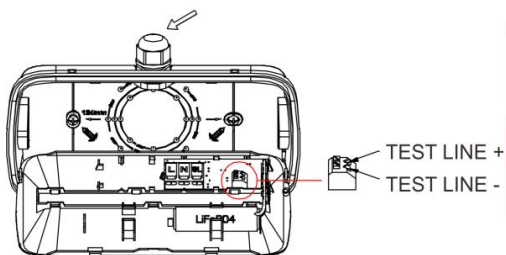


Touch switch:

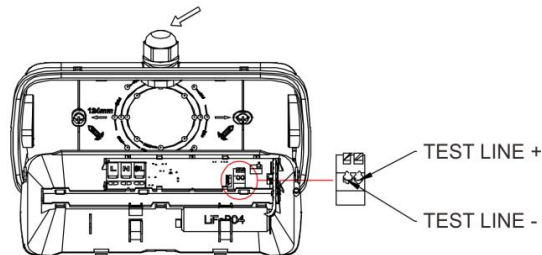
When 220VAC is powered on, touch this place, the standard product will enter the emergency, the self-test product will enter the function check for 5 seconds, and the self-test product will reset after touching 10 seconds

Test line

Standard TEST LINE cable connection diagram



Self-test TEST LINE cable connection diagram

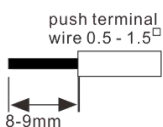


Note:

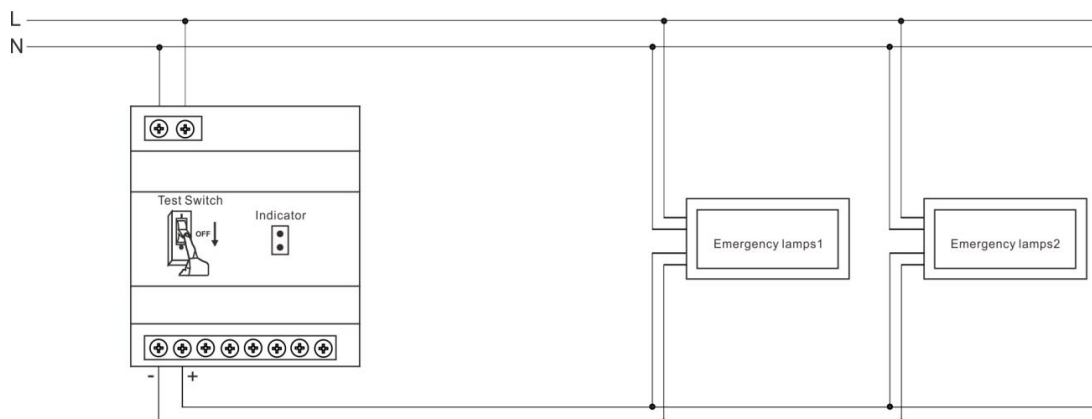
Step 1: Lead in TEST LINE from any inlet hole, as shown by the arrow.

Step 2 :Insert the TEST LINE cable into the positive and negative poles corresponding to the TEST LINE interface to complete the installation.

Requirements for wiring wires:1.Wire diameter range: 0.5-1.5 square millimeters;



Test line



It has the function of connecting remote control, which is used to remotely manage the emergency lamps of the remote control device in the rest mode.

Wiring diagram:

Functions of remote control device:

In the emergency system with autonomous lighting body, the suppression circuit is an auxiliary circuit that allows the lamps to be turned off in the emergency operation device.

During the test, the simulated emergency mode is activated to check the function of the lamp and correct any faults.

In large or complex factories / shopping malls, it is particularly difficult to solve the inhibition problem according to the regulations.

In fact, if you want to turn on or off the circuit to suppress the lamp, the solution can only be implemented near the lamp body.

This is to prevent accidental reasons (drilling, masonry, etc.) or catastrophic events (earthquake, fire, etc.) from interrupting or short circuiting the suppression cable, resulting in the lack of emergency intervention when needed.

Using the remote control can solve the following problems:

1. It will send out a pulse that is remembered by the device. After this moment, this line will no longer suppress any influence;
2. When the lighting power is restored, the lamp will automatically restore the emergency preparedness state and forget the prohibition command, thus avoiding the risk that the operator forgets to reset, which may be achieved in the prohibition of manual switch.

Battery Data

Battery selection

Emergency Power	Batteries	Battery fully charged time	Charge Current	Battery discharge voltage Min-Typ-Max	Battery discharge current Min-Typ-Max	Battery output power Min-Typ-Max	Emergency Duration
1W	3.2V 1500mAh LiFePO4	24h	70mA	2.6V-3.2V-3.65V	320mA-400mA	1W-1.3W	3h
2W	3.2V 3000mAh LiFePO4		200mA		600mA-750mA	2W-2.5W	1h
							3h

Note:

Automatically charge when the voltage of a single battery drops below 3.4V. When the voltage of a single battery exceeds 3.6 V, the charger turns off (0mA).

If the battery temperature is above 55 ± 2 °C or below 0 ± 2 °C, the battery will stop charging.

The emergency lighting LED driver will recharge the battery normally after running the test of 61347-2-7 CL22.3 (abnormal operating conditions).

When the voltage of a single battery is below min 2.6 V, the battery will not enter an emergency state.

The minimum charging environment temperature of the battery is 5°C , to ensure that the battery can be charged.

Battery Data

Battery selection

Capacity	1.5 / 3.0 Ah
International designation	IFpR 18/65
Battery voltage/cell	3.2V
Cell type	18650
Case temperature range to ensure	
4 years design life	+5°C to +55°C
5 years design life	+5°C to +45°C
6 years design life	+5°C to +35°C
Max. short term battery case temperature (shorter than 1 month over the battery lifetime)	70°C
Max. number discharge cycles	50 cycles total
Max. storage time	6 months

Notice: Storage condition

- Batteries should be stored within the specified temperature range in low humidity conditions.
Optimal storage conditions are
Temperature: -20°C to +40°C
Humidity: 45% - 85%
- Avoid atmosphere with corrosive gas
- It is recommended to disconnect the battery before storage or delivery
- Battery should be charged every three months in order to keep it's initial performance.

Standard

This product meets the following standards:

EN IEC60598-1	EN IEC61347-1	EN 61000-3-3	EN 55015
EN IEC60598-2-1	EN IEC61347-2-7	EN 61547	ROHS 2.0
EN IEC60598-2-22	EN 61000-3-2	EN 62034	

Service Life

Average life-time 50,000 hours under rated conditions with a failure rate of less than 10% for the emergency converter as rated power.

Average failure rate of 0.2% per 1000 operating hours.

Important:

It is recommended that the unit is installed by a competent person ensuring the installation complies with the necessary standards.

The company accept no responsibility for incorrect installation, incorrect operation or improper maintenance.

After installation of the fitting, the battery must be charged for 24 hours for duration test.