SOLO | NON-MAINTAINED EMERGENCY SPOT

Product description

One-LED Solo is a non-maintained, self-contained LED emergency luminaire comprising an OmniLED emergency LED driver, hinged LiFePO4 rechargeable battery and a flush mount SELV lamp head. Its compact, low profile hinged design means it can be installed through a 42mm lamp mounting hole, so making it ideal for use fixed ceiling applications.

The LED lamp incorporates a hidden 'push to test' switch and provides constant power output of 1.5W, so maintaining spacing throughout rated duration. The symmetrical distribution of light gives 9.3m spacing from a typical 2.5m height, when using an open area lamp head. For the most efficient spread of light along corridors, an optional corridor lens version is available to provide spacing of 19m from the same height.

Properties

- Optional lensed versions for corridor applications
- Available with SelfTest and DALI
- Incorporating LiFePO4 battery technology
- Builtin charge indicator LED on the lamp head
- Manually test with a 'push to test' lamp bezel*
- Prewired for simple installation
- SELV enclosure incorporating insulated terminals
- Deep discharge protection (DDP) to protect cells from over discharge
- Constant current/ constant voltage battery charger
- Driver complies with: EN613471, EN6134727, EN55015, EN6100032, EN61547
- Luminaire conforms to EN60598222
- Suitable for installations to EN50172

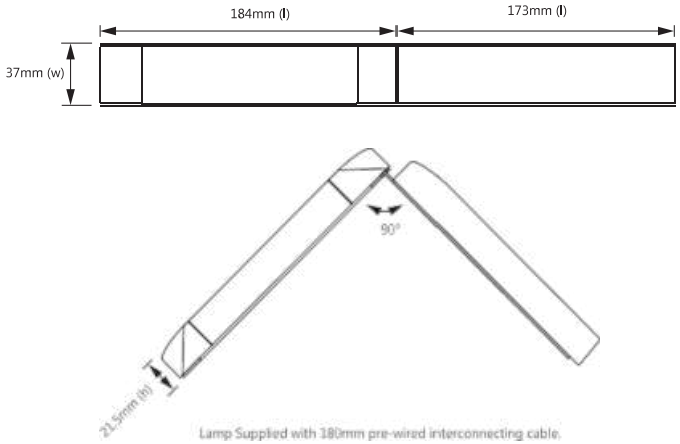
Input Supply Voltage	230V +/- 10% - 50/60t Hz
Minimum Emergency Output	240lm Open Area/ 198lm Corridor
Maximum Spacing (2.5m ceiling)	9.3m Open Area/ 19m Corridor
Battery	4.4Ah LiFePO4
Ambient Temperature Range	5-55°C
Earth Leakage Current	<0.5mA
IP Rating	IP20
Recommended Cutout Size	42mm
Weight	320g
Standard Pack Quantities	10

Model Number	Description
OLS/NM3/LFP	Articulated Driver, LiFePO4 Battery & Open Area Lamp Head
OLS/NM3/LFP/CL	Articulated Driver, LiFePO4 Battery & Corridor Lens Lamp Head

For DALI 2/ Self-test versions add '/D2ST' to the product codes above. For Casambi wireless add '/CW'. For Silvair wireless add '/SW



Also available corridor lens



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TECHNICAL INFORMATION

Model Number	Input Characteristics - Charging Mode			
	Circuit Watts	Input Current	Inrush Current	Power Factor
All	3.5W	30mA	4.5A	0.44

Model Number	Battery & Emergency Output Characteristics							
	Rated Duration	Battery Type	Battery Volts Range (Charge Mode)	Rated Capacity	DDP Voltage	Charge Current	Charging Method	Uout Max (open Circuit)
All	3 hours	LiFePO4	2 - 8V	4.4Ah	2.5V (min)	0 - 230mA	Constant Current	12V

Lamp Head Type (All Models)	Mounting Height (Meters)	Distance Table for Even Escape Routes - Based Upon 2m Width of Escape Route				
		Axial/Wall 	Axial/Axial 	Axial/ Transver 	Transverse/ Transverse 	Transverse/ Wall 
Open Area	2.00	3.29 m	8.45 m	8.45m	8.62 m	3.48 m
Corridor Lens		2.14 m	5.76 m	10.97 m	16.72 m	6.97 m
Open Area	2.50	3.70 m	9.27 m	9.22 m	9.31 m	3.71 m
Corridor Lens		2.10 m	6.10 m	12.00 m	19.05 m	7.26 m
Open Area	3.00	3.73 m	10.03 m	9.75 m	10.07 m	3.85 m
Corridor Lens		2.02 m	6.04 m	12.69 m	20.17 m	7.07 m
Open Area	3.50	3.77 m	10.56 m	10.35 m	10.46 m	3.93 m
Corridor Lens		1.78 m	6.01 m	12.47 m	20.73 m	6.31 m

This Spacing Table is based upon the following parameters:

> Maintenance factor: 0.9 > Ballast lumen factor: 1.00 > Minimum illuminance on centre line: 1 LUX > Minimum illuminance on half of escape route
width: 0.5 LUX > Diversity on the centre line maximum 40:1

Please be aware that these are a minimum guide in accordance with BS/EN 1838. Local risk assessment by a competent person should be carried to ensure the emergency lighting system meets the requirements of the building and its occupants.

SOLO | NON-MAINTAINED EMERGENCY SPOT

INSTALLATION Standard luminaires.

Disclaimers

This is a dedicated, non- maintained emergency luminaire, so by design the main LED light will only operate upon mains supply failure; it cannot be operated as a standard light source.

This product and its associated accessories have been designed and manufactured to comply with the requirements of EN60598222 and required additional standards. Operation beyond the parameters specified in this document and the associated standards may result in reduced performance and ultimate premature failure, with the warranty made void. The specifier should be aware of the environment to which this luminaire and components are used and adhere to its specifications. Please contact our Technical deparent if you are in any doubt.

Precautions

This luminaire must be installed by a qualified and competent electrician. It should not be mounted in an external location or in areas where temperatures below 10°C may be frequent in cold months and likewise, do not use the luminaire in a hot environment where the temperature is maintained at 35°C or above. In either case, the battery's design life of 4 years will be compromised and provision of three hour emergency duration may not be possible when needed.

Installation notes

See product label for supply connection details.

Prepare supply cables with a strip length of 6mm (10mm maximum). Min/max Conductor sizes: 0.2 - 1.5 mm2.

One-LED SOLO must be installed in accordance with the current wiring and building regulations.

It is recommended that a 42mm diameter hole is provided to insert the recessed ceiling lamp head and luminaire. The mains connections should be made to the 3pole grey terminals marked 'LIVE', 'EARTH' and 'NEUTRAL'. Please note the cable size range for the terminal block is 0.2mm2 - 1.5mm2. This product requires a permanent supply (via test key switch where required) as per the wiring illustration on page 1. Restrain and protect the terminations by affixing the cord restraint and terminal cover provided.

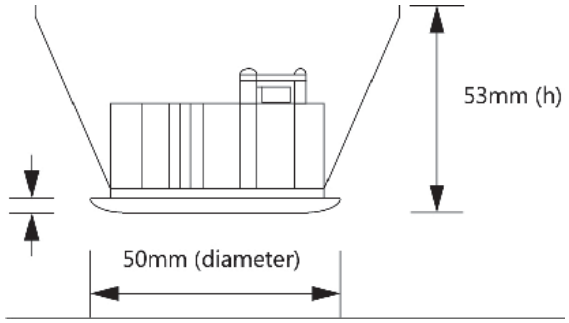
Commissioning

Once the luminaires are installed, the mains supply should be instated and remain uninterrupted for a minimum of 24 hours. The supply should then be removed and all luminaires checked for a minimum of 3hours duration. The label on the battery box must be initialled and dated by the commissioning engineer. See page 4 for Selftest DALI versions.

Testing

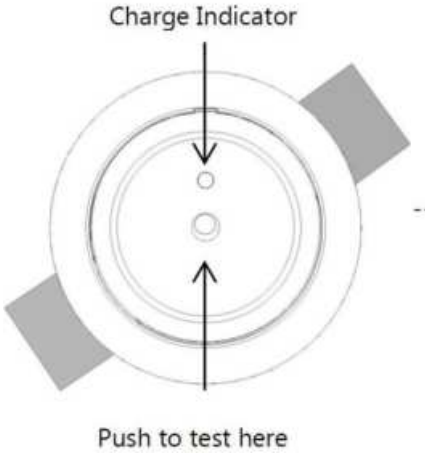
Regular testing must be carried out and recorded in accordance with BS EN 50172. To facilitate monthly checks, a discrete green charge indicator and manual push-to-test feature are incorporated into One-LED SOLO. Depressing the facia at the point shown in the illustration will operate the lamp in the emergency mode for as long as it is pressed. This feature allows regular testing to be carried out with minimal inconvenience to the building occupants. Please take care to avoid looking directly at the LED when under test. Finger contact with the power LED should also be avoided. For commissioning and the annual fullrated duration test, it is recommended that the supply is isolated via conventional methods such as isolation of the circuit at the MCB or via key test.

Ceiling recessed Lamp Head

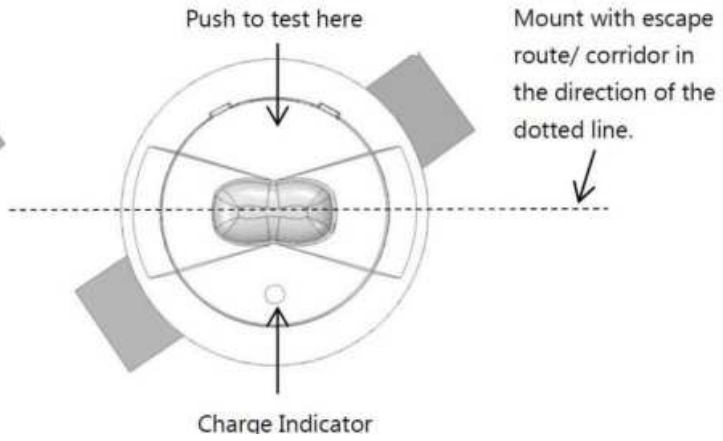


50mm Diameter

Open Area Lamp Head Option



Corridor Lens Lamp Head "/CL" Option



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INSTALLATION & OPERATION of '/DST' DALI Selftest versions

Commissioning:

Once the luminaire has been installed and availability of the unswitched supply is deemed stable, **connect the battery, then apply mains power to begin the commissioning process.**
After applying power, the One-LED Solo will stay in commissioning mode for a minimum of 48 hours + the Duration Test period. The first 24 hours is to fully charge the battery before its Duration Test and second 24 hours to recharge the battery for normal use.

If it is anticipated that the unswitched supply may be interrupted before normal use, we advise that the battery is left disconnected and commissioning is delayed until the supply is stable. If the luminaire has been stored for a number of months, it may be necessary to repeat the initial charge/discharge process several times to recondition the battery and achieve full rated emergency duration. After successful commissioning, the battery should be marked with the date of commission.

Automatic Testing

Once commissioned, the One-LED Solo will automatically determine if it is being used in Standalone SelfTest mode or connected to a DALI network.

If Standalone SelfTest is detected, it will establish randomised delay times to ensure the next scheduled tests do not coincide with the same test of adjacent luminaires. (See table below for details of 'Test Delay Time' ranges). Subsequent routine testing will then take place according to the 'Test Interval' times detailed in the table below.

If the One-LED Solo module detects it is installed on a DALI network, it will configure itself according to the default DALI specification. (See table below). **It is important to note that in DALI mode, randomisation will not be set and it will await test delay times to be configured by the DALI master.**

In the event of loss of communication with the DALI master, automatic testing will revert back to the SelfTest 'Test Intervals', but 'Test Delay Times' will remain as configured by the DALI master.

A One-LED Solo can be returned to standalone self test at any time by disconnecting it from the DALI network and forcing a Function Test from the test switch or by cycling the unswitched mains supply. (See page 5 for details).

To fully reset all test times, disconnect the mains, battery power and DALI connections. Once power is restored, the commissioning cycle and randomisation process will be reinitiated.

Short discharge periods each month for the Function Test will not adversely affect batteries and should be considered as a maintenance exercise for the battery. Regular full discharge cycles will however adversely affect the design life of the battery, so excessive testing should be avoided wherever possible.

A full summary of automatic test timings can be seen in the table below.

The status of the One-LED Solo can be determined at any time from the indicator LED. Details of the indicator LED status conditions and integral test switch functionality can be found on page 5.

Automatic Testing Information

Test Type	Mode	Duration	Test Delay time	Test Interval / Occurrence	Notes
Commissioning Test	SelfTest	1 or 3 Hours*	24 Hours	Once*	The luminaire will carry out a Duration Test 24 hours after initial power up. *This test cycle will be repeated if unsuccessful
	DALI	1 or 3 Hours*	24 Hours	Once*	The luminaire will carry out a Duration Test 24 hours after initial power up. *This test cycle will be repeated if unsuccessful
Function Test	SelfTest	1 Minute	115 Days	Every 28 Days	
	DALI	1 Minute	0	Every 7 Days	Caution! Factory default of zero test delay time is set for DALI Mode
Duration Test	SelfTest	1 or 3 Hours*	151 Weeks	Every 51 Weeks	
	DALI	1 or 3 Hours*	0	Every 52 Weeks	Caution! Factory default of zero test delay time is set for DALI Mode

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INSTALLATION & OPERATION of '/DST' DALI Selftest versions. Continued.

Luminaire Status Information								
LED Colour	**LED Status**	**On Time (Seconds)**		**Off Time (Seconds)**		**Sounder Activated**	**Purpose**	**Action required**
Green	Steady On	Permanent		0			Normal status with fully charged battery (Commissioned unit)	None - In standby mode and operating as normal
	Slow Flash	1.5		0.5			First 24 hour charge and Duration Test. (NonCommissioned unit)	None - Await commissioning process to complete
	Fast Flash	0.5		0.5			Function Test or Duration Test in progress. (Commissioned unit)	None - Await current test to complete
Varied		**On**	**Off**	**On**	**Off**		**Purpose**	**Action required**
Green	Long 'On' then flash	10	0.5	0.5	0.5		Battery being charged (Commissioned or DALI bus present unit)	None - Await battery to charge (Normally 24 Hours)
Red & Green (alternate)	Fast Flash	0.5	0.5	0.5	0.5		Physical select enabled by DALI system only	Confirm Physical select with optional Test Switch

Luminaire Status Information (Fault Conditions)						
LED Colour	**LED Status**	**On Time (Seconds)**	**Off Time (Seconds)**	**Sounder Activated**		
Red	Slow Flash	0.5	1.5	Yes	Battery fault	Check battery & connections, repair/ replace as necessary
	Fast Flash	0.5	0.5	Yes	Lamp or internal circuit fault	Check Lamp & connections, repair/ replace as necessary

Test Switch Information	
Function	**Test Switch Action**
Disable Sounder	Press and hold for longer than 5 seconds (Sounder bleeps once for confirmation)
Enable Sounder	Press and hold for longer than 5 seconds (Sounder bleeps twice for confirmation)
Start a Function Test	Press and release 2 times within 5 seconds
Confirm physical selection	Press once during physical selection mode initiated by DALI system
Stop Identification	Press once during identification mode to exit.
Set Test Time of Day	Press and hold for longer than 10 seconds

INSTALLATION & OPERATION of '/DST' DALI Selftest versions. Continued.

Module Status Information (Fault Conditions)

***A function test can also be initiated at anytime whilst mains power is present by cycling the test switch off/on, 2 times within 5 seconds.**

LED Colour	LED Status	On Time (Seconds)	Off Time (Seconds)	Sounder	Cause	Suggested action required
	Slow Flash	0.5	1.5	Yes	1) Possible initial commissioning duration test failed: 2) Possible battery connection fault: 3) Possible open circuit or short circuit battery: 4) Possible battery capacity fault:	1) If it is a new installation, you can determine if the One-LED Solo passed the initial commissioning duration test by cycling the mains power off then on, whilst observing the indicator LED. a) If the indicator LED flashes red then green at power on, the One-LED Solo module did not pass its initial commissioning duration test and was awaiting further instruction. Cycling the power as per above has now reset the process and a new test will be attempted in 24hrs time. (As long as the mains supply is not interrupted). This process may need to be repeated several times to recondition new batteries to restore full capacity, especially if they have been in storage for some time. b) If after cycling the mains power off then on, the red indicator remains, the unit has passed its commissioning test, but may have failed a routine function or duration test because of the causes below. 2) Whilst the mains supply remains on, check the battery connections and repair/ replace faulty parts if necessary. Initiate a function test to try and clear the fault indication. If the fault indication does not clear, proceed to 3). 3) Disconnect the battery and measure if its voltage is between 2.5 - 3.65V DC. If it is outside this range, the battery is faulty so it should be replaced. If a new one is installed, cycle the mains power off then on before reconnecting to initiate the commissioning process. If the voltage is within the range, proceed to next step. 4) To test the battery capacity, ensure it has had 24 hours uninterrupted charge, then turn off the mains power and observe if the rated emergency duration is achieved. If it exceeds the rated duration, you can reinstate power and initiate a function test to clear the fault indication. If the rated duration is not achieved, and it was a commissioned battery before, replace the battery and turn the mains power on to initiate a new commissioning test.