SOLO SURFACE | Non- Maintained Emergency Spot

Product description

One-led Solo Surface is a non-maintained, self-contained LED emergency luminaire comprising an Omni-led emergency LED driver, rechargeable battery and a SELV LED lamp.

Its compact, surface mount enclosure is available in either square or circular design and with either stand alone or DALI 2 Self Test capability.

The LED lamp provides constant power output of 1.5W, so maintaining spacing throughout rated duration. The symmetrical distribution of light gives 8m spacing from a typical 2.5m ceiling 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.

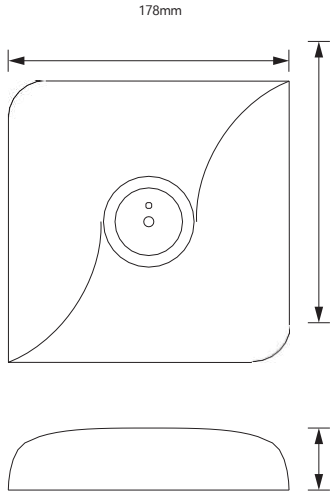
Properties

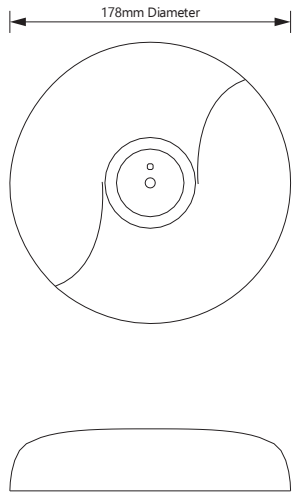
- Universal first-fix gear tray with options for either through ceiling, or side conduit cable entry
- Option of either square or round stylish covers
- Optional lensed versions for corridor applications
- Also available with Self-test and DALI 2 capability
- Allows manual emergency testing/ Self-test interaction with discrete 'push to test' lamp bezel for /D2ST versions
- Built-in charge indicator LED on lamp head
- Incorporates 4.4Ah high-temperature LiFePO4 Battery.
- Driver complies with: EN613471, EN6134727, EN55015, EN6100032, EN61547
- Luminaire designed to conform to EN60598222
- Suitable for installations to EN50172
- Deep discharge protection (DDP) to protect cells from over discharge
- Pre-wired for simple installation

Technical Data	
Input Supply Voltage	230V +/- 10%
Supply Frequency	50/60 Hz
Minimum Emergency Output	240lm Open Area/ 198lm Corridor
Maximum Spacing (2.5m ceiling)	8m Open Area/ 19m Corridor
Battery Type	3.2V 4.4Ah LiFePO4
Ambient Temperature Range	1035°C
Battery Charge Time	24 Hours
Earth Leakage Current	<0.5mA
IP Rating	IP20
Weight	400g
Standard Pack Quantities	10

Model Number	Description
OLS/C/NM3/LFP	Circular with 'Open area' light distribution
OLS/C/NM3/LFP/CL	Circular with 'Corridor' light distribution
OLS/S/NM3/LFP	Square with 'Open area' light distribution
OLS/S/NM3/LFP/CL	Square with 'Corridor' light distribution







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

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TECHNICAL INFORMATION

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

Model	Battery & Emergency Output Characteristics							
	Rated Duration	Battery Type	Battery Volts (Range)	Rated Capacity	DDP Voltage	Charge Current	Charging Method	Uout Max (open Circuit)
All	3 hours	LiFePO4	2 - 8V	3.0Ah	2.5V (min)	0 - 230mA	Constant Current	12V

Type	Mounting Height (Meters)	Axial/Wall	Axial/Axial	Axial/ Transverse	Transverse/ Transverse	Transverse/ Wall
OLS/...	2.00	3.29 m	8.45 m	8.45 m	8.62 m	3.48 m
OLS/...CL		2.14 m	5.76 m	10.97 m	16.72 m	6.97 m
OLS/...	2.50	3.70 m	9.27 m	9.22 m	9.31 m	3.71 m
OLS/...CL		2.10 m	6.10 m	12.00 m	19.05 m	7.26 m
OLS/...	3.00	3.73 m	10.03 m	9.75 m	10.07 m	3.85 m
OLS/...CL		2.02 m	6.04 m	12.69 m	20.17 m	7.07 m
OLS/...	3.50	3.77 m	10.56 m	10.35 m	10.46 m	3.93 m
OLS/...CL		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 buillding and Its occupants.

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INSTALLATION (See page 5 for additional '/D2ST' DALI 2 Self-test

Installation

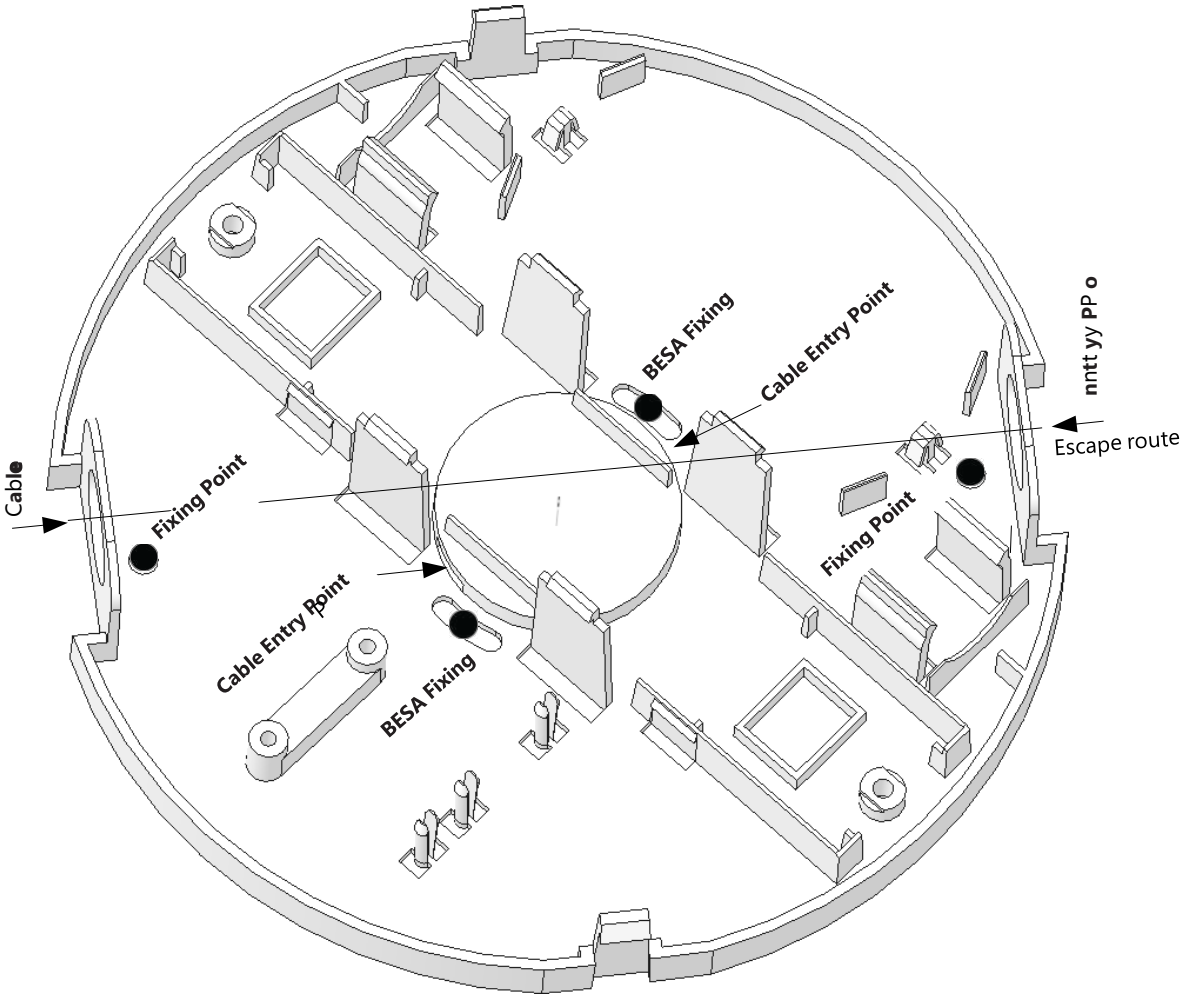
This luminaire must be installed by a qualified and competent electrician.
Ensure the mains supply is isolated before attempting installation!
Please refer to the diagram opposite for fixing details.

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.

Determine the fixing location, type of cable entry to the luminaire and the direction of an escape route for lensed versions.
Cable entry points are provided at opposite sides of the gear tray, which are suitable for use with most 20mm conduit fittings, cable glands, grommets etc. If these are to be used, it is strongly recommended the gear tray is fixed in position beforehand.
If the supply cable is to be fed from within the ceiling, it can be guided down through the cable entry slots in the centre of the gear tray.

Fixing

Once the location and lens orientation are determined, the circular gear tray can be fixed in position by either the two standard fixing holes at the sides (141.5mm centres) or by the BESA fixing slots (50.8mm centres) in the middle of the gear tray. Fixing point locations and the resulting direction of the escape route are shown in the diagram opposite.
Please note, to access BESA fixing locations the lamp assembly will need to be carefully removed by squeezing the four supports inwards in pairs whilst pulling the metal disk away from them. The lamp assembly can then be clicked back into place once the gear tray is fixed in place.
Additional fixing holes and cable entry points may be added if required, but care to avoid internal components must be observed. at all times.
Conduit cut-out guides are included on the inside of the front cover.



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INSTALLATION (continued)

Wiring

When fixed in position, prepare the supply cables with a strip length of 6mm (10mm maximum). Min/max Conductor sizes: 0.5 - 2.5 mm2. Incoming mains connections should be made to pushwire terminals marked 'L', 'E' and 'N'. (and DALI 2 bus to terminals marked 'DA' for /D2ST versions). Please note the Earth terminal is only provided for the purpose of terminating the incoming cable(s) and is not required for function or safety. This product requires a permanent supply (via test key switch where required). Once the supply connections are made, ensure the cord restraint is fixed in position as required.

Function test and commissioning

Note: This luminaire will only operate the white LED upon mains supply failure from the internal battery supply; it cannot be operated as a standard light source.

After installation, the battery lead should be connected to the emergency driver PCB and the mains supply turned on. The green indicator LED should now be visible on the lamp head's front bezel, showing the battery is connected and being charged.

When the mains supply is turned off, the white LED will illuminate in emergency mode. Reinstate the mains power, or disconnect the battery to stop emergency operation.
Once the luminaire is ready for commissioning the battery positive should be connected and the front cover fitted into position.
The mains supply can then be instated and must remain uninterrupted for a minimum of 24 hours for the luminaire to fully charge its internal battery. After 24 hours, the mains supply should then be turned off and the luminaire checked for a minimum of 3hours duration. If successful the label on the battery must be initialled and dated by the commissioning engineer.

Emergency Lighting 'standard' or 'manual' Test

The following minimum inspections and tests should be carried out:
Monthly
Switch off the mains power supply to the luminaire. Inspect the emergency

Switch off the mains power supply to the luminaire. Leave the unit to run for the rated period (e.g. three hours). The light should remain operable from the battery for the whole period. Please be aware that further inspection / testing may be required, e.g. by risk assessment / local legislation.

Maintenance

There are no user serviceable parts within the product. The battery pack must be replaced when the 3 hour duration is no longer achieved. The battery is not considered user-replaceable and must be referred to a competent engineer. Please contact Luxemesh for technical support or suitable replacement parts.
Front cover removal: If the front cover needs to be removed after fitting place, carefully press a narrow blade screwdriver through the small slots located at opposite sides of cover's side walls whilst pulling that side of the cover away from the base.

Batteries and Disposal

The battery has a designed service life of 4 years and must be replaced in a timely manner to ensure the integrity of the emergency lighting system is maintained. In any case, the battery should be replaced with when it no longer provides the rated duration (3 hours).

Luxemesh are committed to fulfil its obligations as a producer of batteries used in emergency lighting applications. End-of-life batteries may either be returned to us at the customers cost and arrangements will be made to ensure their correct disposal. Alternatively it may be more convenient for the customer to deliver end-of-life batteries to site(s) of authorized treatment facilities at their cost and it will be ensured that they are accepted back and subsequently treated to the standard required by the regulations.

Disclaimers

This product and its associated accessories have been designed and manufactured to comply with the requirements of EN60598-222 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 department if you are in any doubt.

The unit provides reinforced insulation between the mains supply and battery charging circuit and employs self-resetting protection against short-circuit of battery terminals. Normal charging will resume automatically once a fault is removed.

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INSTALLATION & OPERATION of '/D2ST' DALI 2 Self-test

Function test and commissioning

After installation, the battery lead should be connected to the emergency driver PCB and then the mains supply turned on. The indicator LED should now be visible on the lamp head's front bezel, showing the battery is connected and being charged.

Also, when the mains is powered on (after a battery disconnect), the Solo Surface will automatically determine if it is being used in Stand alone Self-Test mode or connected to a DALI 2 network.
If Stand alone Self-test is detected, the One-led Solo Surface will enter into a commissioning mode, where it will remain for a period of up to 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 to avoid damage 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

If Stand alone Self-test 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 Solo Surface module detects it is installed on a DALI 2 network, it will configure itself according to the default DALI 2 specification. (See table below). It is important to note that in DALI 2 mode, randomisation will not be set and it will await test delay times to be configured by the DALI 2 master.

In the event of loss of communication with the DALI 2 master, automatic testing will revert back to the Self-test 'Test Intervals', but 'Test Delay Times' will remain as configured by the DALI 2 master.

A Solo Surface can be returned to stand alone self test at any time by disconnecting it from the DALI 2 network and forcing a Function Test from the test switch or by cycling the unswitched mains supply. (See information tables below for details).

To fully reset all test times, disconnect the mains, battery power and DALI 2 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 Luxemesh 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 tables below.

The status of the Solo Surface 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 6.

Automatic Testing Information

Test Type	Mode	Duration	Test Delay time	Test Interval / Occurrence	Notes
Commissioning Test	Self-test	1 or 3 Hours*	24 Hours	Once*	The module will carry out a Duration Test 24 hours after initial power up. *This test cycle will be repeated if unsuccessfull
	DALI 2	1 or 3 Hours*	N/A	N/A	Caution! An initial Duration Test must be initiated by the DALI 2 Master to commission a new installation.
Function Test	Self-test	20 Seconds	115 Days	Every 28 Days	
	DALI 2	20 Seconds	0	Every 7 Days	Caution! Factory default of zero test delay time is set for DALI 2 Mode
Duration Test	Self-test	1 or 3 Hours*	151 Weeks	Every 51 Weeks	The module checks if the lamp is in use before initiating a test to avoid disruption. Maximum test delay is 36 hours
	DALI 2	1 or 3 Hours*	0	Every 52 Weeks	Caution! Factory default of zero test delay time is set for DALI 2 Mode

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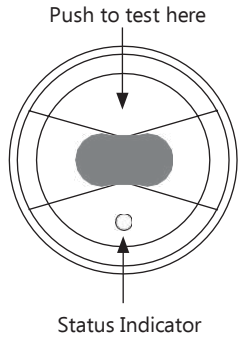
INSTALLATION & OPERATION of '/ DALI Self test versions. Continued.

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 unit)	None - Await battery to charge (Normally 24 Hours)
	Long 'Off' then flash	0.5	10	0.5	0.5		Second battery charge after Commissioning Duration Test	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 2 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 2 system
Set preferred automatic test time of day	Press and hold for longer than 10 seconds (Carries out function test for confirmation)

Corridor Lens Option/ CL



Open Area Option

