# **LED Light Source and Controller**

SL-LED Series for rotating or fixed lenses



The SL-LED Series are revolutionary solid-state light sources designed to replace traditional lamps in classical lighthouse optics.

Their long life and high luminous efficiency delivers huge energy savings and reduces the frequency of maintenance for lighthouse operators. Most importantly, by retaining the original lens, these sites can maintain their heritage value. The SL-LED was originally developed by the GLA R&RNAV Directorate and manufactured under license to Trinity House.



#### **Continuous or Flashing Operation**

Capable of either of these functions, the SL-LED series is suitable for use in revolving or fixed optics. Their crisp, white light improves conspicuity in light polluted areas while in flashing mode, it instantly provides an 'eye-catching' sharp flash at full brilliance.

#### Low Power and Low Voltage DC

The SL-LED Series is well suited to battery and renewable energy power sources, such as solar photovoltaic. This helps to improve efficiency, reduces running costs and lessen it's carbon footprint. The universal controller provided can accommodate a wide range of power supply choices, operating modes and power levels.

#### Universal LED Controller

The LED Light Source is used in conjunction with Sealite's Universal LED Controller and PC Configuration Tool. The controller can deliver power up to 200 watts and provides a range of features. These include advanced monitoring capabilities to monitor conditions such as LED status, power supply and turntable rotation speed. The Controller also allows advanced programming features to be configured, including intensity settings, flash character and a selection of alarm conditions.

#### Sealite Consulting Service

A consultative service is provided to survey the lighthouse either on site or recommendations can be prepared in consultation based on photographs and details drawings of the lens. Sealite has been involved in light house restorations globally since 2013 with the expertise to tailor the solution to each individual site.





## D Features

- High intensity LED array
- Anodised heat sinks to maintain temperature of LED's
- PC Configuration Tool for programming the light
- GPS Antenna
- Built in GSM
- Built in AIS Type 1 and Type 3
- 110/240V supply options

## High Performance

- Advanced Monitoring
- Advanced Programming
- 10 year expected lifetime on LED's
- Independent driver outputs for redundancy
- Sealite consultancy service to prepare tailored site recommendations

## S Cost Effective

- Low maintenance costs
- Energy efficient light solution

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- GPS Antenna



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#### Technical Specifications.\*

	SL-LED LIGHT SOURCE		
Light Source Characteristics	SL-LED 324S	SL-LED 324	
Maximum Power Rating (W)	Variable up to 200W	Variable up to 200W	
Number of LEDs in Array	36	36	
LED Height (cm)	1.2	1.6	
Average LED Width	1.89	2.57	
LED Area (cm²)	2.27	4.11	
Average Horizontal Intensity (cd)	2642	2499	
Nominal Average Luminance (cd/cm <sup>2</sup> )	1165	608	
Please note: The quoted figures above are for peak outputs when operating at 100% intensity. The maximum recommended			

power duty cycle including flash character is 50% for low to moderate temperature environments (up to 40°C / 104°F). The system includes thermal monitoring of the light source and controller.

	SL-LED CONTROLLER	
Controller Characteristics	SL-LED-CTRL	
Available Flash Characteristics	Up to 310 including 256 IALA recommended	
Intensity Adjustments	User adjustable	
Electrical Characteristics		
Circuit Protection	Polarity protected	
Nominal Voltage	VDC Model: 18–32VDC VAC Model: 110–240VAC	
Temperature Range	-40 to 60°C	
External 3rd Party Monitoring	Via RS232/422/485	
AIS Connection	Via RS232/422/485 (if built-in module not selected)	
Alarm Contacts	1 x Volt free 250VAC @ 5A or 30VDC @ 5A	
External Inputs	2 x general purpose digital inputs 3–24VDC	
External Outputs	2 x general purpose digital outputs will switch up to 24VDC @ 1A	
Physical Characteristics		
Body Material	Baked enamel coated aluminium	
Mounting	4 x 6mm screws (preferred mounting landscape)	
Height (mm/inches)	111 / 4½	
Width (mm/inches)	400 / 15¾	
Depth (mm/inches)	230 / 9	
Weight (kg/lbs)	5 / 11	
Product Life Expectancy	Up to 12 years	
Environmental Standards		
Low Temperature	MIL-STD-810G Method 502.5	
High Temperature	MIL-STD-810G Method 501.5	
Humidity	0 – 100%, condensing	
Certifications		
CE & Electrical	EN61000-6-2:2005, IEC61000-4-2:2008,	
Overlite Assume as	IEC61000-4-3:2010, IEC61000-6-1:2016	
	1509001:2015	
waterproot	IP0/	
Intellectual Property	CEALITE® is a registered trademark of Costing Divided	
Morronty *	SEALITE" IS a registered trademark of Sealite Pty Ltd	
Warranty "	3 years	
Options Available	AlS Type 1 or Type 3 GSM Monitoring & Control System Solar Power Float charged battery standby systems GPS antenna for synchronisation of flashing lights	

#### How to Order SL-LED Light Source

Select from the products below:

- SL-LED Light Source (12 sided): SL-LED-324-W SL-LED-324S-W
- SL-LED Light Source Pedestal: SL-LED- PEDESTAL-03 SL-LED- PEDESTAL-04 SL-LED- PEDESTAL-05
- SL-LED Controller Cable: SL-LED-CTRL-CBL-XX
- SL-LED Universal Controller: SL-LED-CTRL-2-24 SL-LED-CTRL-2-24-GSM SL-LED-CTRL-2-UM

#### SL-LED-CTRL-2-UM-GSM SL-LED Sensors: SL-LED-CTRL-PE SL-LED-CTRL-ROTATION SL-LED-GPS-ANT-01 SL-LED-GSM-ANT-01

High Powered LEDs - 36 x 5mm High Powered LEDs - 36 x 3.5mm

100mm vertical adjustment 50mm vertical adjustment 30mm vertical adjustment

3m to 10m length options available Specify XX = 03 to 10m length

Direct 24VDC supply Direct 24VDC supply and internal GSM Direct universal mains supply Direct universal mains supply and internal GSM

Photo-electric cell for day/night control Inductive sensor for rotating optics External GPS Antenna - 3 metres External GSM Antenna - 3 metres

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#### Advanced Monitoring Using LED Controller

An alarm relay, RS232 and RS422/485 are utilised to monitor:

- LED status
- Power supply
- Temperature
- Light levels
- Internal fault conditions
- Turntable rotation speed

#### Advanced Programming Using PC Configuration Tool

The SL-LED light source can be configured to suit a range of requirements including partial, phased-in or complete lighthouse modernisation. The settings include:

- Multiple intensity settings
- 310 flash settings including custom character
- Adjustable on/off lux levels
- Low battery threshold
- Alarm conditions
- Speed tolerance variation

#### **Redundant Failsafe**

The LED controller includes a series of independent driver outputs, providing redundancy as each LED is controlled by a separate output driver.

#### **Optional GSM Monitoring & Control**

A built-in GSM module for monitoring and control is also available enabling users to access diagnostic data via cell-phone. The system can also be configured to send out alarm SMS text messages to designated cellular telephone numbers. Users can also have alarms and reports sent to designated email addresses via the Star2M asset management, remote monitoring and control platform.

#### **Mounting Pedestal**

The LED Light Source is easily mounted using Sealite's LED Pedestal. The inclusion of plug and play connectors make installation and servicing a simple task suitable for most mounting arrangements.

#### **Optional GPS Antenna**

For flashing fixed lens applications the station can now be flashed in synchronisation with a buoy channel or breakwater by fitting an antenna if these channels are already fitted with GPS.

#### Lifetime

The expected lifetime of the LEDs is approximately ten years, at which point their output is likely to be 70% of their original brightness. When compared with a lighthouse lamp with a life of 800 hours or a halogen lamp with a life of 2000 hours, these represent exceptional savings in maintenance and replacement costs



SL-LED-324 Model

Anodised heat sinks to maintain temperature of LEDs on steady burning duties

Overall diameter of LED array ideally matches original light source and retains flash length





Shown with the Universal LED Controller, the light source is easily programmable using Sealite's PC Configuration Tool













All Sealite products are manufactured to exacting standards under strict quality control procedures. Sealite's commitment to research and development, investing in modern equipment and advanced manufacturing procedures has made us an industry leader. By choosing Sealite you can rest assured you have chosen the very best.

Experienced & Trained Personnel	Precision Construction	
Worldwide Distribution Team	Total Quality Management	
Agile Manufacturing	✓ ISO9001:2015	
Product Innovation	Rapid Turnaround	

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