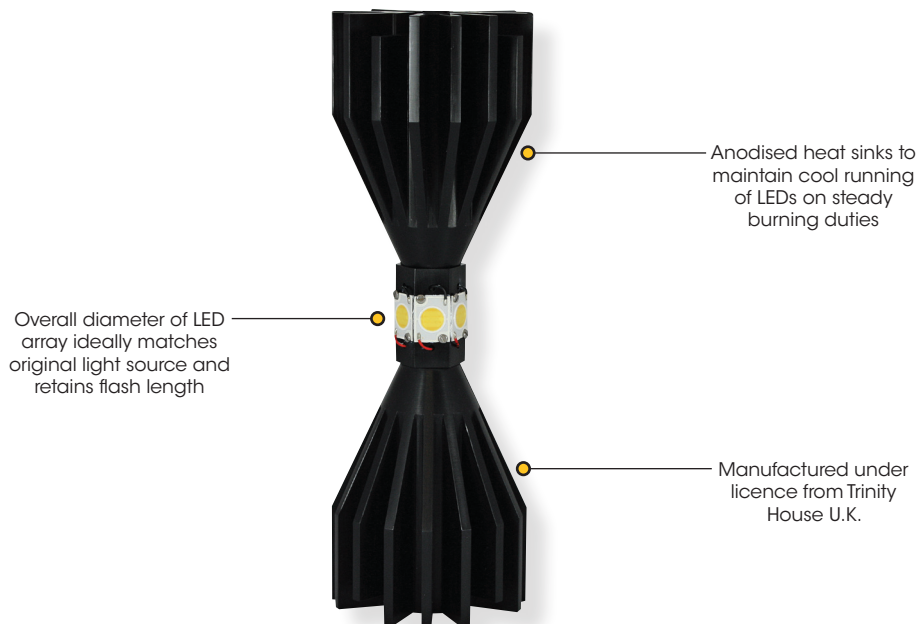


High Output LED Light Source

SL-LED Series

V1_2014



The Sealite Advantage

- Typically replaces a 500 watt filament light source with a 78 watt LED light source making solarisation possible
- Simplest solution involves only changing lamp and utilising customers existing pedestal & controls
- Combined with SL-RL600 Pedestal, the SL-LED series of LED light sources creates a new lease of life for the optic as the most optically efficient method of converting traditional prismatic lenses
- Retains the historical heritage of the lighthouse making it possible to pacify local authorities who may have placed restrictions on the equipment use
- Sealite offer a consultancy service supported by Trinity House to match LED light source with customer's lens to assess likely range
- It is possible to switch off those LEDs which shine over land to save additional power. This is true for both flashing and rotating applications which creates an industry first by effectively offering "1/2 or 3/4" of a light bulb thus saving even more energy
- Because LEDs are used it is no longer necessary to provide a moving lamp changer
- All LEDs can be driven from one flasher for economy or two synchronised flashers driving alternate LEDs to create standby

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 makes huge savings in energy and maintenance possible whilst retaining the heritage value of classical optical apparatus.

Capable of continuous or flashing operation, the SL-LED series is suitable for use in revolving or fixed optics. Their crisp, white light improves conspicuity in light polluted areas and when in flashing mode, full brilliance is attained instantly providing an 'eye-catching' sharp flash.

Low power and low voltage DC operation ensure that the SL-LED Series is well suited to battery and renewable energy power sources, such as solar photovoltaic. This further reduces running costs and the carbon footprint. The control equipment provided can accommodate a wide range of power supply choices, operating modes and power levels.

How they work

The SL-LED52 is a four-sided light source using four surface-emitting LEDs of 13W each. The maximum total power available is 52W but power can be set at any level down to 8W without affecting the crisp, white colour. The SL-LED78 is the six-sided version with power levels variable between 12W and 78W.

Each surface-emitting LED consists of a flat array of thirty-six LEDs connected together; therefore no single LED failure will lead to the light going out completely. Four or six of these devices are mounted on a square or hexagonal post so that the light shines in all directions. The central post acts as a heatsink to keep the LEDs cool. Other central cores are available to suit each lens. Sealite can advise the best suited match with details of the lens.

Classical Optics

There are two main types of classical optic, fixed and revolving. Fixed optics are usually beehive or drum shaped and emit a disc of light around the horizon, known as a 'fan' beam. Fan beams are often used to provide coloured sectors. Revolving optics consist of one or several lenses, which resemble 'bullseyes', rotating around a vertical axis. Each bullseye lens emits a directional shaft of light to the horizon, known as a 'pencil' beam.

Matching a light source to a classical lens can be a complex task. Knowledge of how complex lens systems operate is essential and if a light source is the wrong size or shape, or has the wrong emission pattern, the resultant beam intensity can be severely reduced.

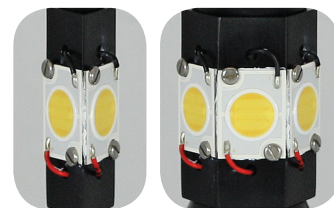
The central core of the SL-LED varies in the number of faces and the distance across each flat together with the number and type of LEDs used to create a match source to the lens.

Luminous Efficiency

The surface emitting LEDs used are around eight times more efficient than a tungsten filament lamp. A figure of around 100 lumens per Watt is quoted at any power setting. For each single LED, up to the maximum power of 13W, an output flux of 1400 lumens is achievable. By contrast, a standard filament lamp is typically 12 lumens per Watt.

Lifetime

The expected lifetime of the LEDs is approximately ten years. This will depend on the power setting and whether or not the light is flashed or continuous. Nevertheless, when compared with a lighthouse lamp with a life of 800 hours or a 'long-life' halogen lamp with a life of 2000 hours, these can be thought of as 'fit and forget'. After ten years of operation, their output is likely to be 70% of their original brightness.



Four-sided SL-LED52 and Six-sided SL-LED78 LED arrangement