

CASE STUDY

SL-LED Series LED Light Source

Northern Territory, Australia



Sealite[®]
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Sealite, international designer
& manufacturer of complete
Aids to Navigation systems

We believe technology improves navigation™

Project Overview

Application:

Replace traditional light source in 4th Order drum lens

Product:

LED Light Source

Location:

Northern Territory, Australia

Site:

Emery Point Lighthouse, Darwin GP3 (1.0) every 15 sec WR

Owners:

Darwin Port Corporation

Date:

November 2013



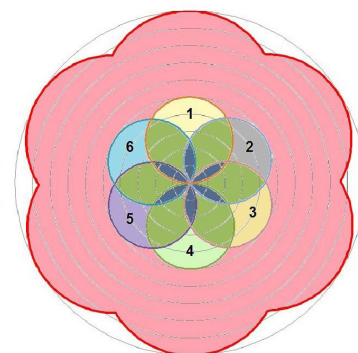
Sealite's revolutionary LED Light source offers a high efficiency solution to modernise optics.

Background

Emery Point is an active Lighthouse, established in 1915 – Built during the "Golden Age of Australian Lighthouses". The structure is a robust square metal skeletal tower and was the only navigational aid to remain functional in the path of the Cyclone Tracy when it hit Darwin in 1974. The traditional lantern house was equipped with a 4th order prismatic drum lens fitted with a red sector, which was originally powered by acetylene gas and then converted to a 120 volt 1000 Watt electric lamp changer.

Solution

The tungsten-halogen light source comprised of two 1,000W lamps mounted on a mechanical lamp changer that required regular maintenance. The flash character electronics had become unreliable, and a larger battery bank was needed as a back up to the mains power. Existing customer, Darwin Port Corporation chose Sealite's LED Light Source as it is the most optically efficient method of lighting a 4th Order lens. The light source would retain the traditional historical value, provide a reliable high luminous efficiency, single back up battery and require less maintenance and significantly lower installation costs. This ensured a major cost saving to the Port.



Typical light distribution.

Benefits

- 1000W lamp replaced with 40W LED
- Long life LEDs are used, therefore a moving lamp changer is no longer required
- High luminous efficiency generates huge savings in energy and maintenance
- Suitable for use in both revolving and fixed optics
- Capable of continuous or flashing operation
- Retains the historical heritage of the lighthouse
- 4% of original load makes solar power viable

Darwin Port Corporation recently welcomed the installation of Sealite LED technology to the historic Emery Point Lighthouse. Praising its impressive functionality, Marine Pilot, Captain Alistair Logan, said that,

“ the Sealite LED light has an impressive clarity and range. It was able to be installed without disruption to the historic structure, maintaining the integrity and antique character of the original glass lens.



LED benefits

The LED Light Source uses 6 surface-emitting LEDs with an overall power level of 40W. To provide additional optical standby coverage two controllers were provided driving LED numbers 1, 3 and 5 in the diagram from controller 1 and LED's 2, 4 and 6 from controller 2. Due to the layout of the LED's should one LED fail the light from the adjacent LED's will offer standby light at reduced range. Surface emitting LEDs used in the LED Light Source are around eight times more efficient than the previously installed tungsten filament lamp. Four or six of these devices are mounted on a heat sink to provide an omni-directional light output and to keep the LEDs cool.

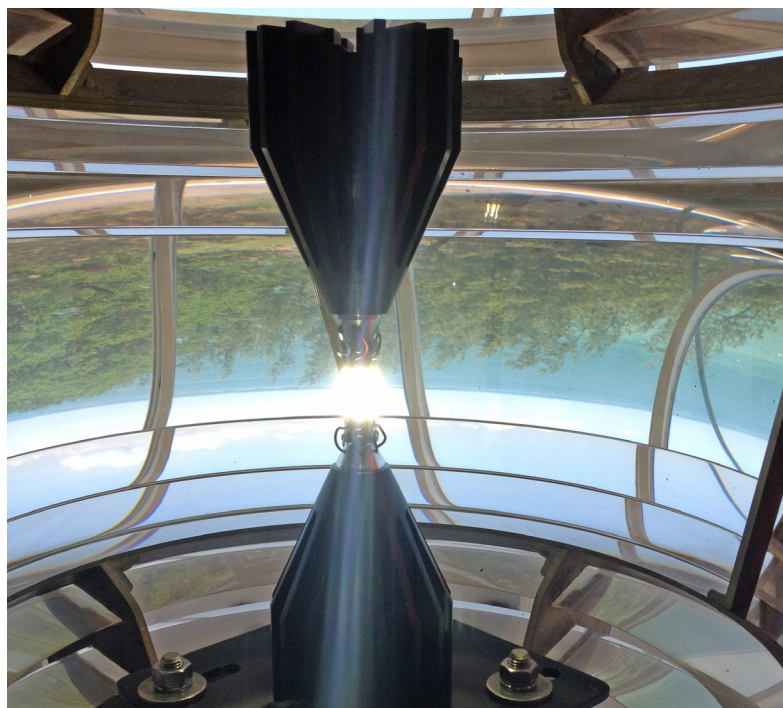
Expected Lifetime

Filament lamps have an expected life of about 2000 hours at best, but on average 500 hours. Since the expected lifetime of the LED is around 10 years, there is no longer a need to provide a lamp changer with moving parts, reducing the need of service visits.

Design

The design originated from a manufacturing agreement with Trinity House to produce a LED light source, developed by the General Lighthouse Authorities Research and Radionavigation Directorate. The light source is designed for modernisation of large lighthouse prismatic lenses, increasing their efficiency and reducing maintenance.

The innovative Sealite LED Light Source delivers long life, high luminous efficiency and reduced energy and maintenance costs - It offers a simple and economical solution for conversion of most stationary or rotating lighthouse optics.



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 in solar marine lighting.

By choosing Sealite you can rest assured you have chosen the very best.

Experienced & Trained Personnel

•
Worldwide Distribution Team

•
Agile Manufacturing

•
Product Innovation

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Precision Construction

•
Total Quality Management

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Rapid Turnaround



Sealite®

www.sealite.com

Sealite Pty Ltd

11 Industrial Drive,
Somerville Vic 3912
AUSTRALIA

t: +61(0)3 5977 6128

f: +61(0)3 5977 6124

Sealite USA, LLC

61 Business Park Drive
Tilton New Hampshire 03276
USA

t: +1 (603) 737 1311

f: +1 (603) 737 1320

Sealite United Kingdom Ltd

11 Pinbush Road
Lowestoft Suffolk NR33 7NL
UNITED KINGDOM

t: +44 (0) 1502 588026

f: +44 (0) 1502 588047

w: www.sealite.com

e: info@sealite.com

