

CASE STUDY

LED LIGHT SOURCE

Lighthouse Equipment

Baily Lighthouse, Howth Head, Dublin Port



Sealite[®]
www.sealite.com



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

We believe technology improves navigation™

Project Overview

Application:
Lighthouse Lamp

Location:
Ireland

Site:
Baily Lighthouse,
Howth Head, Dublin Port

Owners:
Commissioners of Irish Lights

Product:
Lighthouse LED Optics

Date:
December 2012



Baily Lighthouse is located on Howth Head at the entrance to Dublin Port.

It houses a 375mm 4 panel catadioptric annular rotating lens exhibiting a character of Fl 15 sec, and had a published range of 26 miles.

Design Concept

Baily was previously fitted with a 100V 1500W lamp. These lamps were designed with large tungsten filament cage diameters to provide an electric light source which matched the original Acetylene mantel and PV burner diameters hence preserving the optical efficiency of the lens. Until now it's been impossible to modernise the light source to take advantage of the next generation of low power LED emitters. This is because LED arrays of sufficient intensity within a small enough diameter have not been available.

With recent advances in surface mounted LED technology it has now become possible to create a composite light source of the required diameter to work efficiently with the traditional lens optics.

Solution

The UK General Lighthouse Authorities R&RNAV have recently developed a new light source for this purpose, which is now manufactured by Sealite under license. This is suited for both flashing applications in drum lenses and fixed character applications in a rotating optic such as the application for the Commissioners of Irish Lights at Baily Lighthouse.

The new LED light source now achieves an effective range of 21 miles and offers the best optical gain for solarising traditional prismatic lens stations. With power consumption of just 78 watts @ 24 volt DC the solution outperforms all other LED solutions. One additional advantage of the new light source is that individual LEDs can be switched off in unwanted directions (eg. over land) saving additional power.