

PELANGI

Application Note 32183

Achillbeg Is. – Co Mayo

Achillbeg lighthouse is located on Achillbeg Island, which is off of the Corraun Peninsula in Co. Mayo, and was built in 1965. The main optic has a 400mm focal length fixed Catadioptric cut and polished lens, and 100V 1500 Watt lamp. Range achieved is 18 miles and 65,000 candelas. The lighthouse also has a secondary 100V 750 watt Red sector light. The assembly was flashed 1 sec every 5 sec consuming an average power consumption of 450 Watts. The main optic on its own consumed an average of 300 Watts - making solar power impossible.



Achillbeg Lighthouse Ireland, Co. Mayo showing main and secondary optic.

Originally large tungsten filament cage diameters were created to equal Acetylene mantel sizes like the L24 and L25 lamps sizes. Until now it's been impossible to reduce LED arrays of sufficient intensity within a small enough diameter to match the size of the original light source and hence offer optically efficient conversions of these lenses.

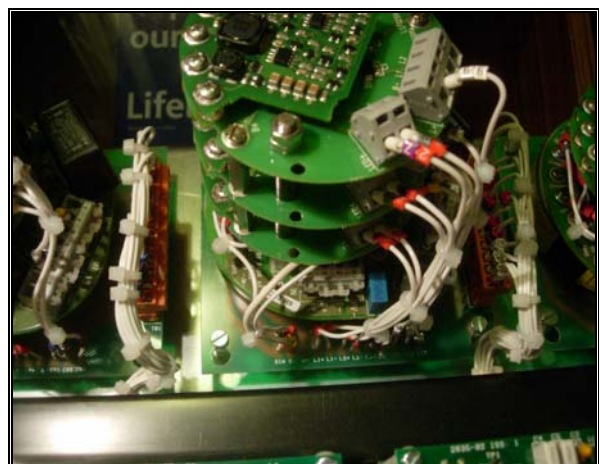
As LED surface mounted technology has developed its now been possible to create a composite light source of a similar diameter to the Tungsten lamps for use in these traditional optics.

Ideally suited to steady burning duty for rotating optics or flashing duties the heat sink developed by the GLA has made the combined light source the first choice on solarising traditional stations.



LED Light Source flashing.

By individually driving each LED and synchronising them in a 6 LED array it is now possible to produce a uniform 360 degree array consuming only 54 watts making solar power a practical option.



3 tier LED driver and Flasher assembly each driven by a single Sabik LED Flasher mounted on a quick release PCD for easy maintenance.

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At Achillbeg Lighthouse it has been possible to reduce main optic power consumption from 300 Watts to just **6 Watts** average while maintaining a range of 18 miles. Rotating lenses achieve bigger ranges.



3 Stack – triple tier driver and Flasher assembly with 6 individual current monitors housed in a custom made 800 x 750 x 200 mm stainless steel cubicle to suit murette access and internal space: Supply 24 V DC.

For Commissioners of Irish Lights, the system was designed to include stage monitoring of individual LED and shut down procedures in the event of partial failure with local site indication and interfaces for monitoring via AIS but other configurations are possible to suit given sites.

As an alternative built-in GSM or Satellite monitoring can be provided using the well proven Lightguard basic and Webscada as employed by the Northern Lighthouse Board in Scotland. This removes distance and location as an issue.

Mounting of the new light source within the lens at the correct focal height is easily achieved to suit the lens assembly. Since no secondary lamp is required this does not need to be lampchanger mounted (although this variation is available) making solar power possible.



With front panel LED Local status indication as shown here as configured for Achillbeg in stainless steel cubicle making the conversion compact and self contained.



Factory acceptance at our factory in Dec2011 of finished solution by Irish Lights inspector Colin Day. The system will be installed in early 2012.



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