



High Intensity LED Landing Light

Technology Solution: Oxley is setting the standard for high intensity LED landing lights with a new generation of products developed in conjunction with leading aircraft manufacturers in both military and commercial sectors, which has resulted in the world's brightest LED landing light.

The evolved solution is now set to go into service with a leading manufacturer of executive jets as part of a complete external light set. It is also designed to offer a retrofit option for the replacement of now outdated halogen technology in many commercial and military aircraft.

Oxley was challenged to deliver the required 400,000cd civil aviation specified performance through advanced optical innovation, and provide dramatically reduced power consumption and infinitely longer service life with proven shock and vibration performance.

“The vision was a failure rate above 4,000 hours compared to the halogen technology failure rate of 25 hours. But the evolved solution now achieves 10,000 hours – 400 times better than existing technology.”

Total power consumption is circa 115W compared to the halogen technology power consumption of 400W to 600W – representing a reduction of more than 70%.

The robust construction has aluminium housing with matt black hard anodised finish to MIL-A-8625 and a PMMA lens. The new unit meets the stringent Aerospace Environmental and EMC requirements. Electro Magnetic Compatibility is an important factor in the use of LED technology and the new Oxley high intensity landing light is fully EMC tested and compliant. It is also qualified in accordance with MIL-STD-810F and RTCA DO-160F.

The development process through design, prototyping, testing and manufacture was completed in-house at Oxley's Priory Park site in Cumbria. Oxley's mechanical, optical and electronics engineers combined to develop the new light over a period of 10 months.

A significant challenge was gaining the amount of light required to meet aerospace specifications whilst using current LED technology. This was achieved through the design and development of a custom-built lens, with significant investment in specialist tooling.

Delivering consistent performance over the wide temperature range and operating voltage range experienced by aircraft was another pre-requisite by which to measure success. The internal microprocessor and RTCA DO-178B level C certified software ensures light performance is monitored and reliability maintained even in the harshest conditions. The new light also had to meet optical and mechanical requirements within a defined space envelope to enable the replacement of halogen technology in retrofit applications.

The High Intensity LED Landing Light was a finalist in the Elektra 2012 European Electronics Industry Awards and winner of the Innovation category in the 2013 CN Group Business Awards.

