The ECN Roundtable - MilAero and HiRel Applications

This month's Roundtable question is **“How do you feel solid-state lighting will impact Industrial, Military, and/or hi-rel applications in the coming year?"**

The answer comes from Rob Rix, Vice President of Business Development at Tyco Electronics.

In the past year, the lighting industry generated sales of $75 billion globally with less than 5% being solid-state lighting - but this is about to change. Regulations coupled with higher energy cost and lower SSL costs will dictate the pace of the change to SSL. These changes will most certainly affect military and hi-rel applications as well as consumer and industrial environments.

The Pentagon has made clear that energy efficiency is pivotal to military readiness. The Department of Defense has instituted a policy that that all facilities must reduce energy consumption on a 3% year-to-year reduction target regardless of mission. Toward that end, energy consumption for facility and security lighting on military bases could be reduced 5 to 10 fold using solid-state lighting.

Lighting suppliers have closely monitored how poorly the transition from incandescent lighting to the obviously more efficient compact fluorescent lamp (CFL) technology has been handled. The lessons learned from this process are being applied to solid state lighting. SSL solutions have to live up to their potential for reliability, and hi-rel applications often require very robust solutions. LEDs by nature are more robust as they don’t have fragile glass enclosures, filaments, etc. Additionally, the form factor allows them to be used in new ways, and the thinness of an LED light source allows for many new packaging opportunities. 50K+ hour life expectancies allow solutions for life of the product without concern for bulb

replacement.

The engineering of solid state lighting solutions involves exper¬tise in myriad technologies that include LED selection and the design of LED light modules, driver and control electronics, optics, wiring and interconnections, thermal design and circuit protection. Knowledge in one area can be quite unique and the successful application of that know-how must be brought together at the systems level to achieve an optimum lighting solution that takes into account the interaction between the technologies. The number of different areas of expertise required and the interaction between them has been among the factors that have hindered the development of solid state lighting.

Tyco Electronics has embraced this challenge with the NEVALO product, a systems approach designed to assist manufacturers in rapidly adapting SSL technology to the changing demands of the marketplace. The NEVALO SSL system addresses the challenges facing SSL designers and manufacturers with a holistic approach that delivers application flexibility, speed (time to market), and confidence to SSL design. The NE¬VALO SSL product is a high-engineered system of plug-and-play elements that are easily assembled into fully-functioning luminaires and the engineering tools necessary to show the operation under actual operating conditions.

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