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LED Migration in General Illumination – “Slow but Sure”

Some niche markets for LED lighting are heavily penetrated, others just starting, but the direction is clear and inevitable ...

Kings Park, NY (September 18, 2009) - LED Specialists, Inc., a leading provider of LED lighting solutions, sees compelling advances in LED technology for the general illumination market, based on development projects it has been involved with to-date. New government regulations (e.g. “ban the bulb”) notwithstanding, LED technology is today replacing traditional light sources in transportation, refrigeration and task lighting with a new wave of LED outdoor street and area lighting on our doorstep.

The energy savings case is clearly convincing based on just today’s level of LED performance (and it’s still improving). Cost is now the hurdle, but explosive growth in LED usage in televisions, laptop computers and mobile appliances will bring LED industry capital investment and productivity to the “next level”, lower unit cost and open up a new round of applications in commercial buildings and the home.

The plethora of LED product offerings seems astounding, yet this can be very misleading. One must look at where LED is actually being sold, installed and successfully employed. There are numerous LED recessed lighting products (some of excellent design) for the home, but with \$80 - \$125 price tags, how many are actually being installed today?

LED Specialists has its roots in the transportation industry, developing products for marine, aviation and rail. In these applications, power savings and maintenance cost reduction had allowed for a strong business case for the past few years, and will only get better. Almost all new commercial aircraft interior designs are relying on LED for cabin interior and task lighting.

Recreational marine (yachts) has had great penetration for interior lighting, in fact, one of LED Specialist’s clients, a marine lighting OEM, provides LED technology in 30% of all light fixtures shipped. A typical boat will cut its power consumption for lighting by 65% over halogen based lamps. As costs continue to come down, migration of LED light fixtures into lower cost vessels will continue. Ultimately there is no question, it will all be LED.

The next wave now breaking is outdoor street and area lighting. While High Pressure Sodium (HPS) technology offers high efficiency, its color rendering is horrible. Pilot test programs are showing that LEDs can, with less energy, offer much more useful directed



light (less light pollution), of much better quality than HPS (you'll be able to actually see the color of your car). LED streetlight fixtures are coming down in price (some at \$400). There are at least 14 cities in the US beginning additional LED pilot projects. When maintenance (easier to calculate) and safety (harder to calculate) benefits are factored in, the business case, here also, is starting to make sense.

LED Specialist has been involved in other developments for architectural and decorative lighting applications, where the directional nature of LED provides a unique story. In one project, our OEM client wanted to replace the lighting effect of a 75W incandescent bulb with an LED source in a decorative pendent fixture that would hang over a kitchen counter. The requirement was to have the same lighting profile on the surface of the counter and provide a nice aesthetic illumination "glow" for the glass pendent shade. This was accomplished with a 10W LED solution (85% energy savings) by carefully controlling how the LED light was distributed. The 75W A19 bulb, of course, emits lots of light in all directions and not necessarily where it is needed.

It is not difficult to see where LEDs are leading us. The only question is timing of this migration across the general illumination application spectrum. This will primarily be driven by acquisition costs of LED based products. The LED volumes now in demand outside of general illumination for television, computer and mobile appliances are huge. This will continue to drive innovation, lower LED cost and keep the LED general illumination roadmap moving along nicely.

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