Addressing the Needs of Today’s LED Lighting Manufacturers; Where Art Meets Engineering

by Heather Goldsmith, Future Lighting Solutions

To be a global leader in the electronics industry, a component distributor must support OEMs with technical information and engineering resources, while providing global logistics and inventory services that streamline the manufacturing process. Helping to bring LED lighting into the mainstream, however, requires an extension of this model.

Distributors must take additional measures, such as investing in more in-depth technical and commercial support and enabling the proliferation of easy-to-use solutions, in order to accelerate LED adoption.

The early adopters who developed the first LED-based light fixtures had to build new, custom-engineered light engines and luminaires from the ground up. They experimented with different combinations of LEDs, optics, and power solutions. The traditional strength of electronics component distributors - supplying and supporting a wide variety of components to systems designers – played well in this first phase of the industry’s development.

Today, the trend in distribution is to play a bigger role in helping the solid-state lighting industry overcome the obstacles to mass adoption. In regard to technical barriers, distributors can bridge the gap for lighting industry customers. This requires significant engineering expertise, which in most cases can only be attained with a considerable amount of financial investment and time. Our engineers can help customers overcome technical implementation issues while they develop in-house expertise.

The main challenge is, "How do we implement semiconductor technology in a 'lamp-based' industry?" The foundations of Future Lighting Solutions' model are: Define, Design and Deliver

Define: Custom Developed Tools

Now, as never before, LEDs are a viable alternative for high-volume general lighting applications that will support a rich ecosystem of commercial off-the-shelf suppliers. However, understanding the needs of General Lighting and specific application requirements is where "art meets engineering."

Today's distributor must offer tools to accelerate and simplify the design cycle for SSL applications. Full system design support is critical to enabling LED adoption. Online design tools and educational programs are constantly evolving to assist customers with overall design specifications, optical challenges, and thermal designs. Many of these tools can be used by new customers, but also have the functionality to enable more sophisticated users to take a number of design steps on their own. The distributor's technical teams can then support and assist customers in finalizing their designs.

Design: Dedicated SSL Engineering Resources and Facilities

A distributor should provide proof of concepts to customers, to demonstrate the capabilities of the technology. The proof of concept development gives customers the confidence to design with LEDs by retrofitting existing fixtures, while providing optical, thermal and mechanical design and simulations customized per application. Future Lighting Solutions' Lighting Resource Centres (LRC) leverage state-of-the-art equipment to provide accurate LED and system measurements such as LED flux, illuminance, chromaticity coordinates, color rendering index and radiation patterns.

Deliver: Sustainable Solutions to Allow Design Freedom in the Lighting Application

Understanding LED characteristics, flux and correlated color temperature bins, plays a critical role in sustainable designs. At an LED level, this is only achieved with a world class inventory and supply chain system, and a transparent understanding of manufacturing yields.

Acceleration in development and delivery of SSL applications is achieved by offering integrated solutions. LED light engines save time and development costs for smaller manufacturers, those with limited LED development experience, companies with rapid prototyping needs, and others by reducing engineering, sourcing and assembly needs. Until now, the selection in the market has been very small. The breadth of product and extensive customization available through Future Lighting Solutions' simpleLED program marks a quantum leap in simplifying solid-state lighting development. This line of exclusive light engines is available in many different form factors with over 600 customization options, all featuring ANSI-binned Philips Lumileds LUXEON Rebel LEDs integrated with Tyco Electronics connectors and Carclo optics.

Every step that makes the design and development of solid-state lighting applications quicker and simpler will ease uncertainty that affects LEDs in the mainstream lighting industry. Ultimately, every participant in the solid-state lighting value chain has a part to play in helping lighting industry decision-makers

understand the benefits to their businesses and how this unstoppable migration will benefit their customers. Traditionally, electronics distributors focus their customer service efforts on product designers and manufacturing engineers, and that may not be enough. We need to reach the decision-makers who will help steer lighting businesses to completely appreciate the risks and benefits of implementing solid-state lighting.

Source URL (retrieved on *12/17/2014 - 3:21pm*):
http://www.ecnmag.com/articles/2010/02/addressing-needs-today%E2%80%99s-led-lighting-manufacturers-where-art-meets-engineering