Postings: from the desk of Jim Brodrick

Although you do not often hear about growth in domestic manufacturing here in the United States, the solid-state lighting industry is steadily growing and establishing a manufacturing presence here at home. Solid-state lighting was not only born of U.S. ingenuity and R&D, but is riding the crest of a worldwide regulatory trend toward greater energy efficiency. This offers a golden opportunity for U.S. manufacturing to take a significant role in SSL. From time to time, these Postings will focus on SSL companies manufacturing here in the U.S., a series we call "SSL in America." This is not intended to promote any of the companies, but rather to motivate and inspire others to follow suit. The philosophy and actions of the companies you'll read about here align with the recommendations set forth in the DOE white paper "Keeping Manufacturing in the United States," which grew out of DOE's 2010 SSL Manufacturing R&D Workshop.

Finelite is a manufacturer of lighting systems for office and school environments. It was born in 1991, starting out in founder/CEO Terry Clark's attic (his wife refused to give up her garage for some crazy startup) before expanding to more formal facilities and ending up at its present location in Union City, CA. The company's focus has been on indirect lighting, specifically of the fluorescent type, but four years ago, in keeping with its goal of producing lighting systems that are as energy-efficient as possible, Finelite began also making LED luminaires. The company currently offers several LED desk lamps and undercabinet luminaires, and is working on developing LED products for ambient lighting as well. It participates in DOE SSL workshops, and has been an entrant – and winner – in the Next Generation Luminaires competition.

In 2007, Finelite collaborated with the California Energy Commission's Public Interest Energy Research Program and the California Lighting Technology Center at the University of California/Davis on a study that gave rise to the "task/low ambient" approach to lighting, which is beginning to gain traction in the lighting community. The study found that in an office environment, reducing the level of ambient light while letting each worker control his or her own level of LED task lighting can cut total lighting energy use in half. The idea is that office spaces are typically over-lighted, with way more ambient lighting than is necessary, and that task lighting that's both energy-efficient and easily controllable can enable those ambient levels to be lowered without any adverse effect on performance, thus bringing significant energy savings.

Finelite is guided by this concept, and anticipates that by the end of 2011, SSL will comprise 20% of its total sales – a figure Terry says could grow to as high as 50% over the next five years. That gives added significance to the company's decision to move all of its SSL manufacturing to the U.S. – a step that's currently in the works. Although many of Finelite's LED products, and all of its fluorescent products, are now manufactured here in the U.S., some of its LED products are made in China. But that's expected to change by early this year, when all of the company's manufacturing, across the board, will be done domestically – a move Terry says will result in hundreds of U.S. jobs over the next five years.

Why the move to 100% U.S. manufacturing on the part of Finelite? There were many reasons offered. Some of them seem to be based on something other than the bottom line – for example, the desire to create U.S. jobs, as well as the goal of reducing the company's carbon footprint by eliminating overseas shipping routes and reliance on the coal-fired electric plants that power many Chinese factories. But at the heart of Finelite's decision were some very solid economic considerations.

One of them was the fact that when the manufacturing is done domestically, it's easier to fix quality issues and to incorporate new standards as they're established. Then there's the matter of inventory size. By manufacturing its LED products in the U.S., Finelite won't have to keep as many in stock. Why? One reason is that it takes only two weeks

to make a Finelite product here in the U.S., compared with about 20 weeks (including shipping time) to make it in China. Another reason is that production runs in China are high-volume, not only because Chinese factories insist on it, but also in order to minimize hefty freight costs by completely filling large maritime shipping containers – whereas domestic production runs can be much smaller and even made to order. In addition, manufacturing in the U.S. makes it easier for Finelite to keep pace with the rapid evolution of SSL technology, whereas long lead times and large production runs mean that many products become obsolete before they're sold.

Another important factor behind Finelite's move to domestic manufacturing was automation, which can offset the advantages of cheap overseas labor rates. Silicon Valley, where Finelite is headquartered, is known for its state-of-the-art automation facilities, and the company decided to take advantage of that, in keeping with its philosophy of continually looking for better, faster, and more cost-effective production methods. So it started working with local companies to assemble its printed circuit boards (a significant part of the cost) using highly automated processes – which, as the volume grew, could be done as cost-effectively as it could be by hand in China.

Finelite is one of a number of companies that are working to create and strengthen a solid-state lighting manufacturing base here in the U.S. This will not only help bring significant energy savings through more-efficient lighting products, but will benefit our economy by adding jobs at multiple levels of the supply chain.

As always, if you have questions or comments, you can reach me at postings@lightingfacts.com.

James R. Brodrick