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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 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 endorse or promote any of the companies, but rather to describe advances in energy-efficient solid-state lighting. The activities you'll read about here are consistent with the [U.S. Department of Energy \(DOE\) white paper](#) "Keeping Manufacturing in the United States," which grew out of DOE's 2010 SSL Manufacturing R&D Workshop.

Spotlight on WhiteOptics

WhiteOptics makes low-cost, high-reflectance white coatings and applies them to film and metal for use in luminaires, to improve the efficiency and light distribution of LED and fluorescent lighting. The company's customers are luminaire manufacturers – primarily those that make indoor fixtures. Founder and president Eric Teather says WhiteOptics' products can increase luminaire output by 10-30 percent over standard reflector materials – which, he explains, can help bring down SSL costs significantly, because luminaire cost is proportional to the number of LEDs used, and increasing output enables a manufacturer to use fewer LEDs.

The company got its start in 2009 and commercialized its first product in 2010. Back then, about 90 percent of its sales were for use in fluorescent products and 10 percent for SSL. By 2011, SSL accounted for about one-quarter of WhiteOptics' sales, and last year that figure jumped to 60-70 percent. Eric predicts that this year, SSL will account for 80-85 percent of his company's sales – not because the fluorescent customers are dwindling, but because the number of SSL customers is rapidly increasing. WhiteOptics was the recipient of a DOE research grant in 2010, which just ended and which Eric says helped put the company over the hump.

He notes that his products are typically used in new, cutting-edge luminaires – which nowadays are primarily SSL. Eric points out that the coatings WhiteOptics makes are very well-suited to LED lighting because they're not only highly reflective but also highly diffuse, so they scatter the light efficiently, thus reducing "hot-spot" imaging. WhiteOptics does its core manufacturing – that is, its plastics formulation – at a facility in New Castle, DE, where the company is headquartered and where it also does its R&D. Some of the coating process is outsourced to an East Coast facility, and the metal processing is done in the Midwest by Alanod, whose German-based parent company bought a minority stake in WhiteOptics last year and will help it reach the European market. All told, WhiteOptics employs about 25 people in the U.S., although with the "ripple effect," that number is much higher.

Eric says his company is in the process of setting up coating operations in Mexico and China, which should be up and running later this year. But even those operations will use the plastics that WhiteOptics makes here in the U.S. One reason for the company's reluctance to manufacture the plastics overseas, Eric notes, is intellectual property control. Another is that plastics manufacturing isn't that labor-intensive (e.g., there's no assembly involved), so from a cost perspective there's not a huge advantage to manufacturing it overseas. In fact, Eric says, some things are actually cheaper in the U.S. – such as used equipment. He notes that you can't buy used plastics-manufacturing equipment in China, whereas there's a lot of it available here in the U.S. at a very good price. Almost all of WhiteOptics' capital equipment was bought used here in the U.S.

Eric says the biggest issue his company faces with regard to domestic manufacturing is the fact that half of its customers are in China. He has no plans to cut back on U.S. manufacturing, which is projected to continue to grow as the solid-state lighting market continues to expand.

WhiteOptics is among 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 us at postings@lightingfacts.com.