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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 Carclo Technical Plastics

Carclo Technical Plastics (CTP) is a commercial injection molder of medical, automotive, and optical plastics, including optics for solid-state lighting. Based in Latrobe, PA, the company is a subsidiary of UK-based Carclo PLC. Carclo Technical Plastics designs and manufactures light guides as well as off-the-shelf and custom optics for nearly every kind of SSL application. The company first got involved with SSL manufacturing in 1998, when one of the engineers realized it would be a good market. Today, CTP – a regular attendee at DOE's SSL workshops – is one of the biggest LED optics suppliers in the world.

CTP optical applications engineer Dave Grassi says that about 40 percent of the LED optics produced by his company are manufactured in the U.S. – roughly the same percentage that's sold here – with the rest made in the UK, India, and China. The company has five U.S. manufacturing facilities, but only one of them makes LED optics. That facility is in Latrobe, a small town about an hour east of Pittsburgh that's not only home to the NFL Pittsburgh Steelers training camp, but also gave birth to the banana split, Mr. Rogers, and Arnold Palmer (not necessarily in that order). Dave notes that all of CTP's SSL engineering, sales, and marketing is also done in Latrobe, as well as the optical design. So the two dozen SSL-related jobs at that facility include

everything from optical design engineers, to business development managers, to marketing and sales folks. He says the company works a lot with U.S.-based suppliers – for example, tooling, coating, and ultraviolet infusion – so there's a pretty substantial ripple effect.

Dave says LED optics is the fastest-growing part of CTP's business, comprising 40 percent of the sales of all of the company's optics, compared with 5-10 percent just two years ago. He explains that it's not that sales of the other optics are tailing off but, rather, that LED optics are skyrocketing and are expected to comprise more than half of CTP's optics sales by next year. Dave says the company started molding LED optics in the U.S. in 2008, in order to be closer to its U.S. customers. Prior to that, all of it was done in the UK.

Dave notes that since 2008, CTP has added a lot of capacity to its U.S. manufacturing operations, in terms of engineering and resources. He says the company is currently in the process of doubling the size of its Latrobe facility, increasing the size of the manufacturing space and adding offices for more engineers.

Dave explains that manufacturing in the U.S. makes for quicker turnaround in serving U.S. customers, in terms of support and shipping, and has fostered strong growth in U.S. sales. What's more, he says, having the design, engineering, and project management folks all under the same roof not only streamlines things but also leads to better quality control. And it also makes it easier for customers to visit the facility and see how the products are made – which Dave notes sometimes leads to further product refinements. He says that one of the biggest issues the company faces as a result of domestic manufacturing is cost, which is higher in the U.S. than in many other countries. Dave explains that CTP tries to offset this by automating the manufacturing process as much as possible and has a dedicated automation team in Latrobe for that purpose.

Carclo Technical Plastics 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@akoyaonline.com.