SSL Postings
U.S. DEPARTMENT OF ENERGY

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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 also 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, the Postings *focus on SSL companies manufacturing here in the U.S., in a series called "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 "Prospects for U.S.-Based Manufacturing in the SSL Industry."*

Spotlight on CSA Group Seattle

CSA Group Seattle was born in 2005 as Orb Optronix, which was launched to provide engineering services for the growing LED industry. But in order to fill a series of successively discovered needs, the company started making equipment to measure the performance of its own prototypes, then began to conduct that testing on behalf of various customers, and finally started manufacturing the equipment to sell to customers who wanted to cut costs by conducting the testing themselves.

In 2012, Orb Optronix was acquired by Canada-based CSA Group, but Orb Optronix remains a CSA Group trade name and functions as an independent subsidiary that retains the same three-pronged focus: providing testing, measurement, and inspection services for a range of SSL products, from LED packages to large luminaires; developing optical products and services centered on the growing LED industry; and manufacturing LED testing and measurement products.

Those products include goniometers and sphere-based light-measurement systems for LM-79 testing; hardware and software solutions for LM-80 testing; metrology-grade power supplies for LED testing; and equipment to measure phosphor quantum efficiency and how it degrades over time with exposure to higher-radiance LED lighting. Customers range from SSL companies (chip makers

all the way up to luminaire manufacturers), to manufacturers of other optoelectronics, to universities and government agencies.

Some of the components of CSA Group Seattle's products — such as certain high-temperature valves and pumps — are made overseas, but according to director of operations David Bajorins, about 80% comes from U.S. vendors, in keeping with the company's efforts to keep things as local as possible. And all design and assembly is done in the suburbs of Seattle, at a facility in Redmond, WA, which employs about 20 people — ranging from color scientists and physicists to optical engineers to technicians. David notes that most of these employees have a background in optics or physics, and that almost all of them are involved in some aspect of the manufacturing process.

He observes that Redmond is a high-tech hub, with Facebook located across the street from his office and Microsoft, Amazon, and Boeing among the neighbors. This, David explains, makes it easier to find the kind of specialized talent his group needs. He also observes that CSA Group Seattle testing equipment is high-cost and low-volume, so labor is a very small component of the cost — and he notes that overseas manufacturing costs typically aren't as competitive at lower volumes, where freight accounts for a larger proportion of the cost.

What's more, David says, the complex, high-tech nature of that equipment, much of which is software-based, makes it easier to maintain quality control and protect intellectual property by manufacturing it here in the U.S. than if it were made overseas. Another factor, he adds, is that the free flow of information between CSA Group Seattle's different teams — from design and engineering to manufacturing and tech support — strengthens them and leads to improvements in product design, manufacturability, and customer service.

CSA Group Seattle 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.