

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 Vision Engineering

Vision Engineering designs, develops, and manufactures LED luminaires, primarily for OEMs and distributors. The family-owned company does 100% of its manufacturing at its headquarters in Palmdale, CA, where about 100 people are employed in jobs ranging from R&D to engineering to production. Palmdale is located in the Mojave Desert, about an hour's drive north of Los Angeles, in an area called Antelope Valley, which is a major hub of the aerospace industry and has been home to Vision Engineering CEO Henry Avila and his family since 1985. The view from the company's windows features the test facilities of Lockheed, Boeing, and NASA, along with countless Joshua trees.

Vice president Joseph Avila, Henry's son, recounts that Vision Engineering started in 1997, with a focus on tool and die development and sheet metal fabrication, but became involved with solid-state lighting in 2008. Today, about 75% of the company's lighting fixtures are for retail refrigeration display lighting and about 15% for general illumination (industrial, commercial, outdoor, and specialty lighting), with the remaining 10% of the company's business consisting of tool and die development and sheet metal fabrication.

According to Joseph, one of Vision Engineering's biggest differentiators is the patented precision metal-stamped reflector optics that were invented by his father

and are incorporated into all of the company's luminaires. Because these microreflectors are metal-stamped — as opposed to being cut and bent, or injection-molded from plastic — they're precise and accurate as well as low-cost. Vision Engineering uses a metal-deposition process to apply a 95% reflective coating to these reflectors. Joseph says the main reason the company manufactures in the U.S. is to keep control of the process to ensure high quality, because precision is of such importance that even a slight variation can make a product perform poorly. Another advantage of manufacturing domestically, he says, is that it shrinks lead time, because virtually all of Vision Engineering's customers are U.S.-based. This allows both the company and its customers to keep lower quantities of inventory on hand, thus cutting down on expenditures.

On the flip side, Joseph observes that California — unlike some other states — doesn't offer manufacturers such as Vision Engineering much in the way of incentive tax breaks. And as with other domestic manufacturers, rising U.S. labor rates put a certain amount of pressure on the company, forcing it to work "leaner" and smarter to offset those costs, and to consider things like labor rates and assembly time when designing its products. As a result, Joseph explains, Vision Engineering designs its fixtures to be easier to assemble — so that, for example, they can be put together in five steps instead of 10.

On balance, he says, domestic manufacturing is working out just fine, and the company has no plans to move its operations overseas, nor to stop relying on U.S.-based suppliers for aluminum and plastic extrusions, plastic injection molding, and most of the components.

Vision Engineering 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.