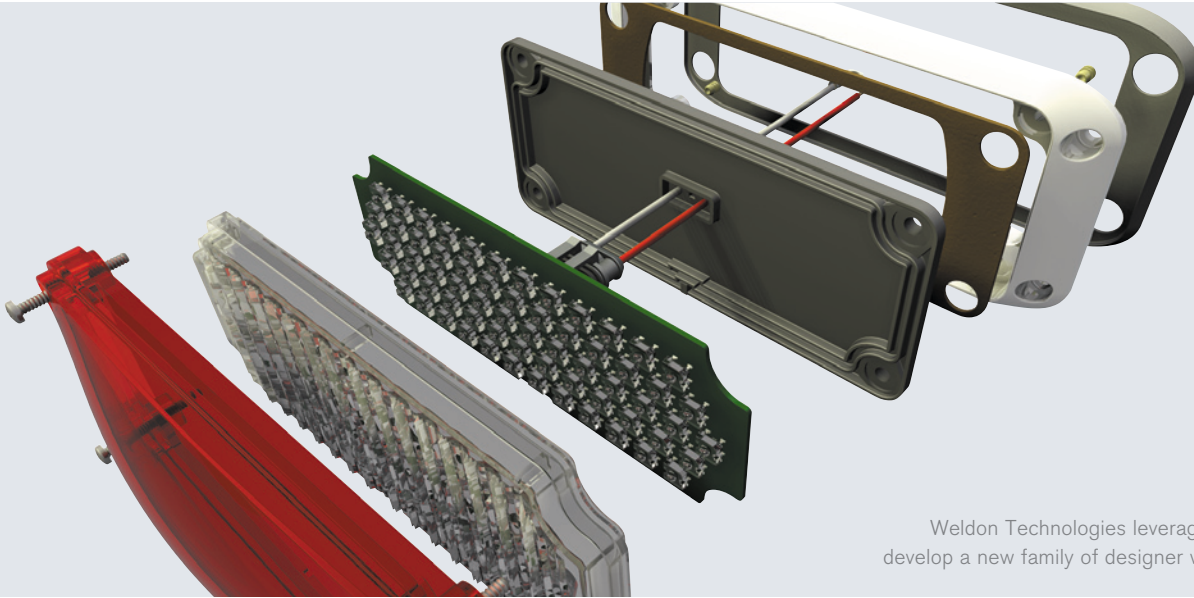


Weldon Technologies, Inc.

DELIVERING CONFIGURABLE WARNING LIGHTS WITH SOLIDWORKS



Weldon Technologies leveraged configurations in SolidWorks to develop a new family of designer warning lights from a single design.

- Shortened design cycle by 25 percent
- Reduced analysis time by 20 percent
- Improved product confidence by 25 percent
- Reduced field assembly from 90 to 60 days

Weldon Technologies, Inc. manufactures lighting and electrical control systems for specialty vehicles such as ambulances, fire trucks, and school buses. The company's primary business has evolved over the last 30 years. Initially a school bus lighting manufacturer, Weldon's warning lamps became the basis for standardized ambulance warning lamp systems, and the company has grown since then to become an innovative electronics supplier.

Faced with increasing competition and industry consolidation, Weldon needed to streamline its design process and deliver breakthrough products more rapidly without sacrificing quality or reliability, explains Weldon Vice President of Sales and Marketing Scott Weishaar. "It's a tradition-bound industry. We need to be able to demonstrate that our new products are substantially better than what the customer already has," Weishaar says.

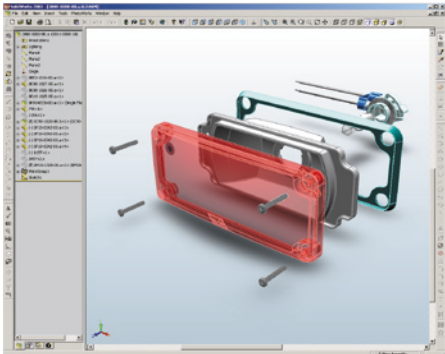
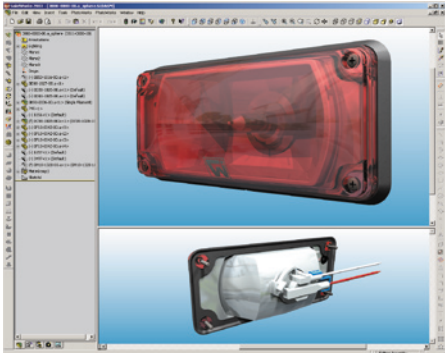
Solidifying technical leadership

To solidify Weldon's technical leadership position in the specialty vehicle lighting market, the design team needed a better way to design configurable optical and electrical systems, using optics (index of refraction) as the driving design variable, while maintaining compatibility with legacy data. Weldon engineers believed a parametric 3D CAD system could help them achieve those goals.

But according to Sean Tillinghast, Weldon vice president of engineering, the company's search for a useful, practical 3D parametric CAD system presented challenges. Weldon engineers initially evaluated several different 3D CAD modelers for parametric optical design (using the desired angle of light to design optical components) before making a selection.

“With SolidWorks, I typically just anticipate where some functionality should be or how it should be used, and it works just like I imagined.”

Sean Tillinghast,
Vice President of Engineering



Weldon Technologies offers a complete set of electronic control systems and warning light products. Weldon's 4600 Series (top) meets industry demand for warning lights. It works with existing equipment but does not require additional connectors, offering clean updated styling.

“Parametric modeling should be intuitive,” Tillinghast explains. “SolidWorks® 3D CAD software has to be the easiest software I've ever used. With SolidWorks, I typically just anticipate where some functionality should be or how it should be used, and it works just like I imagined.”

Weldon evaluated and purchased SolidWorks software for its designers. Because of SolidWorks software's short learning curve, extensive data translators, and intuitive, Windows®-compliant interface, Weldon designers were well into parametric optical design after only two weeks.

Configuring a family of products

Although Weldon's design effort immediately benefited from parametric optical design – linking sketches that define the ray tracing of the optic to the desired output angle so the optical elements could be updated automatically by simply changing values related to the required light distribution – the company soon discovered the power of SolidWorks configurations.

Although the application of lighting products is controlled by federal and state regulations, the lamp type, arrangement, and electrical connections of lights in a preassembled module can result in literally thousands of product combinations. Weldon is able to meet the specialty requirements of its customers by offering custom product configurations. “Using configurations in SolidWorks, we can more easily address all of these combinations. It's nice to do the modeling once and then use configurations to design and document all of the different combinations,” Tillinghast explains.

With this capability, Weldon can quickly fill custom orders and manage a configurable family of products without the need for tedious, repetitive design tasks. “From a technical standpoint, SolidWorks is a tightly integrated package for complex modeling,” Tillinghast says. “There's very little we can't do with it, and it's a great value for the price.”

Cutting the design cycle by 25 to 50 percent and accelerating sales

With SolidWorks software, Weldon has accelerated time-to-market and broadened its product set. “Conservatively, we've experienced a 25 percent reduction in our design cycle,” Tillinghast points out. “But I really think it may be more in the range of 50 percent, especially when we tap additional features in SolidWorks.”

Commenting from a sales and marketing perspective, Weishaar adds, “SolidWorks lets us show our customers prototype concepts early in the product launch process, allowing us to incorporate valuable feedback into the design. The ability to show a high-quality, three-dimensional, color, shaded model that we can rotate and explode allows our sales team to effectively market the product before it's manufactured.”

By choosing SolidWorks, Weldon not only solidified its technical leadership position through the introduction of unique, cutting-edge products, the company also enjoyed design cycle reductions and gained a valuable tool for expanding its business.



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