

Automotive Lighting

Rear Lamps Italia



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Ivan Favro
Style and Graphic Specialist, Automotive Lighting

AUTOMOTIVE LIGHTING is a leader in the research, development, production and sale of a complete range of technologies for front and rear lighting, fog lights, head-lamp cleaning systems, levelling systems, electronic components and central high mounted stop lamps

The Automotive Lighting business line was formed in 1999 from a 50-50 joint venture that merged the lighting technology divisions of Robert Bosch GmbH and Magneti Marelli Spa (Fiat Group). In 2001, after incorporating the Seima Group, a leading manufacturer of rear lights, Magneti Marelli became the sole owner of Automotive Lighting.

Today Automotive Lighting has grown to be a global leader in exterior automotive lighting, and thanks to its commitment to developing innovative and high quality solutions, is the preferred partner of car manufacturers worldwide. The company produces more than 66.4 Mio pieces per year, including headlights, rear lamps, and other lighting components. It has more than 10,000 employees, nearly 1,000 of which are involved in R&D.

Headlamps and rear lamps are becoming increasingly important vehicle safety components. They are also strong brand indicators as they incorporate important styling elements that define the appearance and identity of a particular vehicle model, both during the day and night. The styling departments at Automotive Lighting work with their counterparts at car manufacturers to ensure these safety and brand elements receive precise attention to detail.

Automotive Lighting Rear Lamps, a division of Automotive Lighting, has used solidThinking Evolve since 2001 in three phases of the product development cycle: ideation, development, and visualization.



INDUSTRY

Automotive

CHALLENGE

Delivering brand specific styling and rendering of rear lamps with data exchange to engineering CAD tools.

SOLUTION

Applying solidThinking Evolve's free-from modeling tools and integrated rendering.

RESULTS

- Fast and flexible concept development for customers
- ConstructionTree history feature saves time
- Data exchange with engineering CAD tools
- Realistic rendering of daytime and nighttime conditions
- Evolve is the tool for concept design, theme development and product visualization

One main function of rear lamps is to transport a message from the driver to following traffic and inform traffic about the driver's action or intention. Another important function is to display the vehicle's brand-specific styling as rear lamps are among the first elements to be recognized by following car drivers, especially at night.

In the product concept phase, Evolve's free-form modeling tools and integrated rendering functionalities allow for a quick styling of rear lamps.

"We start the product concept phase from a draft provided by the customer and from a 3D model of the car, developing different style alternatives", said Ivan Favro, Style and Graphic Specialist for Automotive Lighting. "In this phase, the Evolve modeling tools and the capabilities offered by its ConstructionTree technology to interactively modify the shapes allow us to be fast and flexible in our work."

"The challenge resolved with the help of Evolve is the ability of realistically rendering the lamp in any requested condition – at day as well as at night – proposing a suite of stylistic solutions to our customer."

Automotive lamps are complex devices. These components are made of metallic reflectors, light bulb or LED sources, embossed and transparent elements such as polycarbonate lenses, that give the component a shiny aspect. This aspect is very complex to render into an image. Moreover, the rendering process must consider the double usage of automotive lamps (switched off during the day and switched on during the night).

"The challenge resolved with the help of Evolve is the ability of realistically rendering the lamp in any requested condition – at day as well as at night – proposing a suite of stylistic solutions to our customer" said Favro. "For the visualization of lamps, rendering has become a very important tool. Rendering is in fact the only solution able to simulate the complexity of automotive lamps, from reflection to refraction of transparent elements, from esthetic treatment of plastics to metallic treatment to the power-on of all light sources and all related phenomena."

Evolve offers Automotive Lighting Rear Lamps a number of user benefits. It provides the ability to reliably exchange data with engineering software such as Catia V5. It also allows users to create and pinpoint new style solutions and leverage a best-in-class ConstructionTree history to save time when making changes to the design. solidThinking Evolve's rendering engine also acts as a validation, analysis and visualization tool.



ABOUT AUTOMOTIVE LIGHTING REAR LAMPS ITALIA

Automotive Lighting Rear Lamps Italia is a Magneti Marelli company, magnetimarelli.com.

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