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LucidShape Application: The Value of Photorealistic Simulation

Overview

An automotive lighting engineer developed a side turn lamp. The optical system was not homogeneously illuminated, although the required ECE regulations were met.

The Challenge

There were artifacts in the side lamp's lit appearance that could have been predicted with photorealistic simulations during product development, including the ability to:

- Start from any development model with current geometric state and material properties
- Get fast results or high definition, and allow customization of speed and results
- Freely choose camera settings for single images and panorama scans to compare to real images

The Solution

The LucidShape®

lighting engineer to:

- Add visualization to any existing LucidShape model with only a few steps
- Run very fast ray tracing (both forward and backward)
- Use custom luminance camera settings to model real laboratory camera setups for comparison
- Predict the correct luminance and implement improvements before prototyping
- Add an optional environment light source for natural 360° ambiance and photorealistic images

For more information, please contact Synopsys' Optical Solutions Group at (626) 795-9101, visit synopsys.com/optical-solutions/lucidshape, or send an e-mail to lucidshapeinfo@synopsys.com.
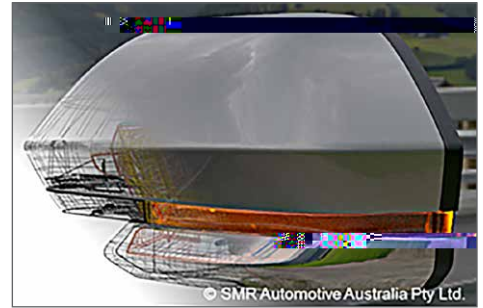

Figure 1: Wireframe and photorealistic image of a side mirror with LucidShape's Visualize Module

Figure 2: Photo of the manufactured side mirror. Courtesy of SMR Automotive Australia Pty Ltd.