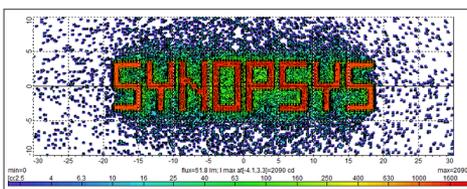
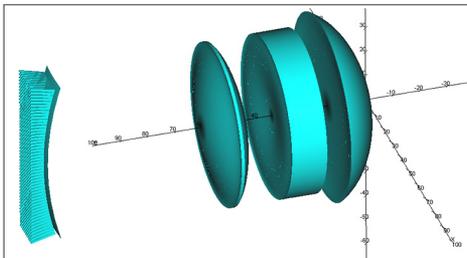
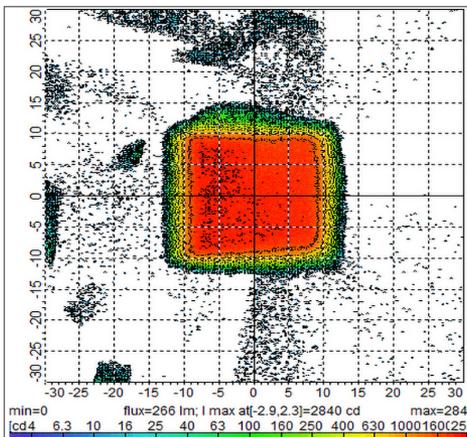
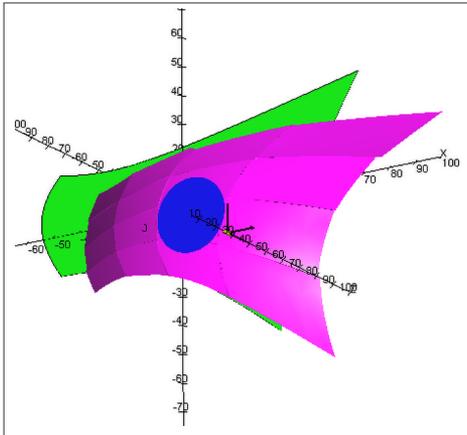


# LucidShape Version 2019.09 New Features

## Design for Automotive Freeform Optics and Pixel Light Technology



LucidShape® version 2019.09 gives automotive lighting designers new tools to create sophisticated freeform reflectors and dynamic pixel light headlamps, as well as enhanced tools for visualization.

### New Freeform Design Feature

LucidShape's MacroFocal feature for the design of multifaceted reflectors has been augmented with state-of-the-art freeform design capabilities to provide more granular control over light spread. The new freeform surface capabilities allow designers to minimize or eliminate the need for multiple rows of facets. As a result, stray light caused by gaps between facets can be minimized, flux collection is maximized, and designers can have more freedom to focus on styling and appearance. In addition, the new capabilities can simplify manufacturing-related processes such as reflector metallization and tooling.

### New Pixel Light Features

LucidShape's Pixel Light features support the efficient design and simulation of high-resolution, dynamic pixel light headlamps. One challenge in modeling a pixel light headlamp is the complexity created by the large number of source pixels, each of which must be individually simulated. LucidShape's Pixel Light design feature streamlines the process of creating the source grid for common pixel headlight configurations. Designers can then perform a complete simulation of the model with the Pixel Light simulator, which efficiently handles a large number of pixels to produce a physically correct beam pattern.

### Enhanced Visualization

The LucidShape human eye vision image (HEVI) capability has been extended to give designers more flexibility to control image brightness, contrast, and color shift. The HEVI capability is included in LucidShape's Visualization Module, which provides physically accurate photorealistic images of an automotive lighting system's unlit and lit appearance and enables designers to evaluate how the human eye will perceive a lighting system.

For more information or to start your free 30-day evaluation, please contact Synopsys' Optical Solutions Group at (626) 795-9101, visit [synopsys.com/optical-solutions](http://www.synopsys.com/optical-solutions), or send an e-mail to [optics@synopsys.com](mailto:optics@synopsys.com).