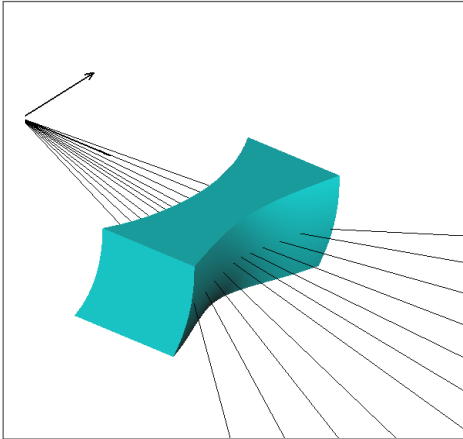


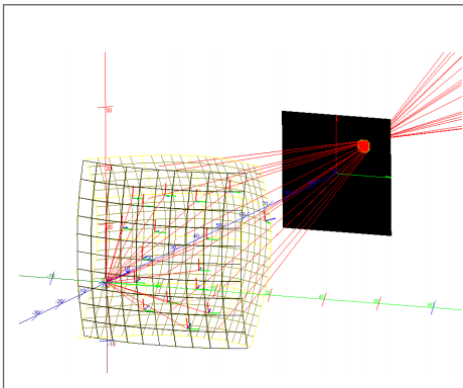
# LucidShape Version 2020.12 New Features

Fast, Accurate Modeling and Analysis of Automotive Exterior Lighting Products



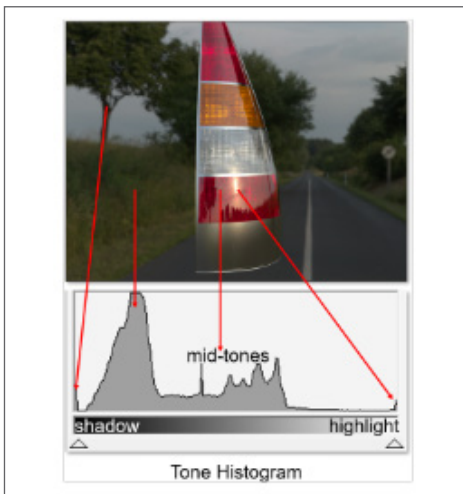
## SmartStart Library Module

Save time and reduce costs with access to a library of materials and media commonly used in the design of automotive lighting systems. The SmartStart Library Module provides medium data of refractive index and absorption, including volume scattering medium models, as well as pre-defined scatter materials using the new refractive microfacet material and measured BSDF data (mBSDF materials).



## Freeform Design Lens

The MacroFocal Freeform Design Single Lens feature allows you to use the Freeform Design algorithm to shape a lens and create complex light distributions. The feature includes a near-field application setting that allows you to use an illumination target in addition to an intensity target distribution. Creating illumination designs for reading lights, logo lights, or micro-projector beams can be addressed directly by using the desired near-field target light patterns.



## Enhanced Human Eye Vision Image Feature

Calculation methods for the LucidShape human eye vision image (HEVI) feature have been enhanced to deliver results more easily. The brightness and color rendition have been improved, and additional controls are available to improve physiological glare control and RGB cutoff. You can also get results faster with the simplified HEVI tone mapping feature.

## Enhanced IIHS Benchmark

The Insurance Institute for Highway Safety (IIHS) benchmark allows designers to evaluate how well headlights allow drivers to see down roads on straightaways and in curves, and how much glare headlights direct at oncoming traffic. The IIHS test capability in LucidShape v2020.12 offers additional alignment controls to support finer adjustments of virtual drive-by test conditions to real-world test situations.

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