Announcing New Release of LucidShape for Automotive Lighting Design

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LucidShape Version 2020.12 Introduces the SmartStart Material Library Module

We are pleased to announce version 2020.12 of Synopsys’ LucidShape automotive lighting design software. In response to a growing demand for reliable surface material and medium information, this release of LucidShape includes the SmartStart Material Library Module, including ready-to-use optical properties. LucidShape v2020.12 also includes extensions to material and medium definitions, introduces new freeform lens design capabilities, and includes an enhanced human eye vision image analysis and headlight analysis based on Insurance Institute for Highway Safety (IIHS) guidelines.

New SmartStart Material Library Module

Having access to accurate optical properties data is key to producing reliable results in lighting simulations. The new LucidShape SmartStart Material Library answers this requirement with an optical properties library that allows lighting engineers to easily obtain and use the optical material and medium definitions they need. First introduced in LucidShape CAA V5 Based version 2020.09 (https://blogs.synopsys.com/optical-solutions/2020/11/16/lucidshape-caa-v5-based-for-automotive-lighting-design-and-visualization-in-catia/), the module saves time and reduces product development costs.
The SmartStart Material Library currently 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). Measured scatter material and media data is available for volume and surface scatter from a variety of vendors, including Evonik, Albis, Dow Chemical, Trinseo, Sabic, Kopp, Covestro, Momentive, RTP, Auer, Idemitsu, Tenibac, VDI 3400, and Mold-Tech.

**Freeform Design Lens**

This release introduces the MacroFocal Freeform Design Single Lens feature, which allows you to use the Freeform Design algorithm to shape a lens and create complex light distributions. This new LucidShape feature supports both far- and near-field applications that allow you to use intensity or illumination target distributions, respectively. This way, both, exterior lightening functions relying on intensity distributions and illumination designs for reading lights, logo lights, or micro-projector beams can be addressed directly by using the desired near-field target light pattern.

**Enhanced Human Eye Vision Image**

Calculation methods for the LucidShape human eye vision image (HEVI) feature have been enhanced to deliver desired 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, which now requires fewer presets to obtain high-quality images.
Enhanced IIHS Benchmark

The IIHS, an organization funded by the U.S. insurance industry, has developed a set of safety standards for headlights based on criteria such as how well headlights allow drivers to see down roads on straightaways and in curves, and for how much glare headlights direct at oncoming traffic. The IIHS test capability in LucidShape v2020.12 offers additional alignment controls to support much finer adjustments of virtual drive-by test conditions to real-world test situations.
Availability

LucidShape v2020.12 is available now. Customers with a current maintenance agreement can download this version from the Synopsys website using their SolvNetPlus (https://solvnetplus.synopsys.com/) account, or obtain the software from their local distributor (https://www.synopsys.com/optical-solutions/support/support-global-contacts.html).

To Learn More

To learn more about these and other enhancements to LucidShape, read the LucidShape 2020.12 Release Notes (https://opticsportal.synopsys.com/LucidShape/LucidShape%20Release%20Notes/LucidShape%202020%20Release%20Notes) on our Customer Support Portal.

Also be sure to register for our upcoming LucidShape webinars (https://www.synopsys.com/cgi-bin/optical-solutions/webinars/reg1.cgi?file=optical-solutions):

- **LucidShape 2020.12 New Features**
  - March 9, 2021; 10:00-11:00 am Central European Time

- **Creating Custom Surface Materials and Media in LucidShape**
  - March 16, 2021; 10:00 – 11:00 a.m. Pacific Standard Time
  - March 23, 2021; 10:00 – 11:00 a.m. Central European Time

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