

Synopsys' LightTools 8.0 Increases Designer Productivity with Faster Performance and Enhanced 3D Design

MOUNTAIN VIEW, Calif., Jan. 28, 2013 /PRNewswire/ --

Highlights:

- Introduces multi-threaded simulation support for dramatically faster illumination simulations
- Supports new 3D objects for easier creation of complex lighting components
- Simplifies construction of source arrays used in displays and luminaires
- Broadens capabilities for street lighting design
- Improves model data management
- Expands tools for visualizing illuminance in lighting designs

Synopsys, Inc. (Nasdaq: SNPS), a global leader accelerating innovation in the design, verification, and manufacture of chips and systems, today announced the availability of version 8.0 of its LightTools® illumination design software, which delivers multi-CPU support that dramatically improves the speed of lighting system simulations. With the addition of several new 3D objects, application-specific utilities and enhancements to parametric controls, this version also provides features that simplify the design of state-of-the-art lighting components.

"We've made LightTools even better with significantly faster performance as well as new and improved tools for building and visualizing illumination designs," said George Bayz, vice president and general manager of the Optical Solutions Group at Synopsys. "These updates help pave the way for lighting engineers to design, manufacture and deploy their products faster and more cost effectively."

Multi-CPU Support

LightTools has been enhanced with a multi-threading capability that enables illumination simulation processes to take advantage of all CPUs or cores on a computer. The multi-CPU feature can dramatically improve the speed of simulations, analyses and design optimizations.

"The multi-thread capabilities of LightTools 8.0 efficiently leverage my computer resources," said Dr. Juan Manuel Teijido, chief scientist at Haag-Streit AG. "The fast ray tracing allows me to perform rapid iterations and stay focused on my optical design. My productivity has been greatly improved with this release."

"The LightTools multi-CPU feature has yielded great results. On my latest project, simulation times with 1.5 million rays were reduced from 177 seconds to 41 seconds," said Kris Young, opto-mechanical engineer at Konstant Products. "This is more than a 4X speed improvement that enables me to run hundreds of simulations at the beginning of a project and also allows for much more complex optimizations at the end of the project."

New 3D Objects

To facilitate the creation of complex lighting components, LightTools introduces new types of 3D objects, including revolved sheets and solids, extruded sheets and solids and freeform sheets. These objects expand the range of shapes available for creating state-of-the-art illumination optics such as compact, freeform surfaces used in automotive headlights.

Source Array Utility

The LightTools Source Array Utility simplifies the construction of source arrays used for applications such as edge-lit displays and luminaires. It enables users to quickly and easily convert a given surface of a solid to an array of identical sources while requiring only a single source in the model.

Street Lighting Utility

The LightTools Street Lighting Utility provides a specialized set of tools that guides users through the process of evaluating, designing and optimizing luminance and illuminance patterns on roadways to meet industry-standard specifications. The utility has been enhanced to broaden capabilities for street lighting design. For example, users can now define a light distribution that is either Gaussian or uniform across a roadway in order to determine the type of distribution that is needed to meet roadway lighting specifications.

Improvements to Parametric Controls

Improvements to LightTools' parametric controls include convenient new ways to move and group them. These enhancements help users more easily organize and manage elements that control the geometry, position and function of each component in a LightTools model.

Enhanced Illuminance Display in the 3D Model

Additional tools are now available for visualizing the shape and orientation of a light source's illuminance distribution with respect to model geometry. This includes the ability to display true color output in the LightTools 3D Design view, as well as the ability to concurrently display illuminance results for all surface receivers in a model, making it easier to compare results.

Availability & Resources

LightTools version 8.0 is available now. Customers with a current maintenance agreement can download this version from the Synopsys website using their SolvNet account. Learn more about LightTools at <https://www.synopsys.com/optical-solutions.html> .

About LightTools

LightTools is a 3D optical engineering and design software product that supports virtual prototyping, simulation, optimization and photorealistic renderings of illumination applications. For more information, visit <https://www.synopsys.com/optical-solutions.html> .

About Synopsys

Synopsys, Inc. (Nasdaq:SNPS) accelerates innovation in the global electronics market. As a leader in electronic design automation (EDA) and semiconductor IP, its software, IP, and services help engineers address their design, verification, system, and manufacturing challenges. Since 1986, engineers around the world have been using Synopsys technology to design and create billions of chips and systems. Learn more at www.synopsys.com.

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