







photopia raytracing software Optical design training BSDF measurement device Optical design consulting Optical lab equipment

Overview

Photopia non-imaging optical design software allows product designers to virtually prototype a system and predict the light output before manufacturing. Photopia includes a large library of measured lamp and material models to ensure accuracy, including full spectral lamp models to simulation color separation and mixing. Photopia includes LTI Optics' Parametric Optical Design Tools which will assist you in designing custom optics that are built around your performance requirements. Photopia makes use of a multi-threaed raytacer for fast calculations, and is integrated directly inside of SOLIDWORKS.

Parametric Optical Design Tools

Photopia's Parametric Optical Design Tools allow you to create parametric geometry based on optical parameters, saving time and increasing your productivity. This is done directly inside of SOLIDWORKS, creating native part files.

- reflectors or lenses
- smooth or segmented or prismatic
- extruded, revolved, or lofted
- full manufacturing parameters



Optimized raytrace engine

Our raytrace engine is continually developed to provide the fastest raytrace possible. It is multi-threaded to take advantage of your computing resource and has optimizations that speed the analysis of large models and systems with large arrays of light sources.

Emphasis on Ease of Use & Accuracy

Photopia has been designed to be easy to use, even if you're not an optical expert. Its as simple as importing or generating your 3D geometry, adding a lamp from our library, assigning materials from our library and running a raytrace. No confusing spreadsheet style interfaces, everything is setup in the fully interactive CAD model right inside of SOLIDWORKS. But don't worry, if you are an optical expert, there are advanced features that you'll appreciate for complex systems as well.

With nearly 35 years of experience, we have developed a proprietary method of creating light source models and material data files that ensures the highest level of accuracy for raytracing. Our customers have relied on Photopia for years in their product development process to consistently predict their performance before building physical samples, as have we in our optical design consulting.

Illumination Lighting UV & IR Medical Solar / PV Light Guides

Aerospace Industrial Sensors

Lamp & Material Library



- Over 1000 lamps and 1000 materials in Library
- Full color lamp models, including color over angle and color over area variations
- Measured BSDF and total reflectance and transmittance data for materials
- Support for energy conversion materials, such as phosphor and quantum dots
- Support for thin film diffusers, including anisotropic batwing and asymmetric lenses
- Support for volumetric scattering, useful for light guides and backlighting
- Full lamp and material modeling services to add custom materials

Extensive reporting and analysis

With every simulation you'll receive an updated report, including:

- list of interactions by layer and material
- optical efficiency
- IES and LDT file export
- irradiance on planes
- o color deviation and mixing
- fully customizable plots and report
- vector and high resolution plot export
- HTML report exporting



Program Versions

Photopia[™]

SOLIDWORKS[®]Add-In

Lamp Library with over 1000 lamps Material Library with over 1000 materials

Customizable Photometric Reports

Single Workstation License

Shared LAN License



All features of Photopia +

Refractive materials

SVG/Vector and high resolution plot export

Get Started Today

Free trial license Free online demo



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About LTI Optics

With a history in optical design dating back to the 1980s, LTI Optics' mission is to help manufacturers develop the best performing optical products possible. We accomplish this by providing our Photopia optical design software, optical and full system design consulting services, and specialty photometric equipment design.

photopia[™]

Photopia non-imaging optical design software allows you to design and optimize an optical system in our full featured CAD system or directly inside of SOLIDWORKS. Our extensive lamp and material libraries and Parametric Optical Design Tools increase the speed and accuracy of your optical design process. Photopia can be used for illumination, lighting, UV or IR, light pipes and guides, solar/PV, optical sensing and any other non-imaging optics applications.

Optical Design Consulting

With over 25 years of non-imaging optical design experience, we have worked on a wide range of applications for illumination, signaling, light guides, optical sensors, solar concentration & daylight collection for industries including lighting, medical, aerospace, automotive, industrial & consumer products. The scope of our projects ranges from optical components to light source selection to full product design.

Lamp & Material Measurements

Photopia contains a library of over 1000 lamps and 1000 materials that we have measured and modeled for the specific needs of raytracing. We understand all the important details that will impact the accuracy of the optical simulation and can provide measurements and modeling for your materials, or assist you in developing and marketing new materials. We also sell equipment for measuring reflectance, transmittance and BSDF of materials.

Custom Lab Equipment

We have been measuring specialized material and light source properties for optical modeling purposes for over 25 years. This, along with optical component testing and troubleshooting, has provided us with a wide range of optical measurement experience that has been used to design our own testing equipment as well as custom systems for clients with specialized requirements, including photometric, radiometric, colorimetry, HDR & integrating



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