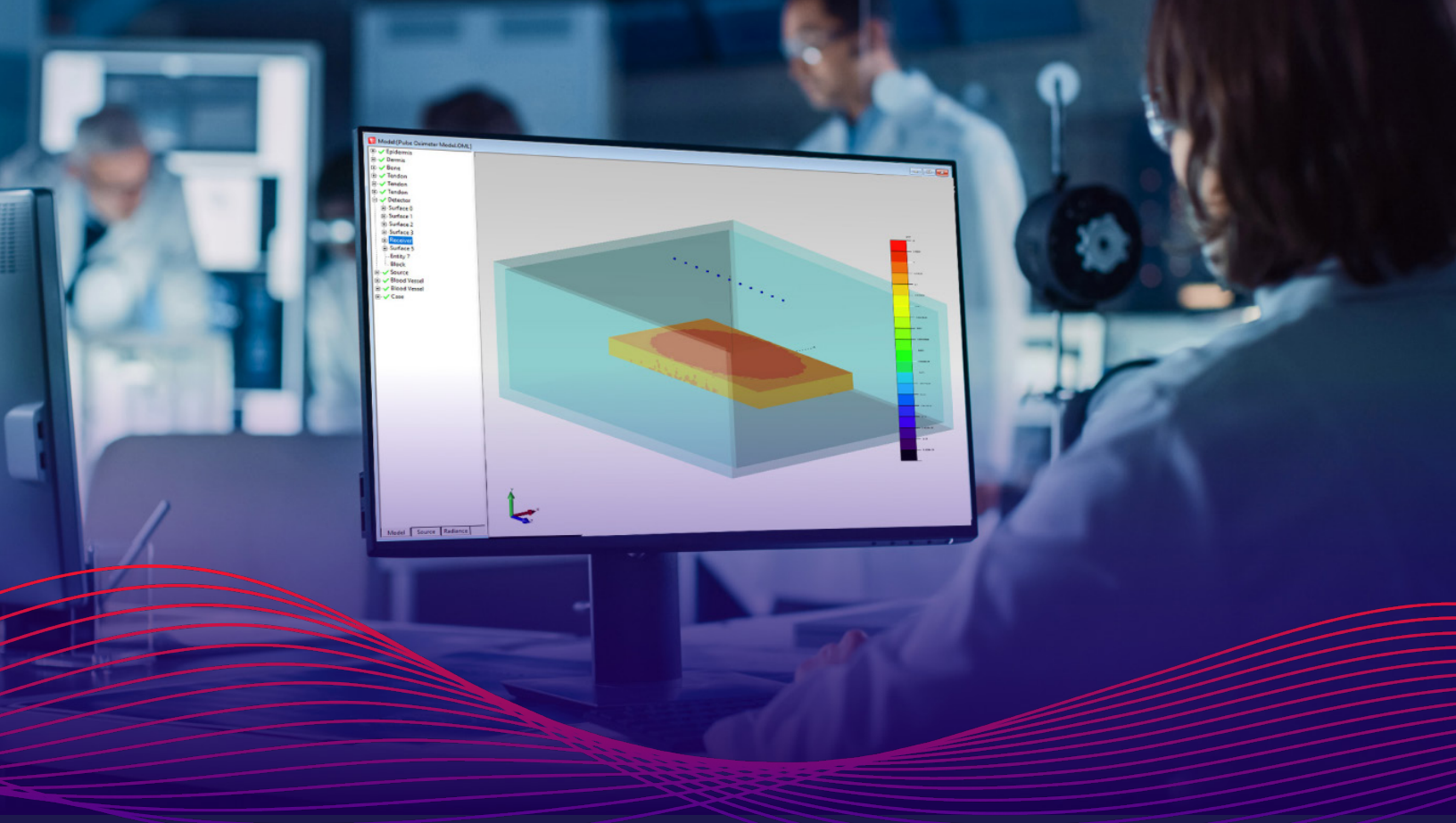

TracePro

Optical Design, Analysis, and Optimization Software

TracePro® is a highly acclaimed opto-mechanical software that facilitates the design, analysis, and optimization of optical and illumination systems. Its user-friendly CAD interface and powerful interactive optimizers make it an exceptional choice for engineers and researchers seeking a robust and efficient optical design environment. With TracePro, you can accelerate the product development process while achieving high levels of sophistication in your designs.

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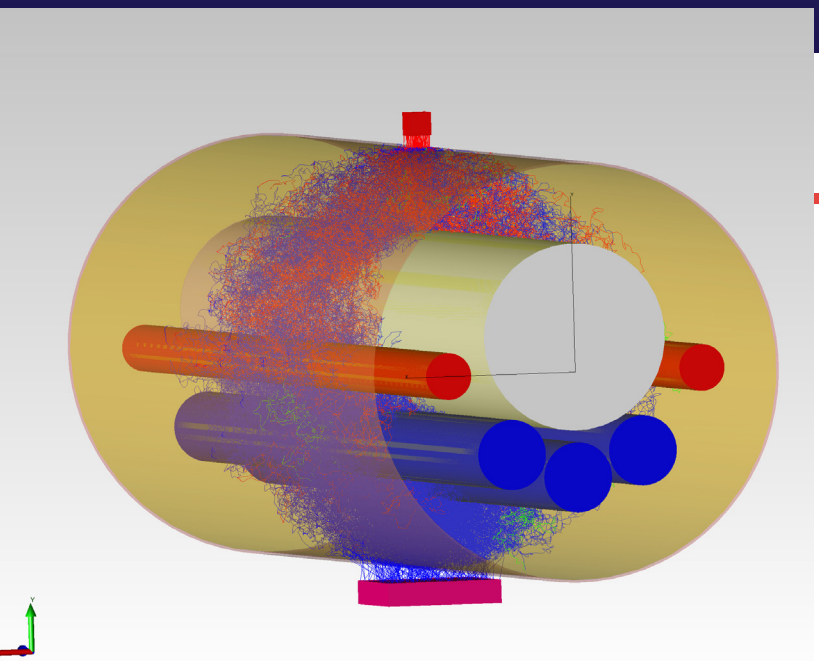
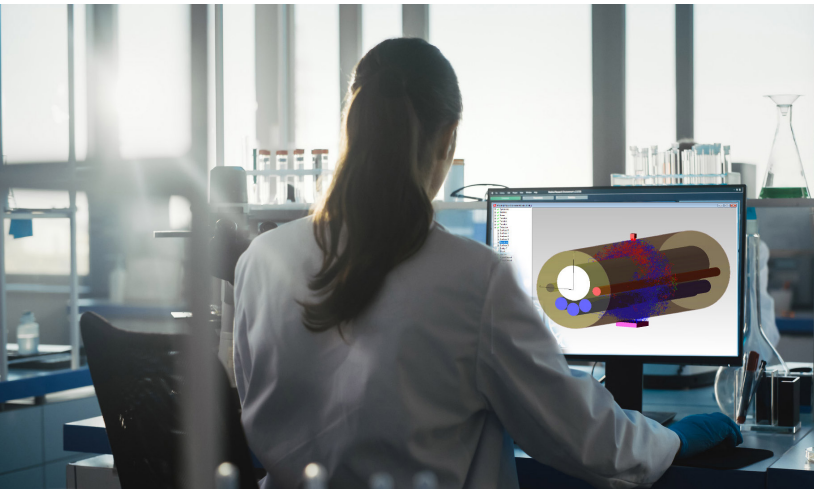
Streamline your optical and illumination systems' prototype to manufacturing process with TracePro®.

With a user-friendly CAD interface, interactive layout and optimization, and seamless interoperability with most popular CAD software, including SOLIDWORKS®, TracePro simplifies your workflow and speeds up your production. Say goodbye to complex and time-consuming design processes, and hello to a more efficient and streamlined operation with TracePro.





Performance & Accuracy

TracePro's multi-threaded, Monte Carlo-based ray tracing engine is both fast and accurate. With complete control over ray tracing parameters, you can achieve simulation results quickly without sacrificing accuracy. TracePro uses ray splitting and exact ray tracing to ensure accurate results. Advanced features such as importance sampling, aperture diffraction, reverse ray tracing, and octree voxelization are also available.

TracePro's unique Analysis Mode ray tracing capability enables you to see results on every surface without having to predefine detectors. Simulation Mode ray tracing is available when extremely large numbers of rays need to be traced.

> TracePro has the performance and accuracy complex tasks require.

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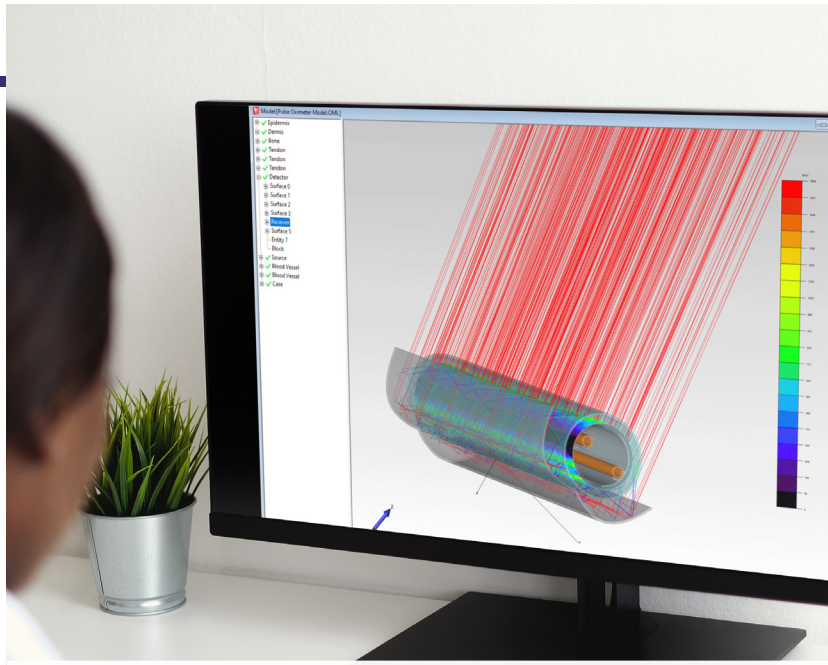
Solid Modeling

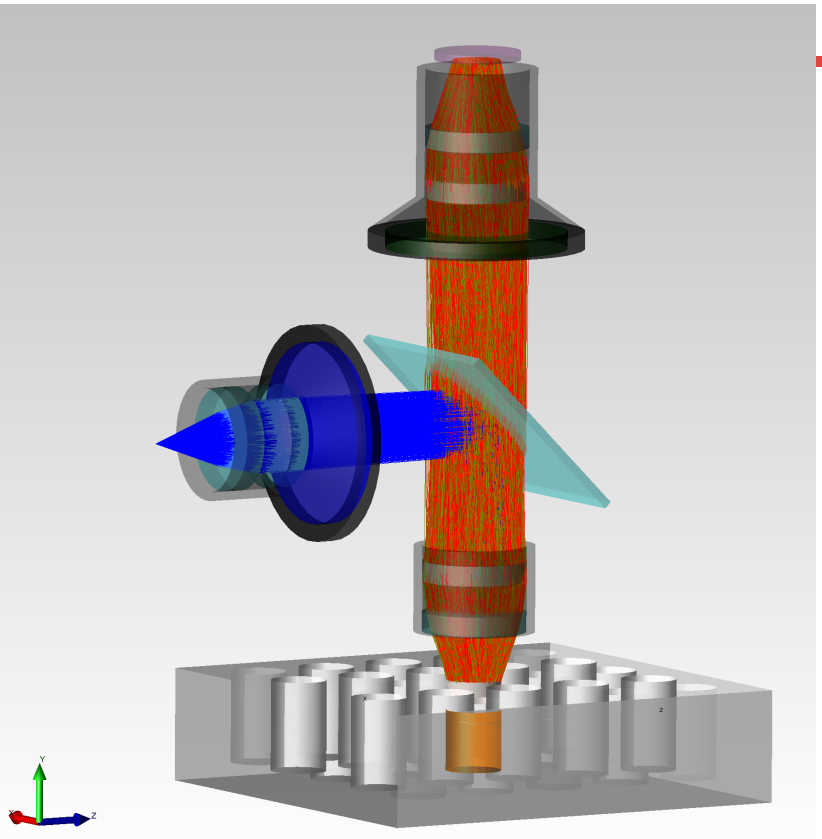
Building TracePro models is easy and flexible, allowing you to work with CAD files, lens design files, or even create solid geometry directly within TracePro using the 3D CAD interface. Complex geometry, such as lightpipes, reflectors, and free-form optics is easily modeled. TracePro's multiple document, multiple view architecture makes it easy to work with several views of the same model, or several models at once.

TracePro also offers an efficient and easy-to-use integration with SOLIDWORKS through its RayViz™ for SOLIDWORKS Add-In.

> Simplify your modeling process with TracePro.



RayViz FOR SOLIDWORKS®



Optical Properties

A wide range of properties can be applied to objects and surfaces in the TracePro including:

- Material
- Surface Scatter
- Bulk Scatter
- Fluorescence
- Gradient Index
- Polarization
- Surface Source
- Temperature
- Temperature Distribution
- Thin Film Stacks
- RepTile Properties

You can choose from the many property catalogs included with TracePro, or define your own custom properties at any time. TracePro has the optical properties you need for your application.

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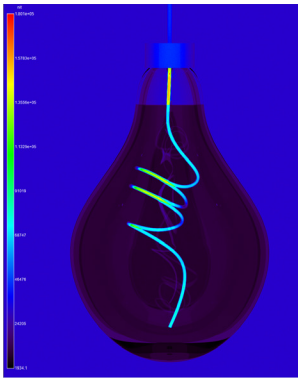
Light Sources



Accurately modeling the light source is a key part of the optical design and analysis process. TracePro features numerous methods for easily and accurately modeling a wide variety of light sources. Sources are modeled using any combination of the following options:

- Grid Sources
- Surface Sources
- File Sources
- Image Sources

> TracePro can model all of your light sources.

Analysis

Analyzing the results of the simulation tells you if you have met your goal or not. TracePro provides a comprehensive set of tools to view and analyze the results of the ray trace, including:

- Irradiance/ Illuminance Maps
- 3D Irradiance/ Illuminance
- Candela Plots
- Polarization Maps
- Incident Ray Tables
- Ray History Tables
- Ray Sorting
- Path Sorting Tables
- Optical Path Length (OPL) or Time-of-Flight Plots
- Volume Flux Maps

TracePro also includes luminance/radiance plots and photorealistic rendering, tools essential for display applications. See the results you need with TracePro.

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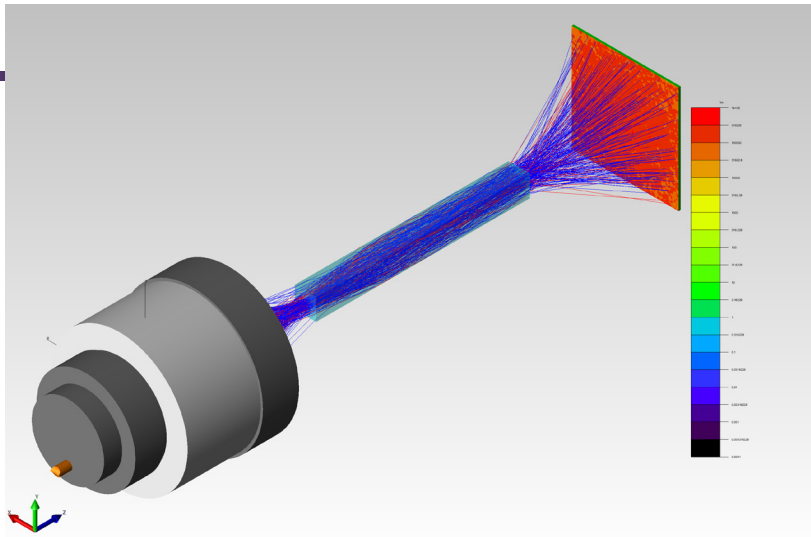
TracePro Features



TracePro's RepTile (Repetitive Tile) feature is a powerful tool for creating surfaces with repetitive microstructures for lighting, display, and backlight applications, saving time and increasing efficiency.

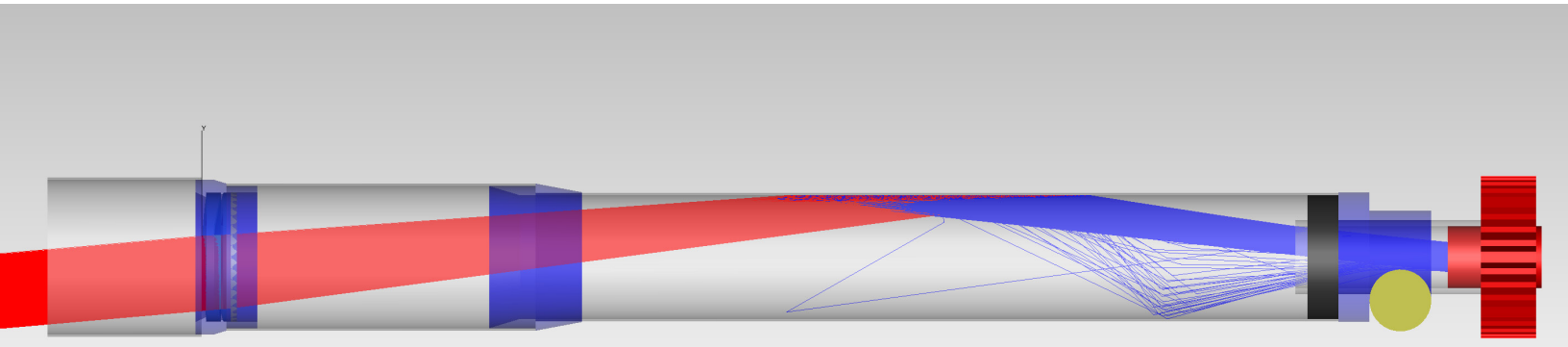
The Scheme macro language included in the Standard and Expert editions of TracePro allows you to write custom macros to automate tasks, perform calculations, and extend the capabilities of TracePro.

TracePro features two powerful optimizers. The Interactive Optimizer is used to design and automatically optimize optical elements such as:

- Lenses
- Reflectors
- Light Guides

Symmetric, asymmetric, and freeform designs are fully supported. There is also an interactive, real-time ray-trace capability.

TracePro's Texture Optimizer lets you optimize the distribution of RepTile features on a surface. You define a goal or target and the optimizer will automatically adjust the RepTile features to meet the goal.



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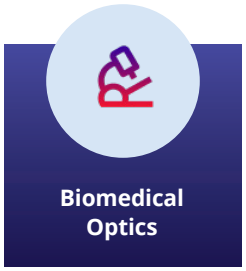
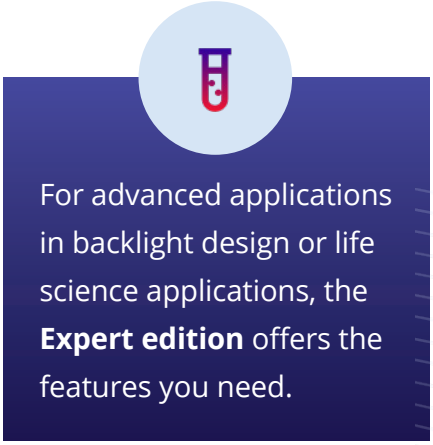
TracePro Use Cases

TracePro has enabled product innovation and research breakthroughs across a wide breadth of applications including:



Editions

We offer three editions of TracePro to match your budget and requirements.



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TracePro Editions Comparison

Three Editions of TracePro are available to cost-effectively meet your design and analysis needs

	LC	Standard	Expert
FEATURES			
User-Friendly CAD Interface	YES	YES	YES
Scheme Macro Language, Recorder, and Editor	NO	YES	YES
Material, Surface, Lens, Lamp, and LED catalogs of commercially available glass, plastics, metals, anodized surfaces, paints, lamps, and LEDs	YES	YES	YES
Interactive Optimization	NO	YES	YES
SOLID MODELING			
CAD importers for popular CAD programs	YES	YES	YES
Lens design importers for popular optical design programs	YES	YES	YES
RayViz for SOLIDWORKS Compatibility	YES	YES	YES
CAD features including solid modeling, Boolean Operations, 3D interactive view, 3D Rendered, silhouette, wireframe, and measurements	YES	YES	YES
CAD translators for import and export of STEP, IGES, SAT	YES	YES	YES
PROPERTIES			
Surface Property modeling includes absorption, reflection, refraction, scatter off any surface, and bulk absorption	YES	YES	YES
Diffraction, Bulk Scatter, Grin, Thin Film Stacks, Polarization, Diffraction Gratings, Temperature Dependent, and Anisotropic Properties	NO	YES	YES
Repetitive Tile (RepTile) Surface, Temperature Distributions, Birefringence, Wire Grid Polarizers, Fluorescence, and Direction Sensitive Properties	NO	NO	YES
Scatter Models	SYMMETRIC	SYMMETRIC & ASYMMETRIC	SYMMETRIC & ASYMMETRIC
SOURCES			
Grid Sources	YES	YES	YES
Surface Sources	YES	YES	YES
Blackbody/Graybody Sources	YES	YES	YES
File sources using ray files	YES	YES	YES
Image Sources	YES	YES	YES
RAY TRACE			
Monte Carlo with Ray Splitting	YES	YES	YES
Simulation Mode (single or multiple exit surfaces to see results) or Analysis Mode (interactive results)	YES	YES	YES
Importance Sampling	NO	YES	YES
ANALYSIS			
Irradiance/Illuminance and Candela Maps (Intensity) for both Photometric and Radiometric output, CIE(x,y), CIE(u,v), and True Color plots	YES	YES	YES
3D Irradiance Maps, Photorealistic Rendering, and Luminance/Radiance Maps	YES	YES	YES
Flux, Ray History, Ensquared Energy, and Path Sorting	YES	YES	YES
Polarization Maps, Volume Flux, OPL, and Time-of-Flight Reports	NO	YES	YES
TOOLS			
Surface Property Generator	YES	YES	YES
Source Builder	YES	YES	YES
IES/LDT Plots	YES	YES	YES
Texture Optimization	NO	NO	YES
Fluorescence Property Generator	NO	NO	YES
Solar Emulator	YES	YES	YES
Analysis Toolkit	YES	YES	YES
Lighting Toolkit	YES	YES	YES
Stray Light Analyzer	NO	YES	YES

Lambda Research Corporation, established in 1992, is a leader in software for the design, analysis, and simulation of optical and illumination sytems. Its flagship product, TracePro, is an award-winning opto-mechanical design software widely used for designing and analyzing illumination and optical systems.

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