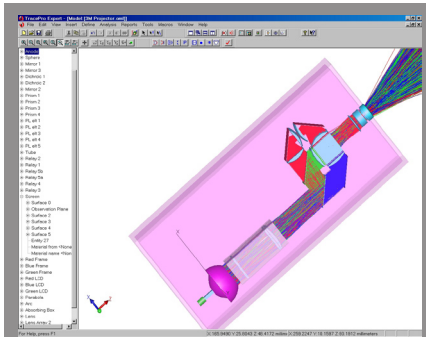


TracePro® Training Programs

Maximize the power of TracePro



FEATURES AND BENEFITS

Explore the power and versatility of TracePro

Maximize your investment

Draw on the technical expertise & industry specific knowledge of TracePro certified instructors

Leverage your knowledge of other engineering software

Learn the most effective ways to create and control your models



Model. Design. Analyze.

The development of optical systems, sources and components involves adherence to various system performance criteria and constraints including spatial and angular light output distribution, uniformity, intensity, and spectral characteristics. Achieving these criteria quickly with a manufacturable and cost effective design requires modeling software that is powerful, easy-to-use and accurate. TracePro, renowned in the scientific community for the accuracy of its simulations, offers engineers and scientists the confidence that the performance of the finished products will concur with the simulated design without costly prototype iterations.

TracePro

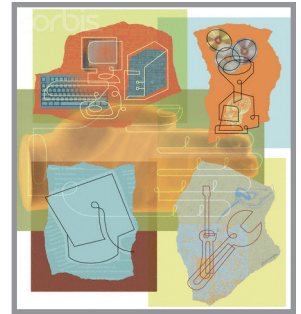
TracePro is a comprehensive, versatile software tool for modeling the propagation of light in imaging and non-imaging opto-mechanical systems. Models are created by importing from a lens design program, a CAD program or by directly creating the solid geometry in TracePro. Source rays propagate through the model with portions of the flux of each ray allocated for absorption, specular reflection and transmission, fluorescence and scattering.

From the model, analyze:

- Light distributions in illumination and imaging systems
- Stray light, scattered light and aperture diffractions
- Throughput, loss, or system transmittance
- Flux of power absorbed by surfaces and bulk media
- Light scattering in biological tissue
- Polarization effects
- Fluorescence effects
- Birefringence effects

Applications

- Aerospace
- Display
- Energy and Power
- Industrial Manufacturing
- Information Technology
- Life Sciences
- Lighting
- Photonics



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Illumination Analysis

Day 1:

The TracePro User Interface

- Quick Tour of TracePro
- Models and Windows
- Controlling the View
- The System Tree
- Solid Modeling in TracePro
- Constructive Solid Geometry
- Primitive Solids
- TracePro Solids

Creating a Model

- Creating Importing Objects
- Importing CAD Solid Models
- Applying Material and Surface Properties
- Workshop-Examples
- TracePro Bridge™ for Solidworks®

Getting Output

- Grid and Surface Sources
- Analysis Mode and Simulation Mode
- Threshold & Limits
- Irradiance/Illuminance Maps
- Candela/Intensity Plots
- Ray Sorting
- Ray Histories and Tables

Day 2:

Advanced Features

- Custom Property Creation
- Macro Commands & Programs
- Importance Sampling
- Raytrace Algorithm Overview
- Raytrace Options
- Optimizing Raytrace Parameters
- Workshop-Examples

Stray Light Analysis

Day 1:

Simulating Stray Light

- Grid and Surface Sources
- Optimizing Raytrace Parameters
- Using Ray Histories
- Using Ray sorting
- Irradiance Map

Scattering and Stray Light

- BSDF vs. Scattered Intensity
- Point Source Transmittance
- Stray Irradiance

The Monte Carlo Method

- General Theory
- Ray Splitting
- Importance Sampling

Examples

- Newtonian Telescope
- Cassegrain Telescope
- IR Self-Emission Problem

TracePro® Macro Language

Day 1:

Introduction to Scheme

- Language overview
- ACIS geometry representation
- Language syntax & list processing
- Simple Examples using the Macro Recorder

Scheme Programming

- Scheme functions & procedures
- Defining and assigning variables and lists
- Looping and branching
- Input/Output
- Workshop: creating geometry using Scheme procedures
- OptiBelPro™ Optimization Module

Day 2:

Advanced Topics

- Survey of Scheme primitive commands
- Survey of ACIS and TracePro extensions
- Workshop: automating analyses with looping and branching
- Workshop: Exercises-Examples using Scheme (Randomized, Thin Sheet, Multiple Wavelengths, Repetitive Raytrace, Faceted Objects and others)

