

# TracePro®



## Update Guide Release 7.0

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# INTRODUCTION

TracePro 7.0 is a major release and includes some fundamental changes as well as new features and enhancements. This document serves as a guide for you to transition from TracePro 6.0 to 7.0. The major new feature of TracePro 7.0 is multithreading of the ray tracing process. This enables TracePro to leverage the multi-core chips and hyperthreading available in modern processors to substantially reduce ray-trace times.

# WHAT'S NEW IN TRACEPRO 7.0?

Changes in TracePro 7.0 compared to the 6.0.x series are summarized as follows:

- Multithreaded ray-trace, enabling speed increase on multi-core processors.
- New Irradiance Map features.
- New RepTile geometry (Expert Only).
  - Flattened Cone
  - Pointed Cone
- New Utilities menu with formerly standalone TracePro utilities.
  - Bitmap source generator
  - Surface Source Property Generator
  - Fluorescence Property Utility
  - IES Import Utility
  - Texture Optimizer
  - 2D Optimizer
  - BSDF Converter
- Asymmetric BSDF models available in Standard Edition.
- System Tree enhancements.
  - Grouping of objects
  - Rearranging the tree

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## Multi-threading

TracePro now supports multi-core processors using multi-threading. This improvement is completely transparent except for a speed increase during ray tracing on multi-core systems. TracePro will use whatever cores are available. Both Win32 and x64 TracePro, and all TracePro Editions, have this feature.

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## New Irradiance Map features

The Irradiance Options dialog box has been enhanced with new functionality. New irradiance map features include the following:

- **New rainbow color palette.** The previous rainbow has been renamed to (blue max) to distinguish it from the new rainbow. The new rainbow palette has pure RGB red for the highest flux value, with colors progressing through the rainbow down to violet for lowest flux values.
- **New normalizations.** The *Normalize to emitted flux* checkbox has been removed, and now there is a list of choices for normalization: None, Emitted Irradiance, and Peak. The footer of the Irradiance Map always displays the Total Flux/Emitted Flux value, corresponding to the old *Normalize to emitted flux* checkbox. The Normalize to Emitted Irradiance choice enables easy calculation of Point Source Transmittance, useful in stray light calculations.

The new rainbow color palette is illustrated in Figure 1 below.

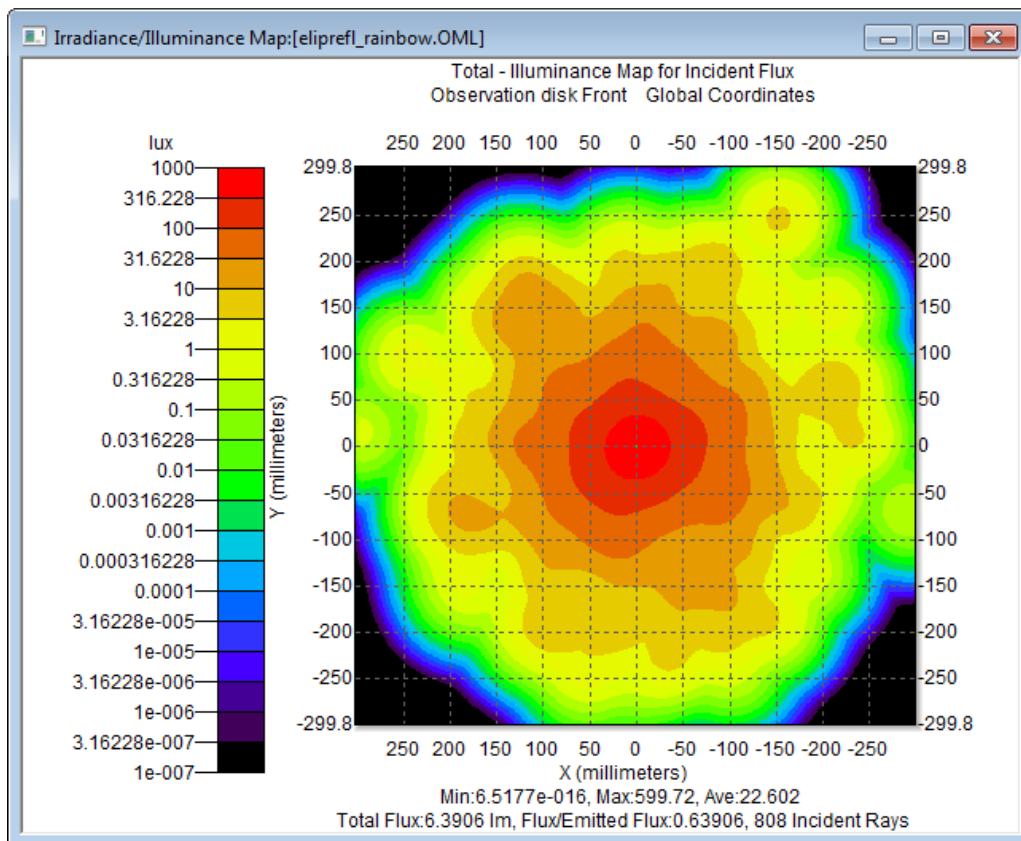


Figure 1. New rainbow color palette for irradiance maps. The Color (rainbow) on Black palette is shown.

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## New RepTile geometry (Expert Edition Only)

### *Flattened Cone geometry*

A flattened cone is like an inverted ice-cream cone with the top truncated. The edges at the top and bottom may also be rounded. To make a flattened cone, specify the end radius, cone angle, depth/height, and optional radii for the trough and peak edges.

### *Pointed Cone geometry*

A pointed cone is like a flattened cone, but with the end radius equal to zero. The pointed top and the edge at the base may optionally be rounded. To make a pointed cone, specify the cone angle, depth/height, and optional radii for the top and the bottom edge.

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## Utilities menu

A new Utilities menu has been added to the main TracePro menu. This menu incorporates utilities that were formerly available as free standalone accessories for TracePro. For convenience they are available from the new menu. These utilities include:

- Bitmap source generator
- Surface Source Property Generator

- Fluorescence Property Utility
- IES Import Utility
- Texture Optimizer
- 2D Optimizer
- BSDF Converter

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## Asymmetric BSDF models

The asymmetric BSDF models, namely:

- Elliptical ABg
- Elliptical Gaussian
- Asymmetric Table

are now available in the Standard Edition of TracePro.

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## System Tree enhancements

The Systems Tree in TracePro has been enhanced to allow you to make groups of objects, and to change the order in which objects and groups appear in the tree. To make a new group, simply right-click on the tree window and select *New Object Group* from the pop-up menu. A new group will appear with the default name New Group. To change the name, simply edit the name as usual. To add an object or group to the new group, simply drag and drop. You can also change the order of objects or groups by drag-and-drop.