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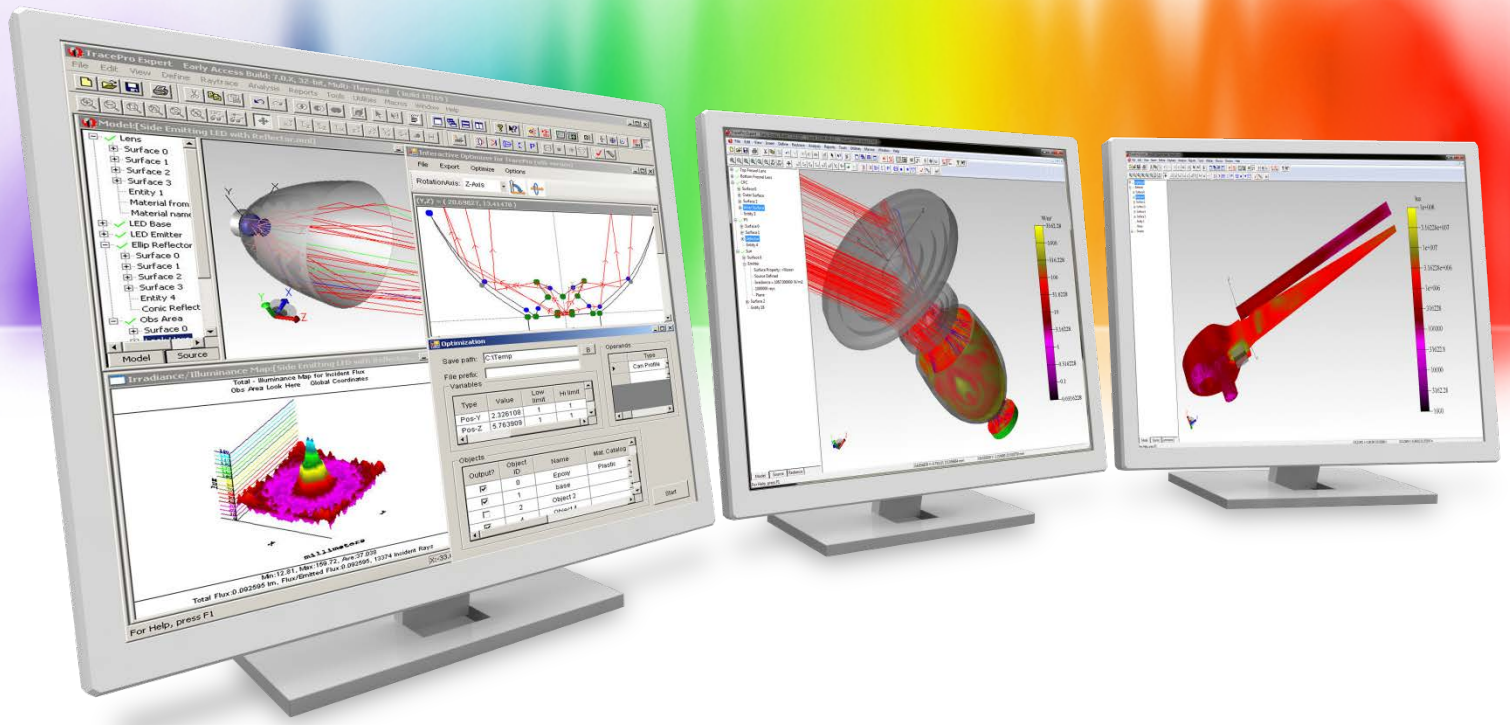

LED LUMINAIRE ANALYSIS: START-TO-FINISH

A Back-to-Basics TracePro Webinar

July 30, 2014

LAMBDA RESEARCH CORPORATION

Presenter

- **Presenter**

  Dave Jacobsen
  Sr. Application Engineer
  Lambda Research Corporation

- **Moderator**

  Mike Gauvin
  Vice President of Sales and Marketing
  Lambda Research Corporation

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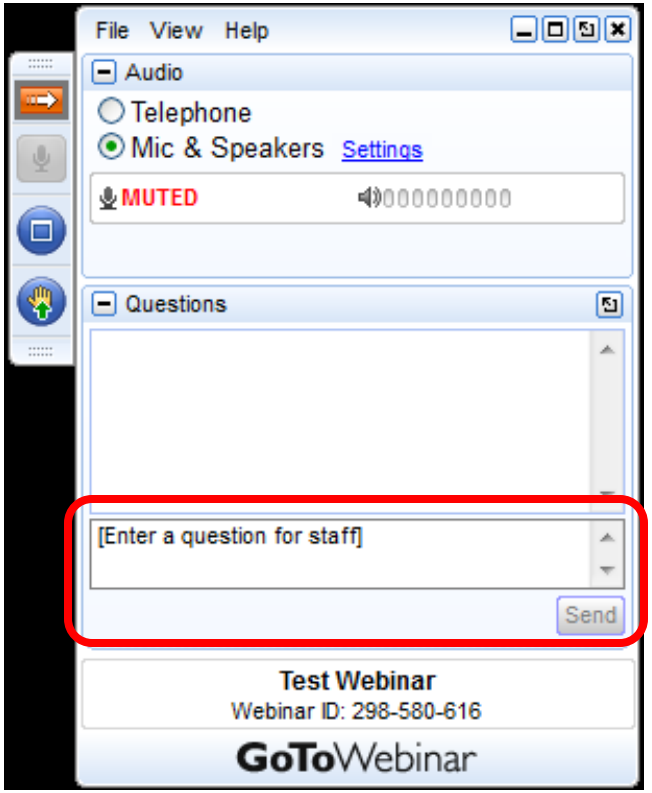
Format

- A 25-30 minute presentation followed by a question and answer session
- Please submit your questions anytime using Question box in the GoToWebinar control panel



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Additional Resources

- Past TracePro Webinars

  http://www.lambdares.com/webinars

- TracePro Tutorial Videos

  http://www.lambdares.com/videos

- TracePro Tutorials

  http://www.lambdares.com/features/tracepro-tutorials

- Information on upcoming TracePro Training Classes

  http://www.lambdares.com/training/software-training

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Upcoming TracePro Training

- **KU Leuven Ghent, Belgium**
  - Introduction to TracePro – Sept. 16 -17, 2014
  - Optimization with TracePro– Sept. 18, 2014

- **Littleton, MA USA**
  - Introduction to TracePro – Oct. 6 – Oct. 7, 2014
  - Optimization with TracePro – Oct. 8, 2014
  - Stray Light Analysis Using TracePro – Oct. 9, 2014
  - Scheme Macro Programming – Oct. 10, 2014

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LED Professional Symposium and Expo

- **Bregenz, Austria**
  - LED Luminaire Design Optimization - Theory, Methods, and Applications Workshop – October 2, 2014

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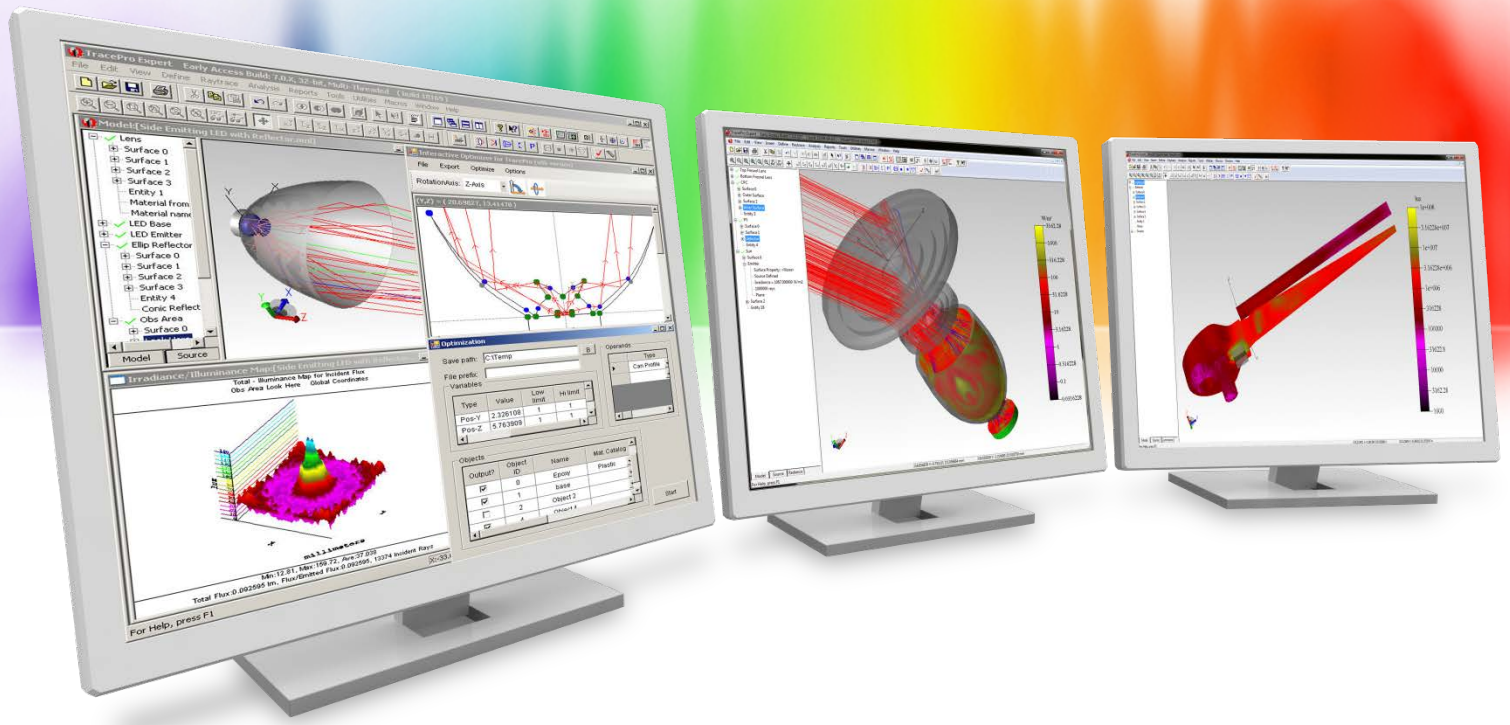


LED LUMINAIRE ANALYSIS: START-TO-FINISH

A Back-to-Basics TracePro Webinar

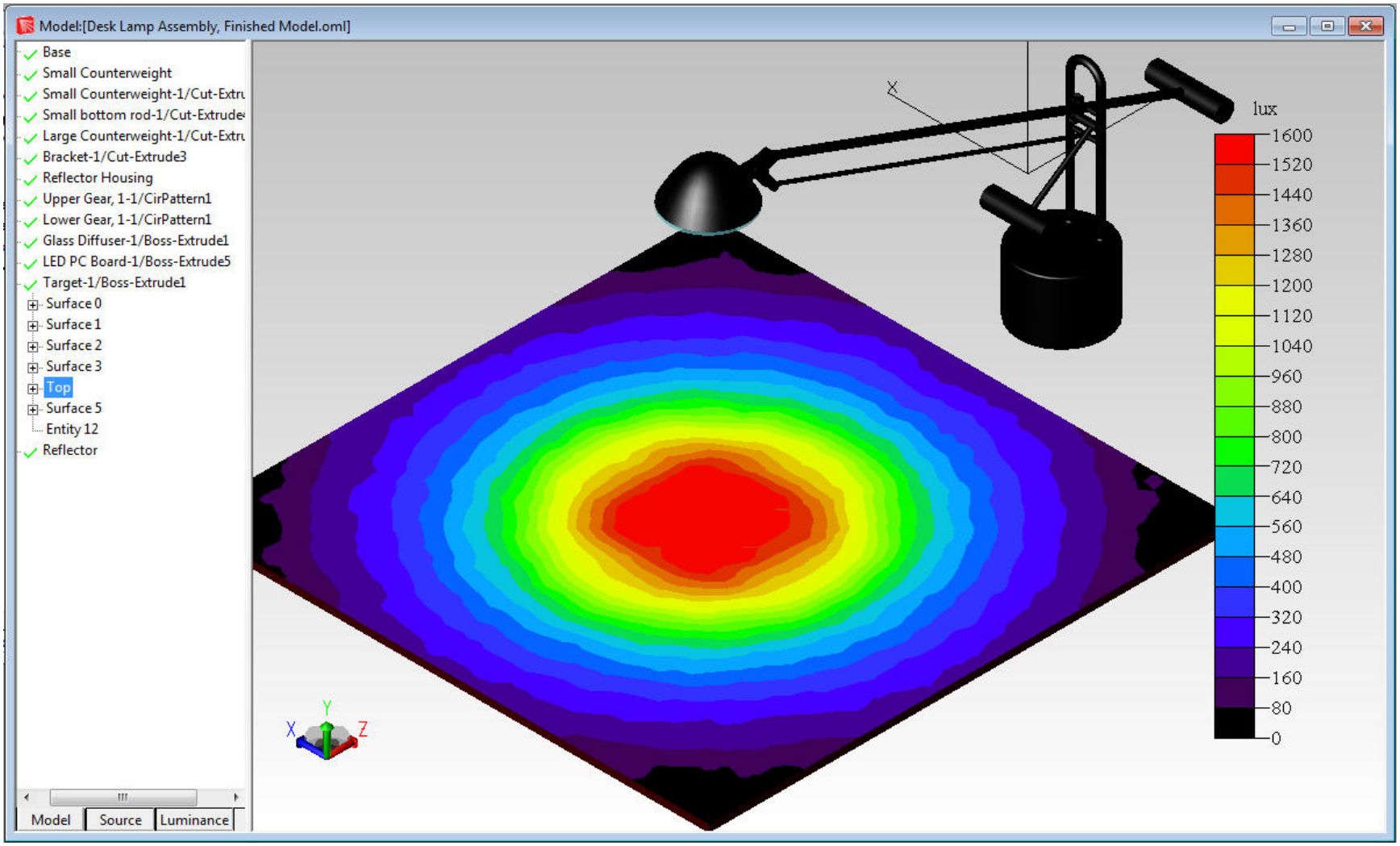
July 30, 2014

LAMBDA RESEARCH CORPORATION

Agenda

- Import a luminaire model from a CAD program into TracePro
- Use the TracePro Bridge for SolidWorks to simplify the workflow
- Apply Surface and Material Properties
- Set up the LED sources using the Surface Source Property
- Run the raytrace
- Analyze the results including irradiance maps, candela plots, and IES and LDT file
- Questions and Answers

The Goal – Analyze a LED Luminaire Imported from a CAD Program



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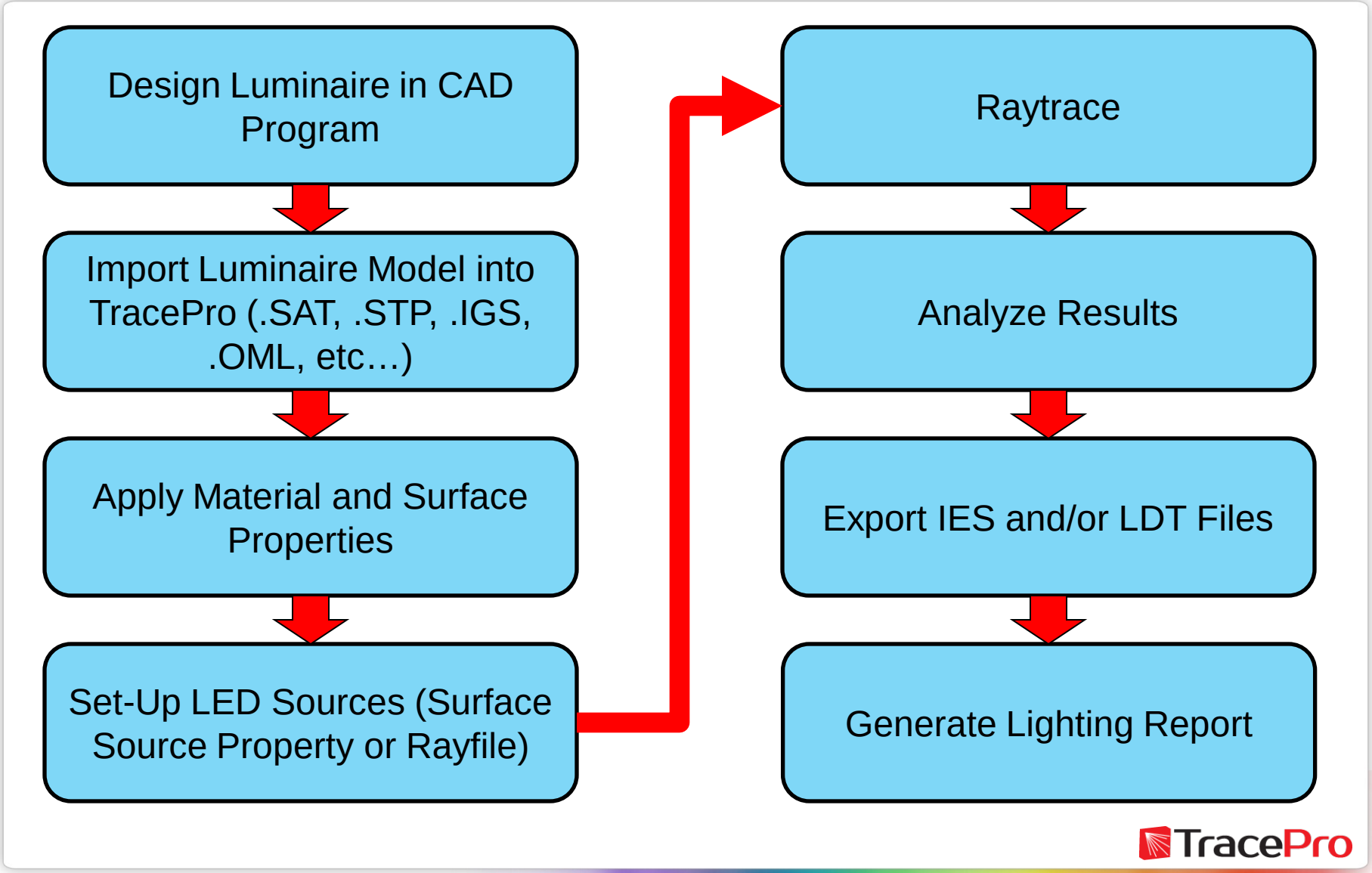
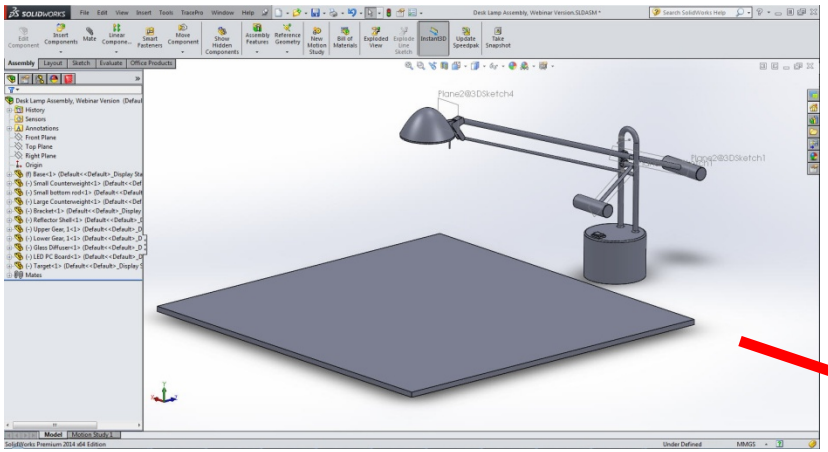
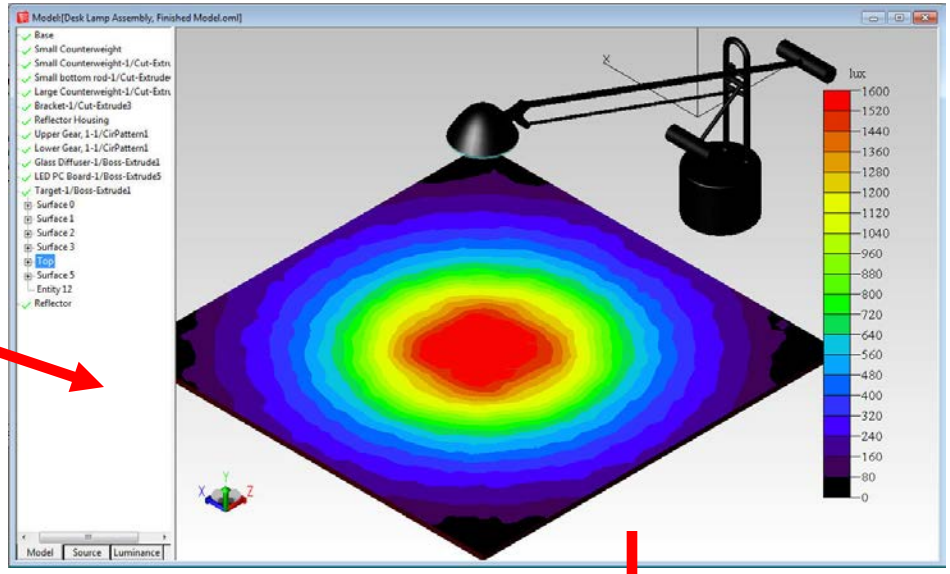
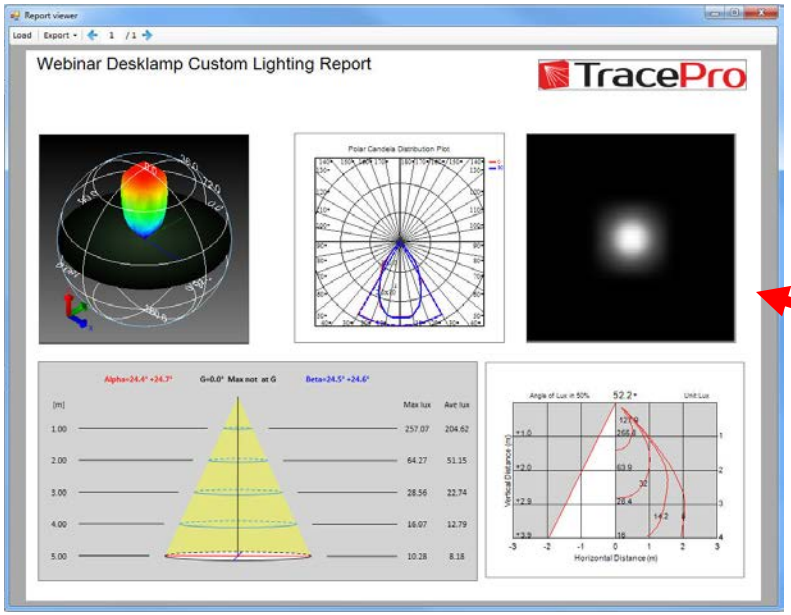
LED Luminaire Analysis Process – Typical Workflow

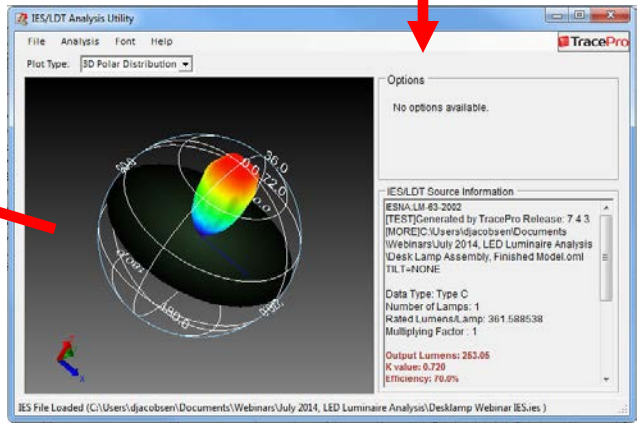


LED Luminaire Analysis Process – Typical Workflow









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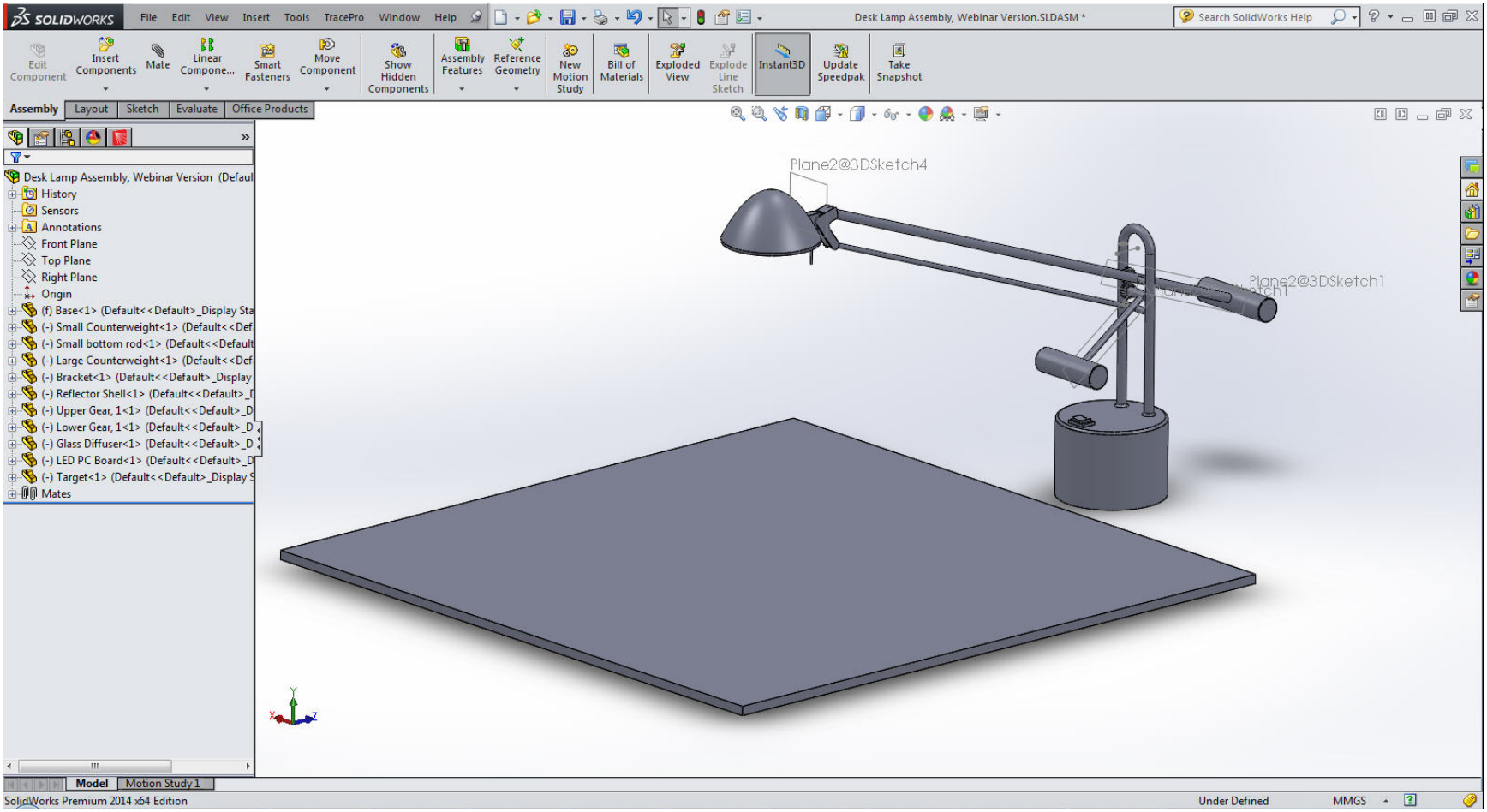
CAD Model



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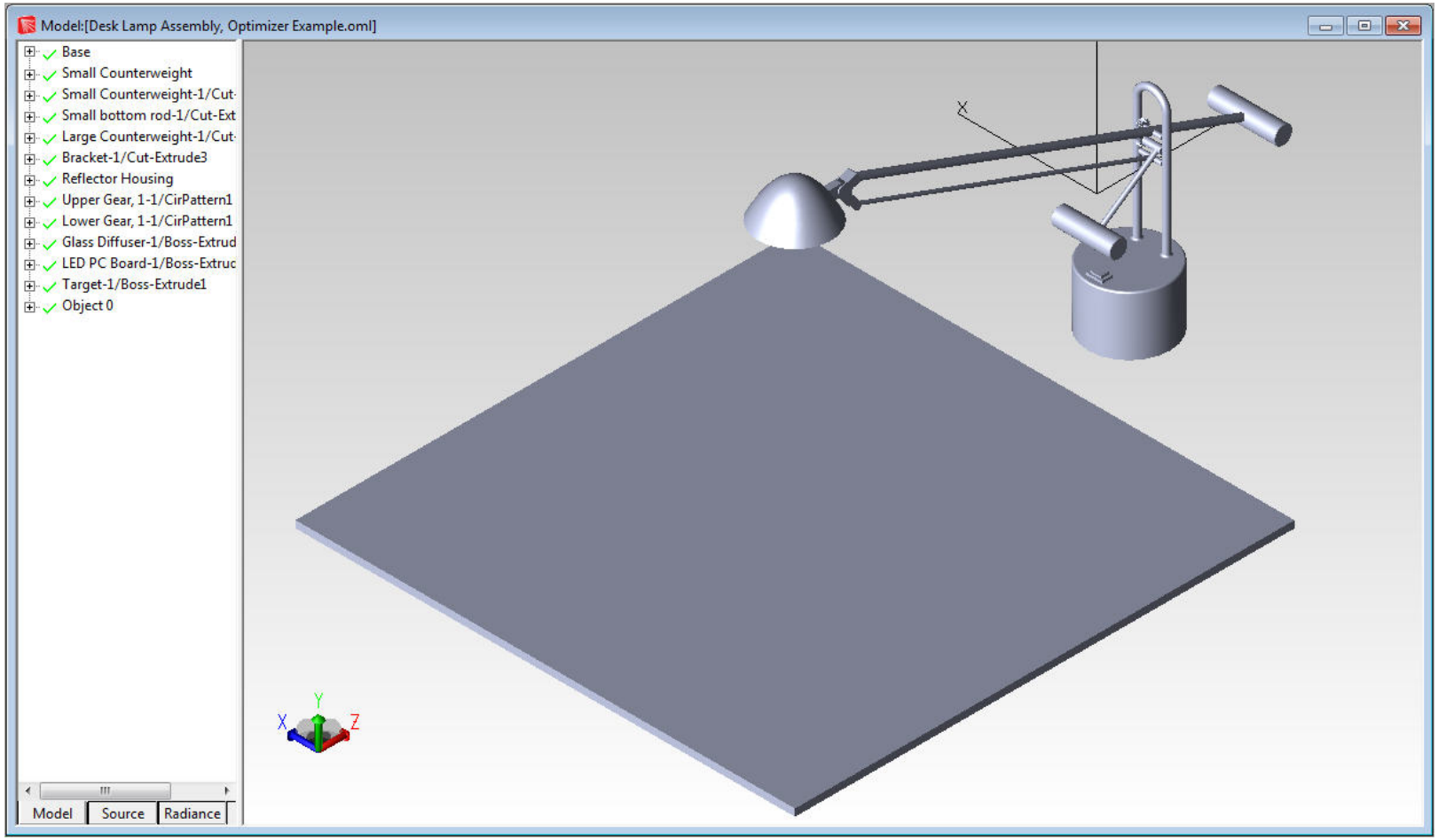
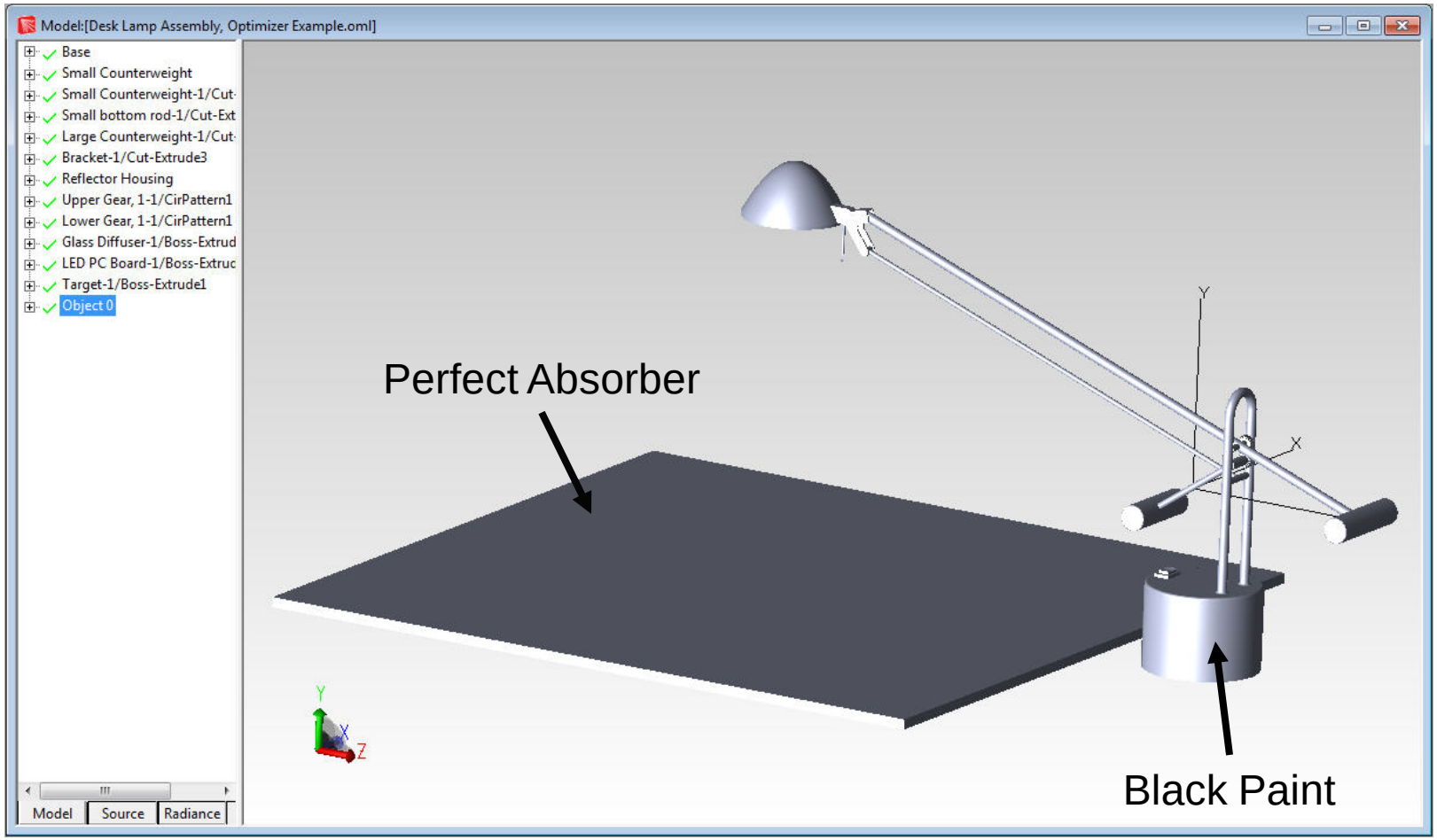
CAD Model Imported into TracePro



TracePro

Model Properties



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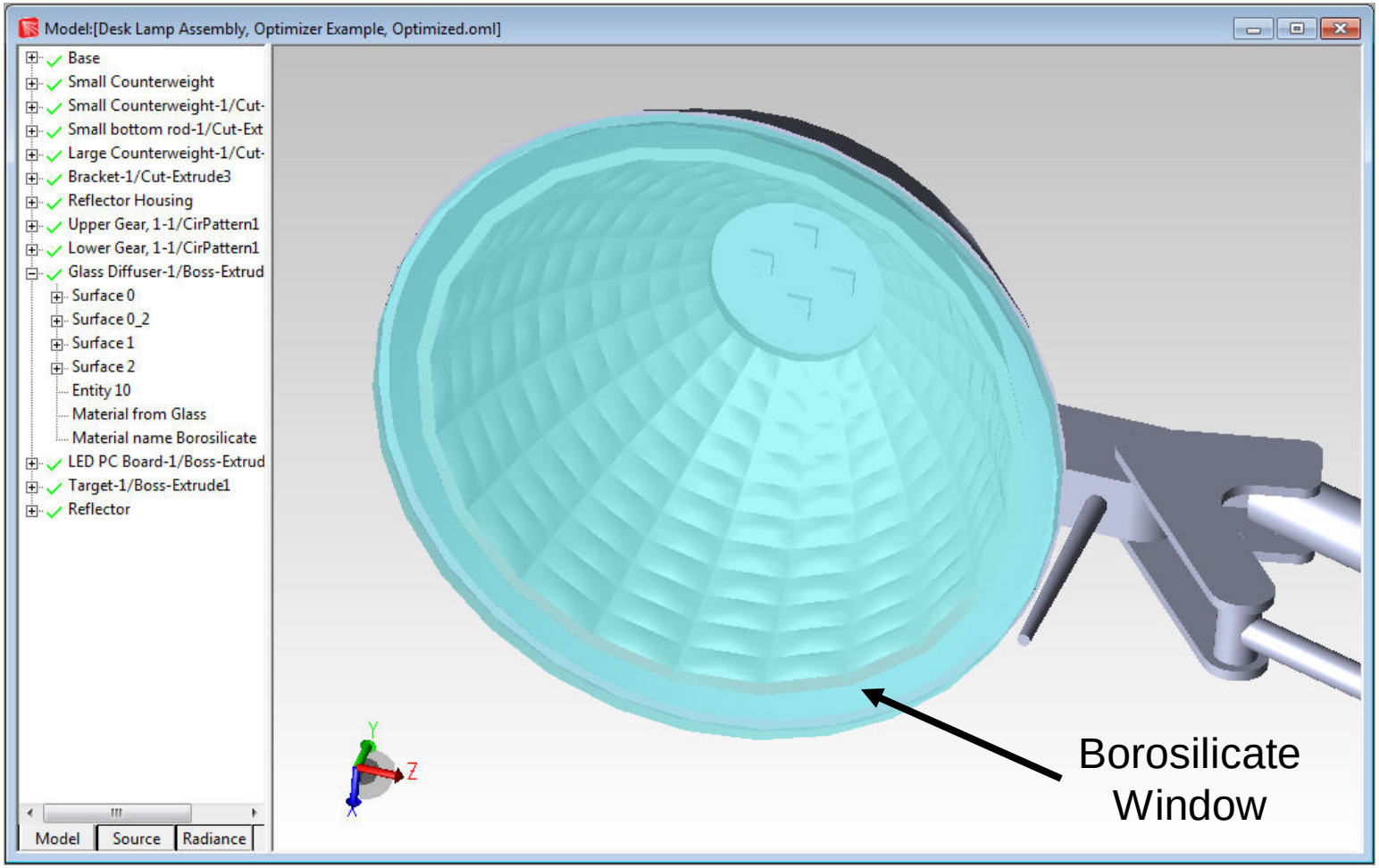

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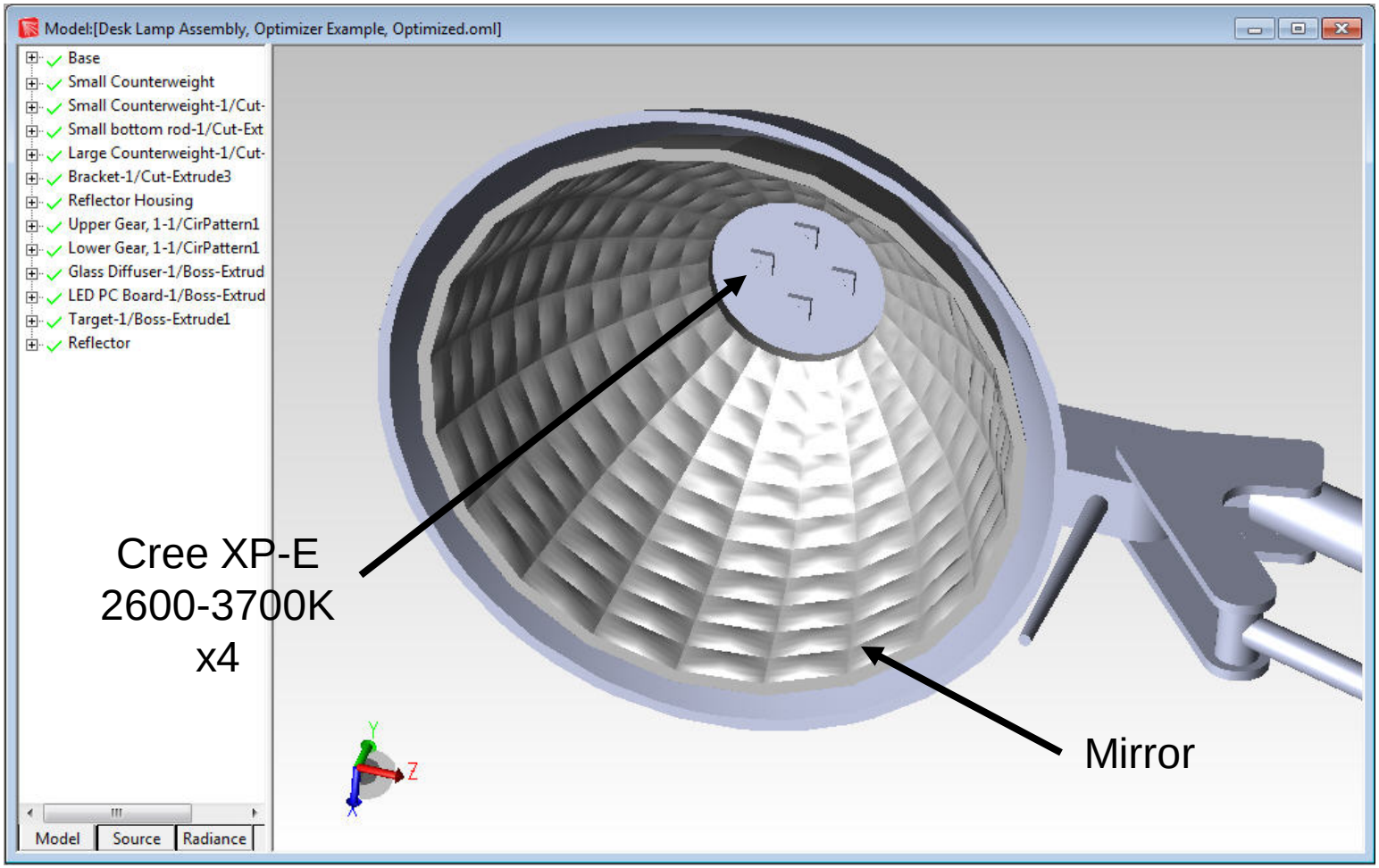
Model Properties



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LED Luminaire Analysis

Live Demonstration

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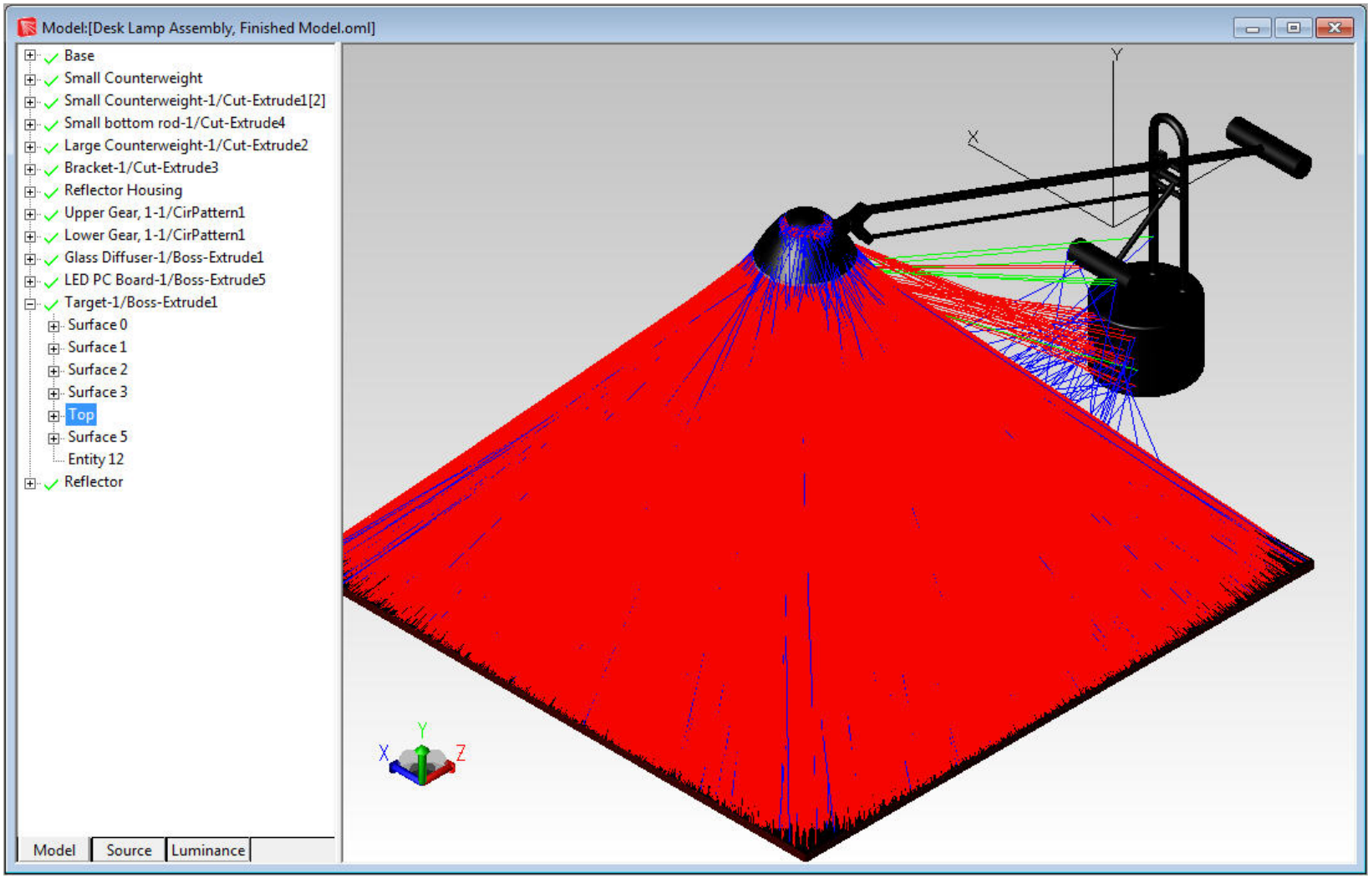
Review of Results

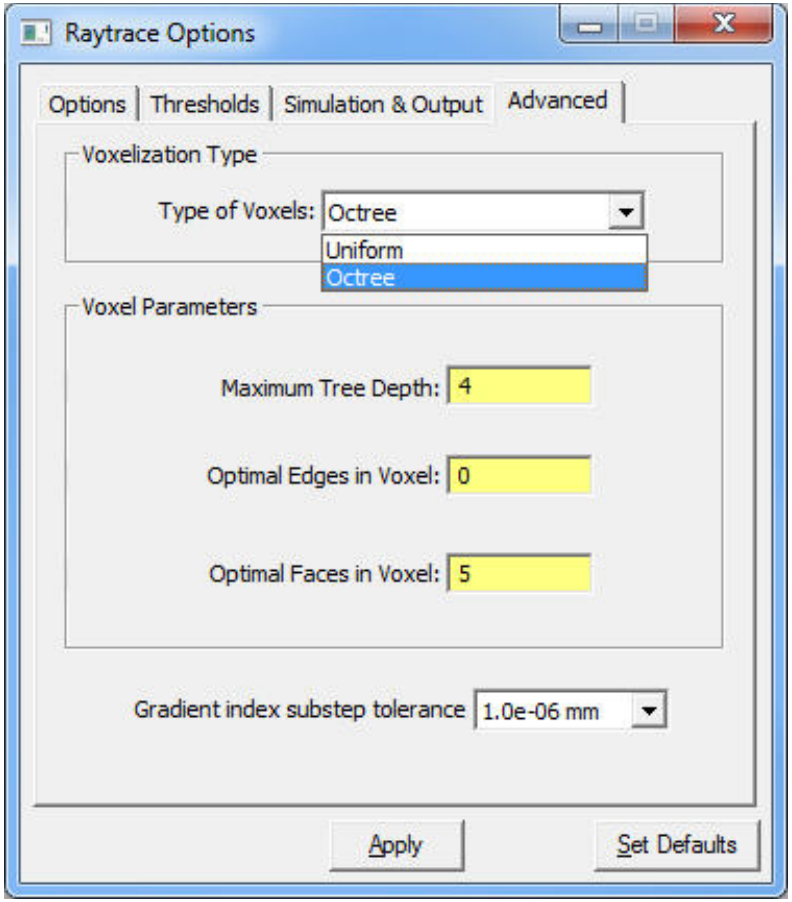


TracePro

Voxel Settings and Raytrace Times

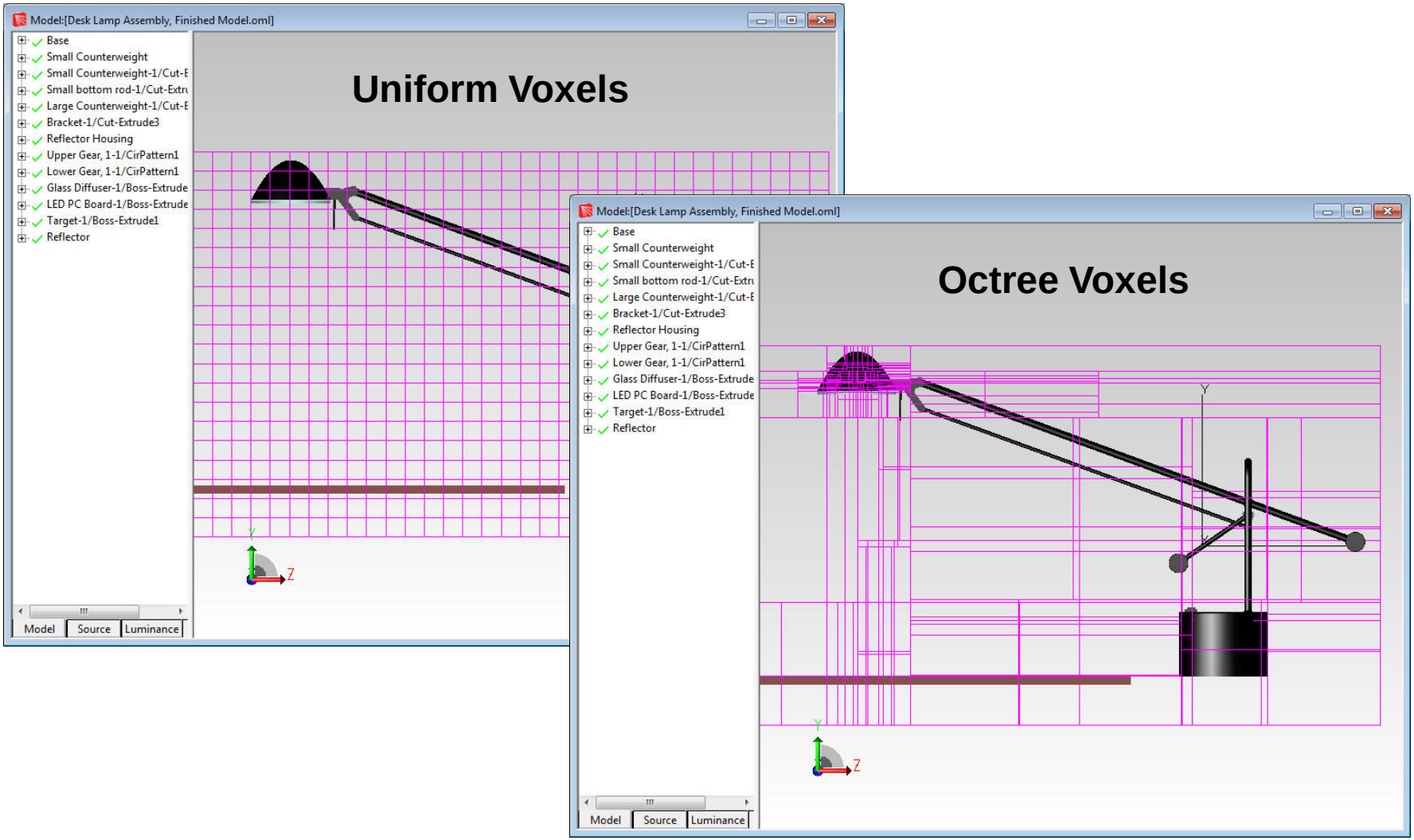
- 2 million rays traced
  - Uniform Voxels – 31 minutes
  - Octree Voxels – 6 minutes
- 4 million rays traced
  - Uniform Voxels – 60 minutes
  - Octree Voxels – 12 minutes

If there is “empty” space in the model, using the Octree voxel setting can decrease raytrace time

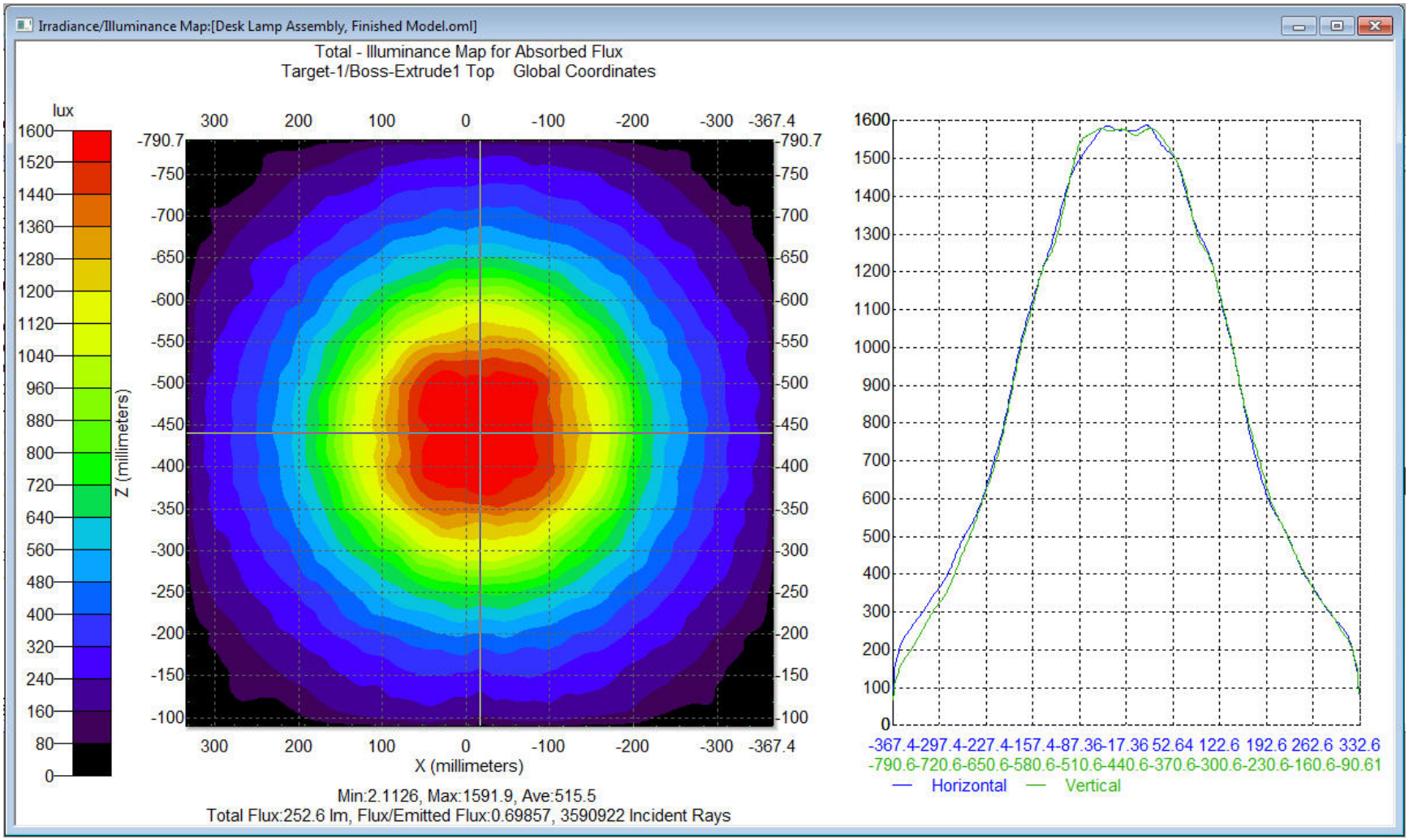


TracePro

Voxel Settings and Raytrace Times

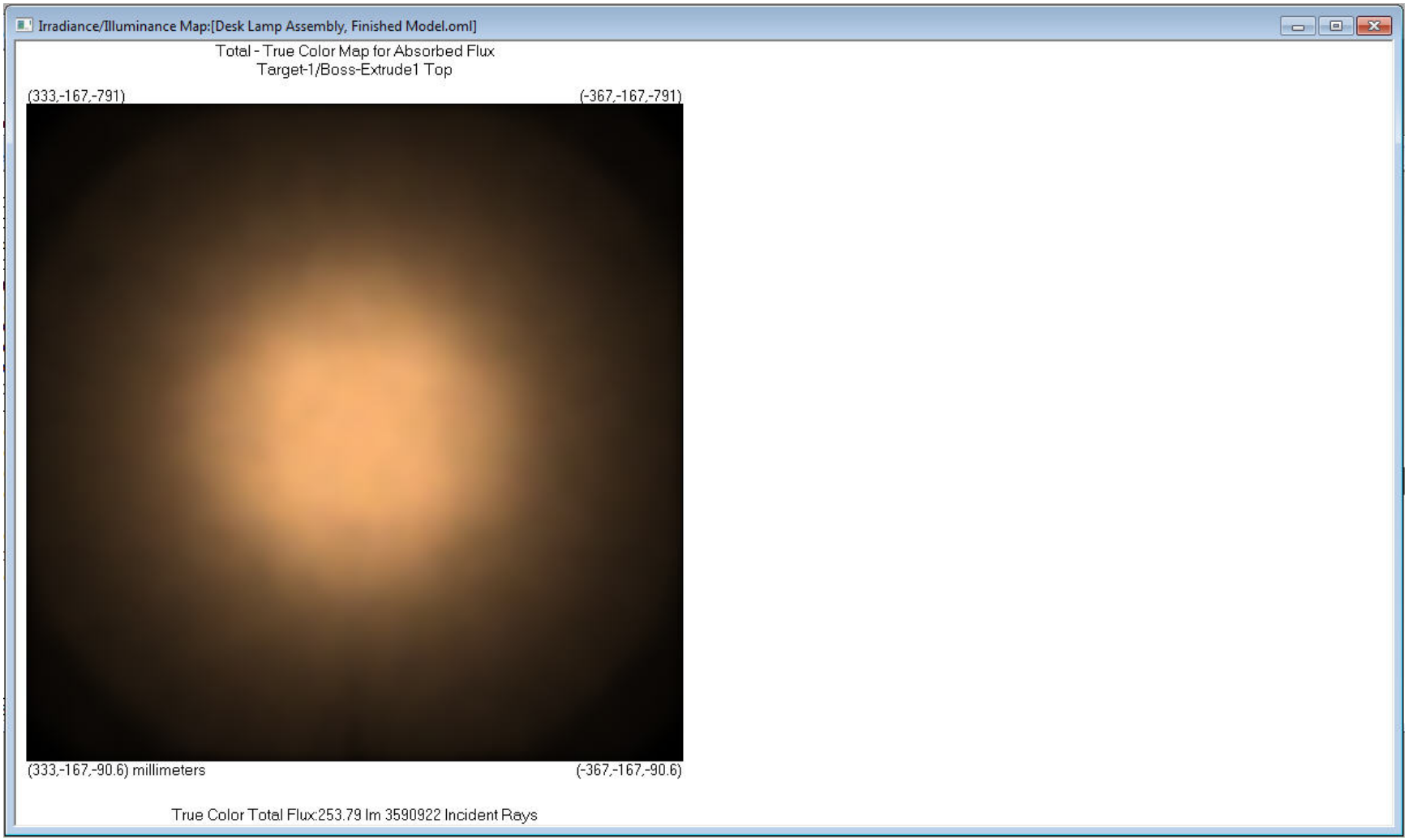


Review of Results – Illuminance Map



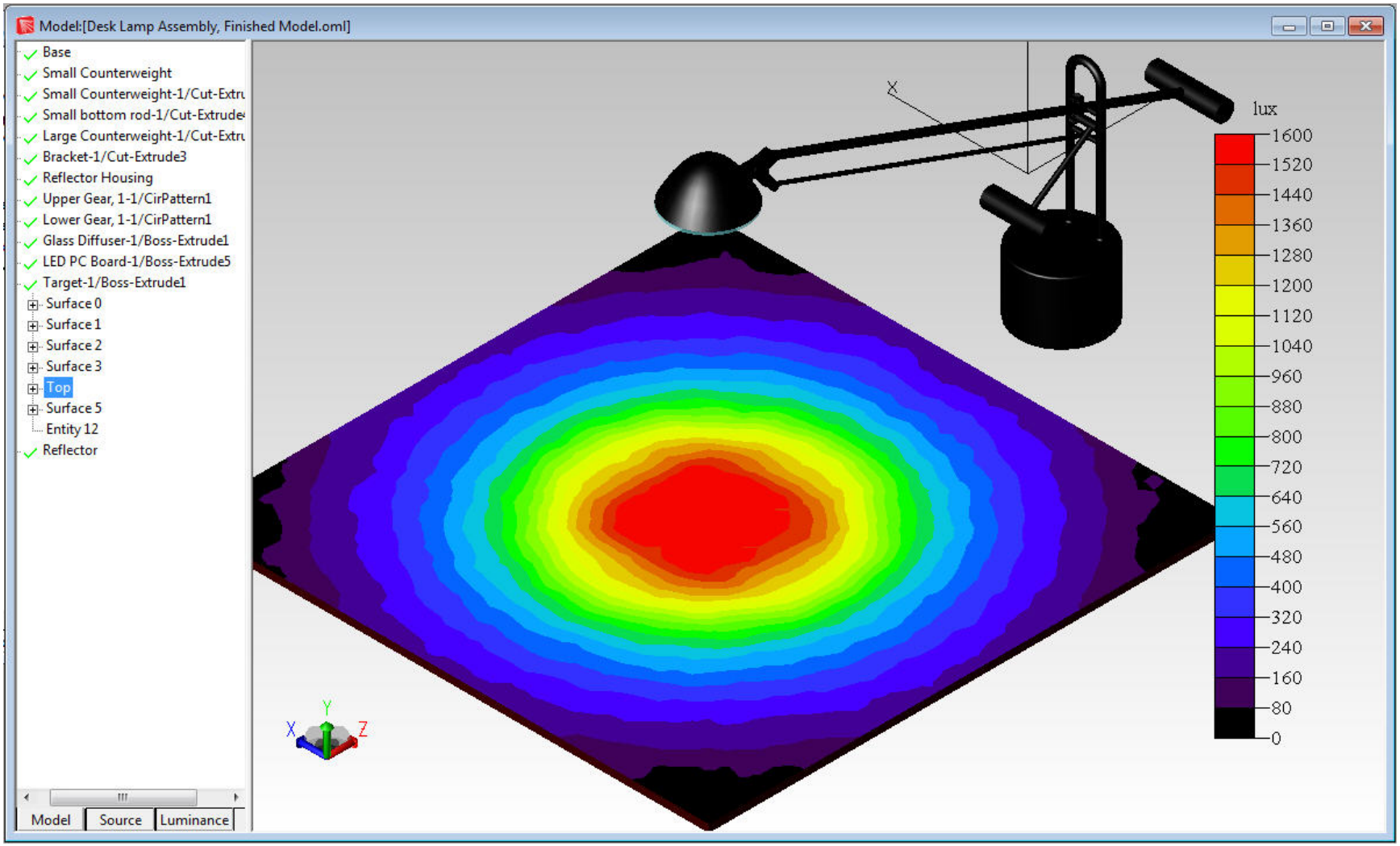
TracePro

Review of Results – Illuminance Map TrueColor



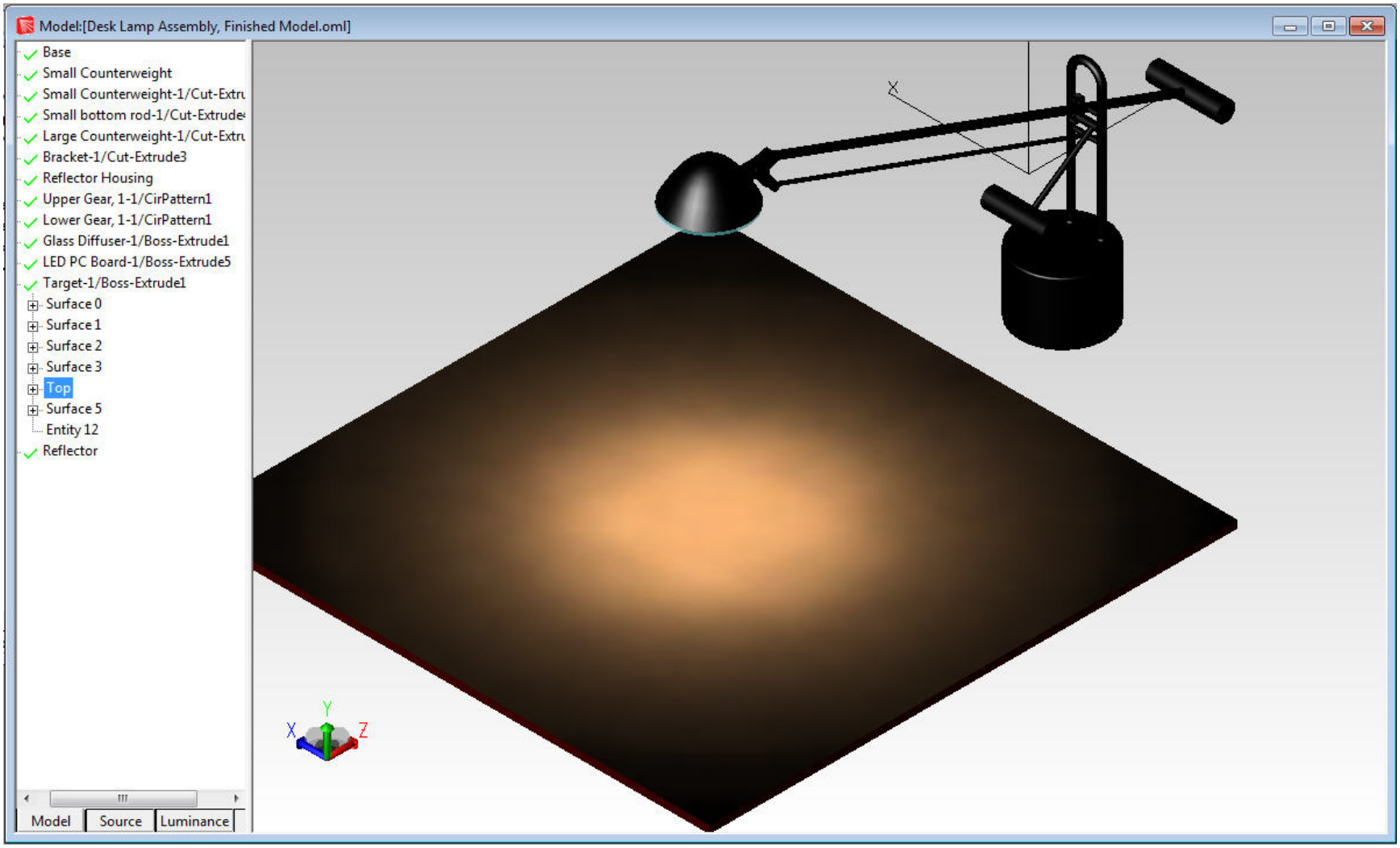
TracePro

Review of Results – 3D Illuminance Map



TracePro

Review of Results – 3D Illuminance Map TrueColor



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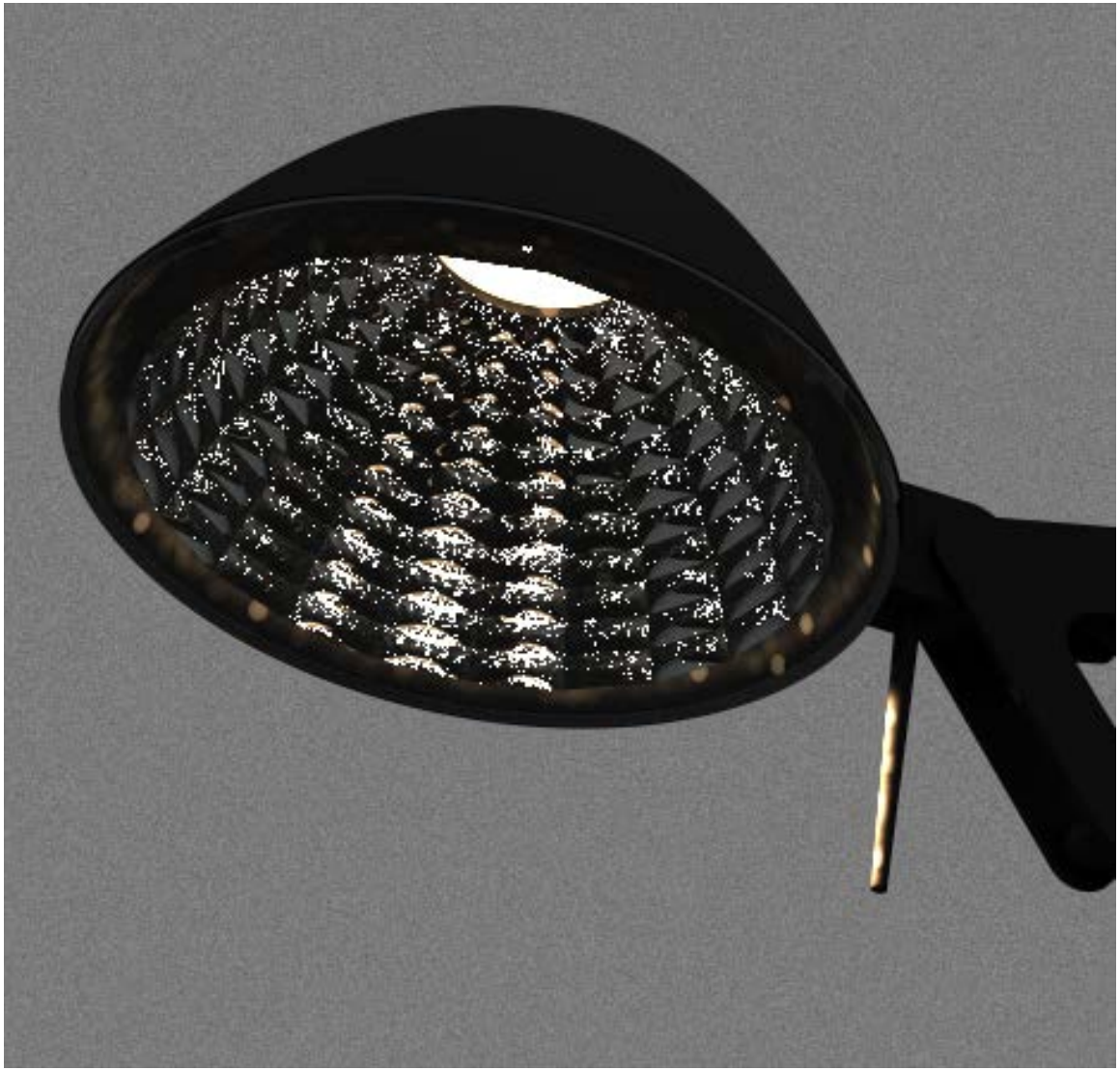
Review of Results – Photorealistic Rendering



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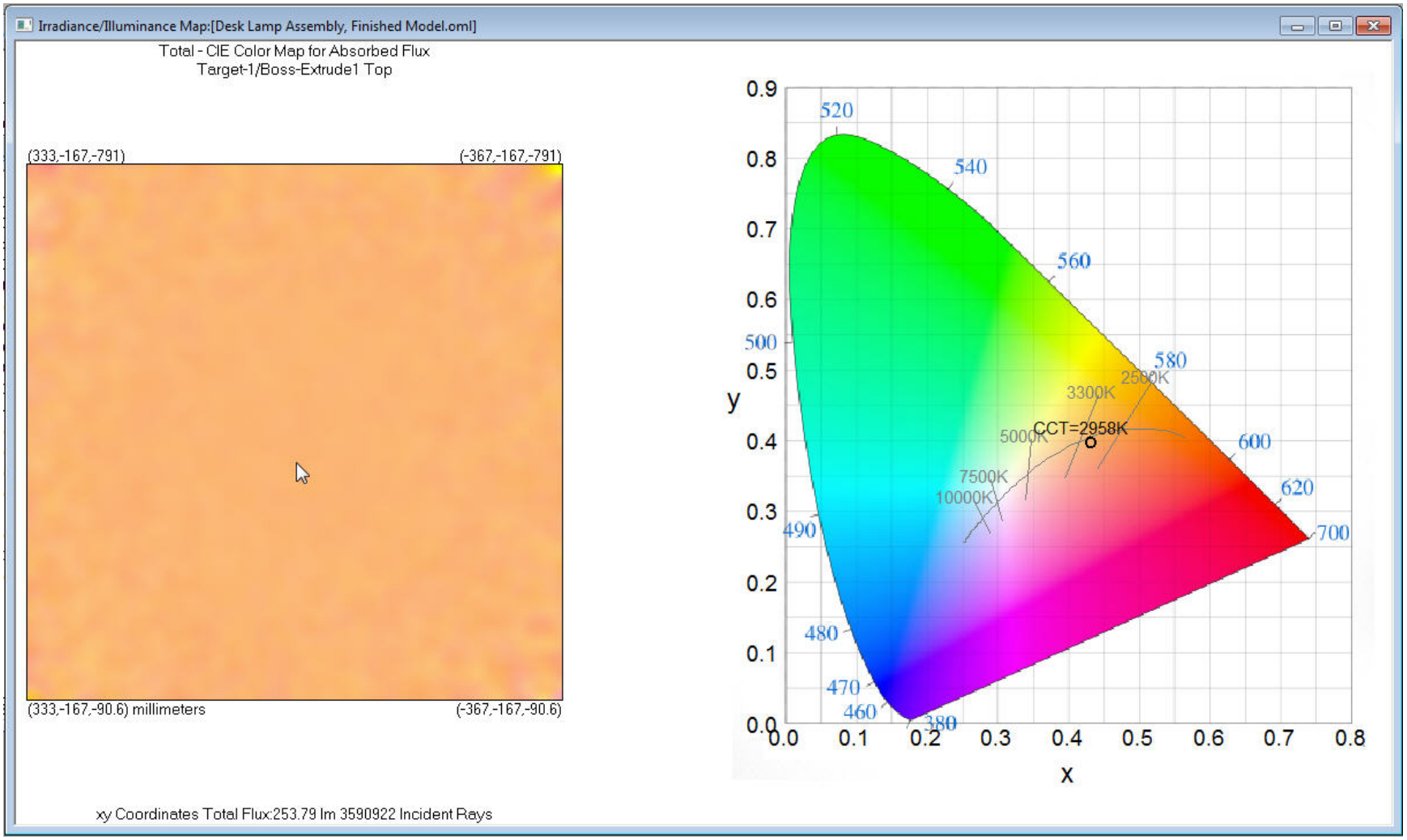
Review of Results – Illuminance Map CIE XY and CCT



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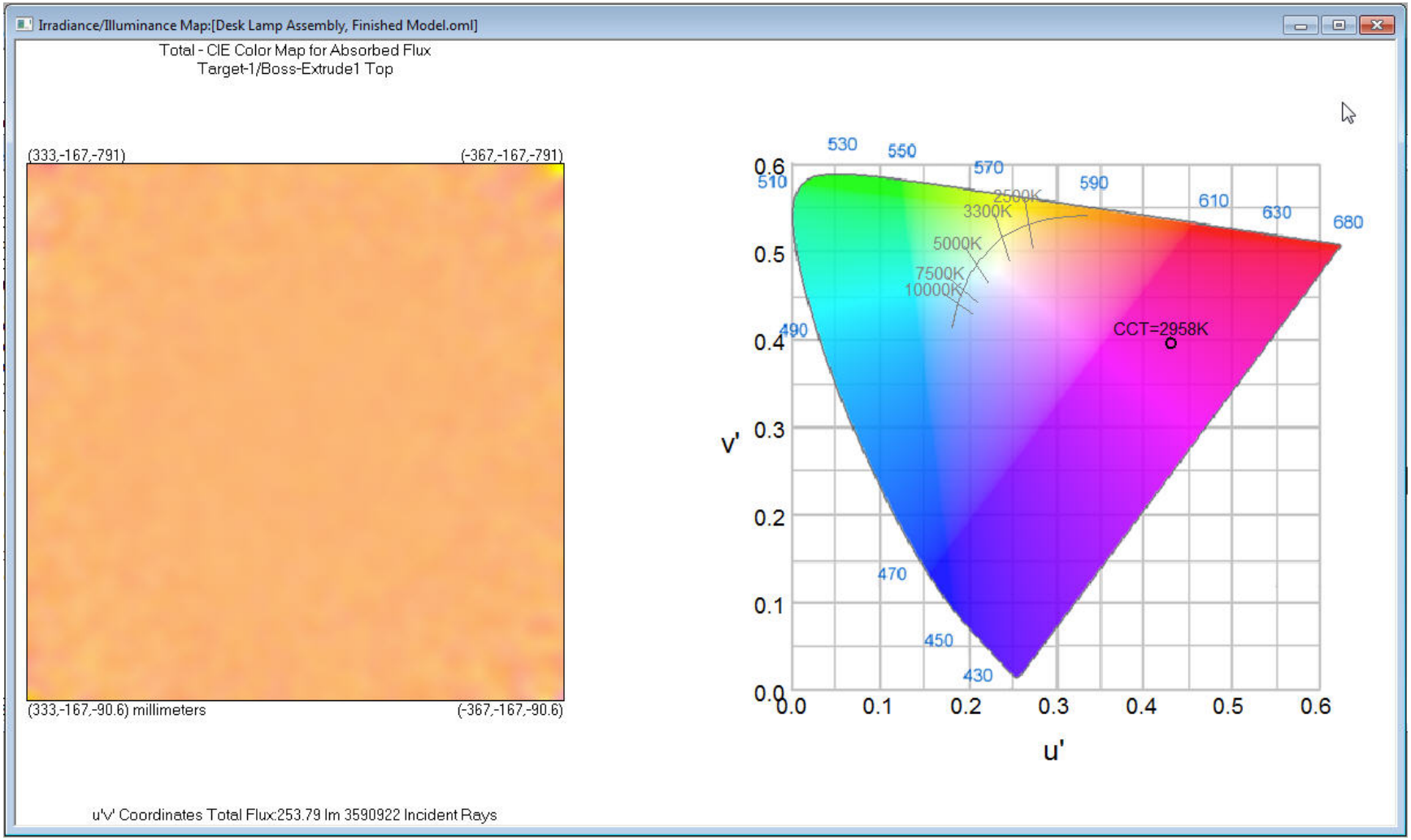
Review of Results – Illuminance Map CIE U'V' and CCT



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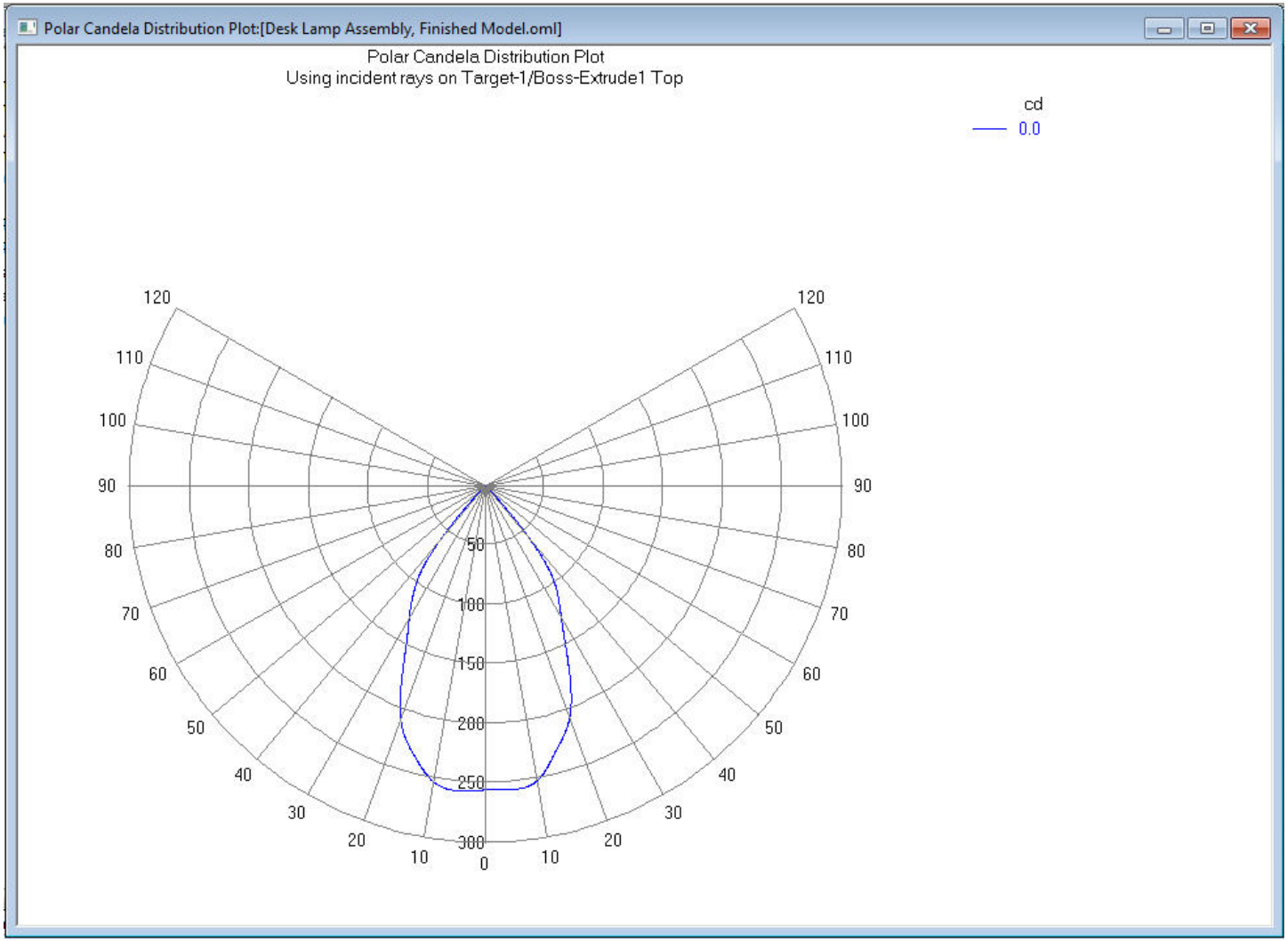
Review of Results – Polar Candela Distribution



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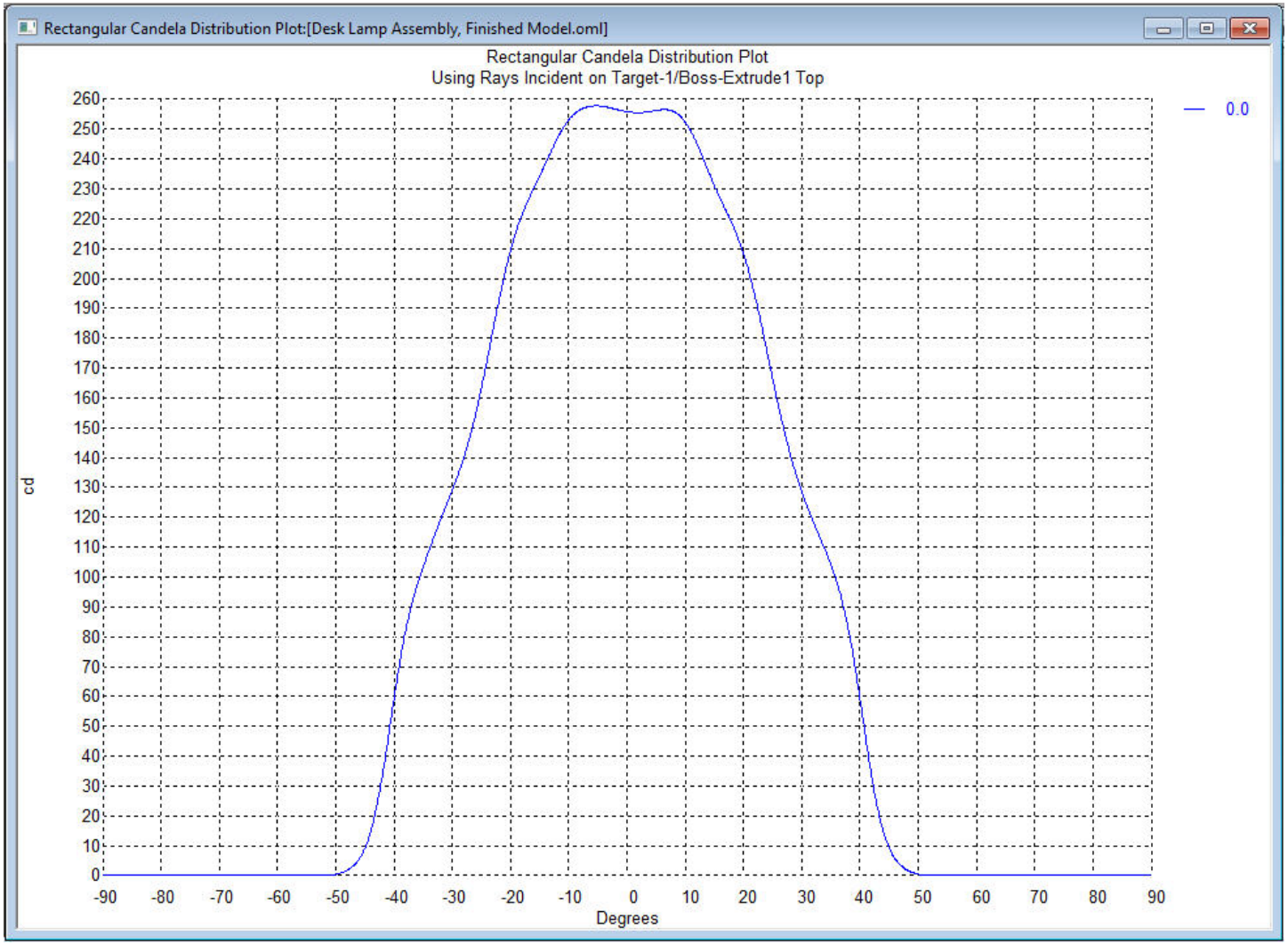
Review of Results – Rectangular Candela Distribution



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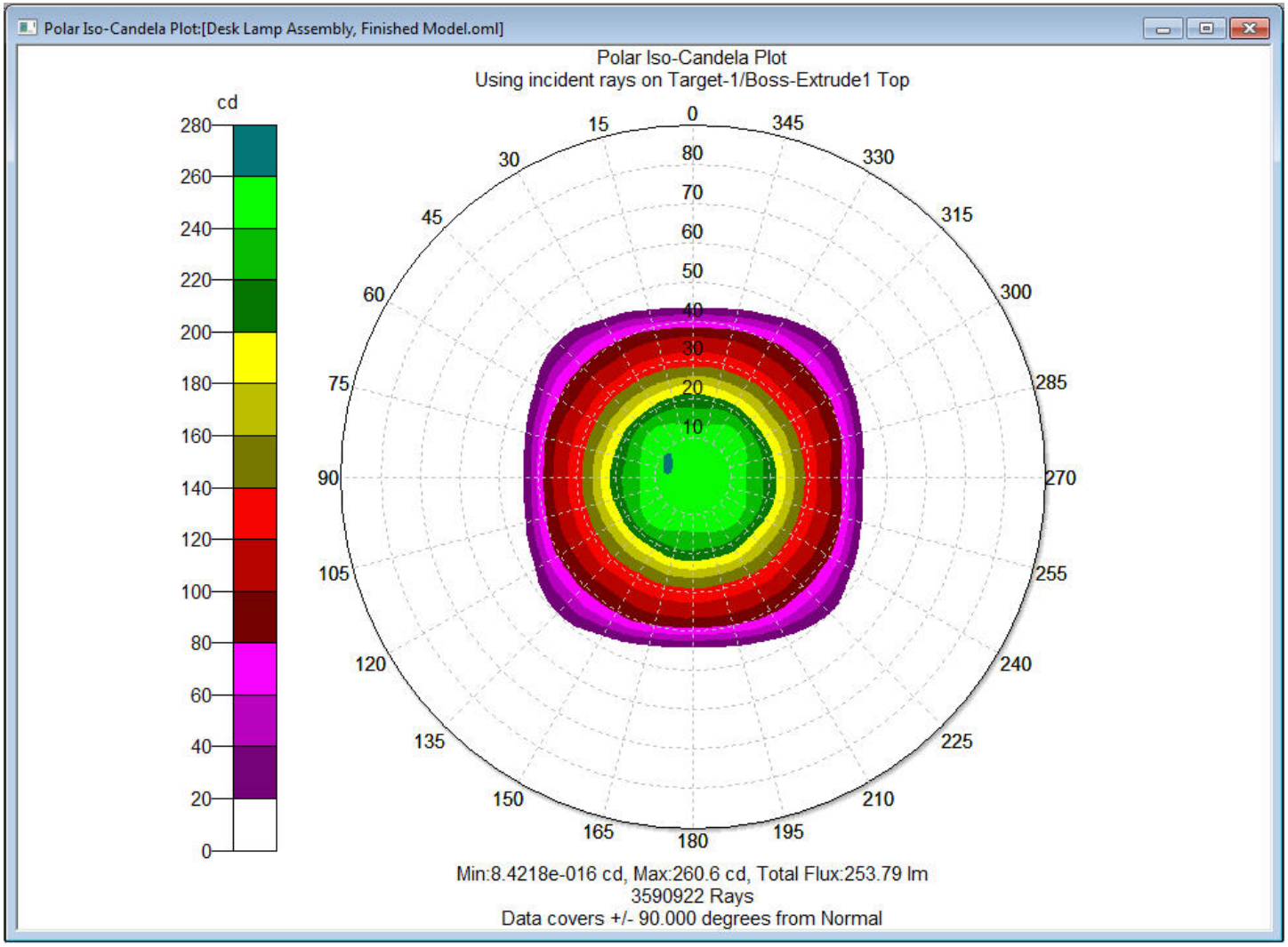
Review of Results – Polar Iso-Candela



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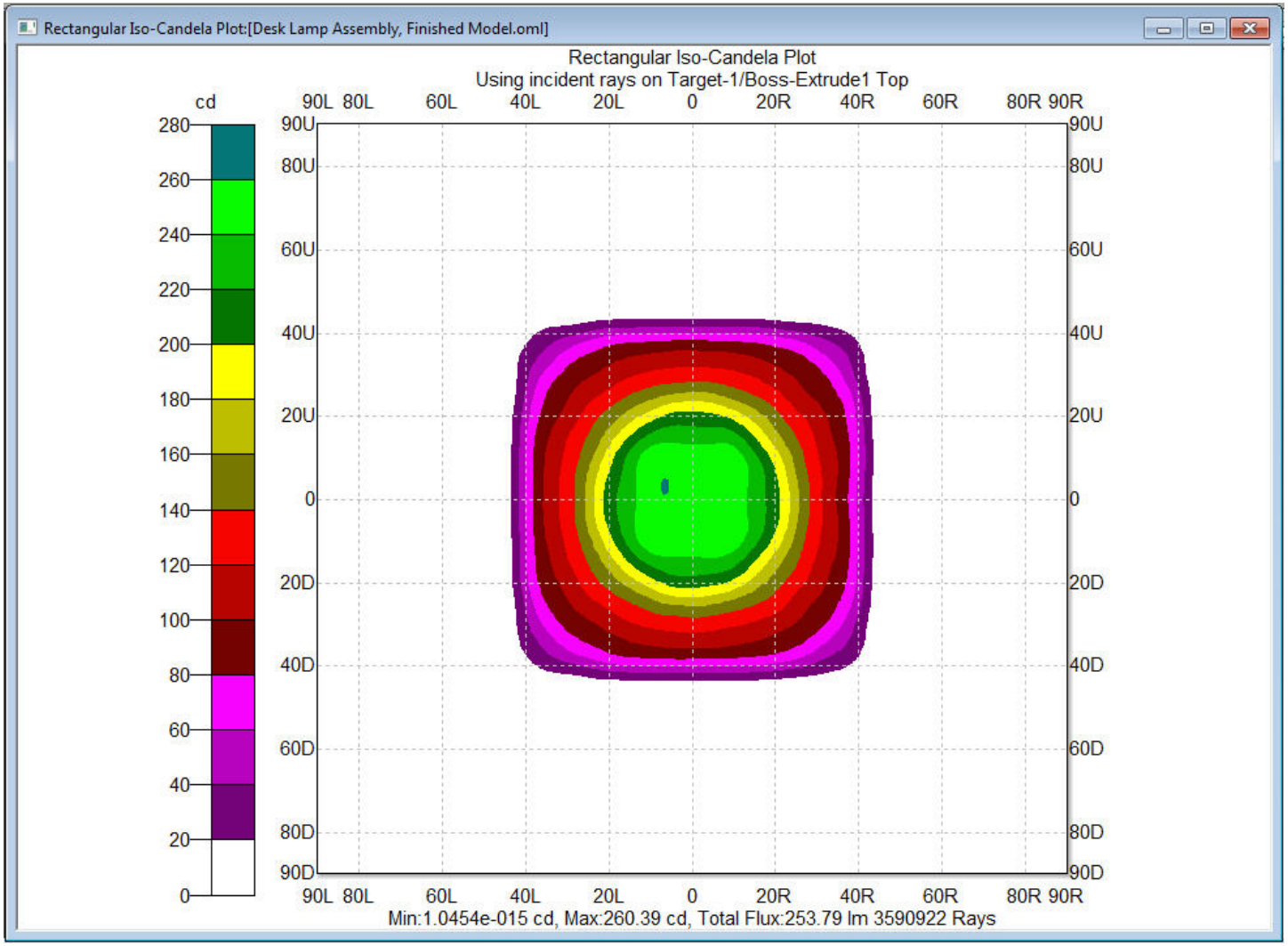
Review of Results – Rectangular Iso-Candela



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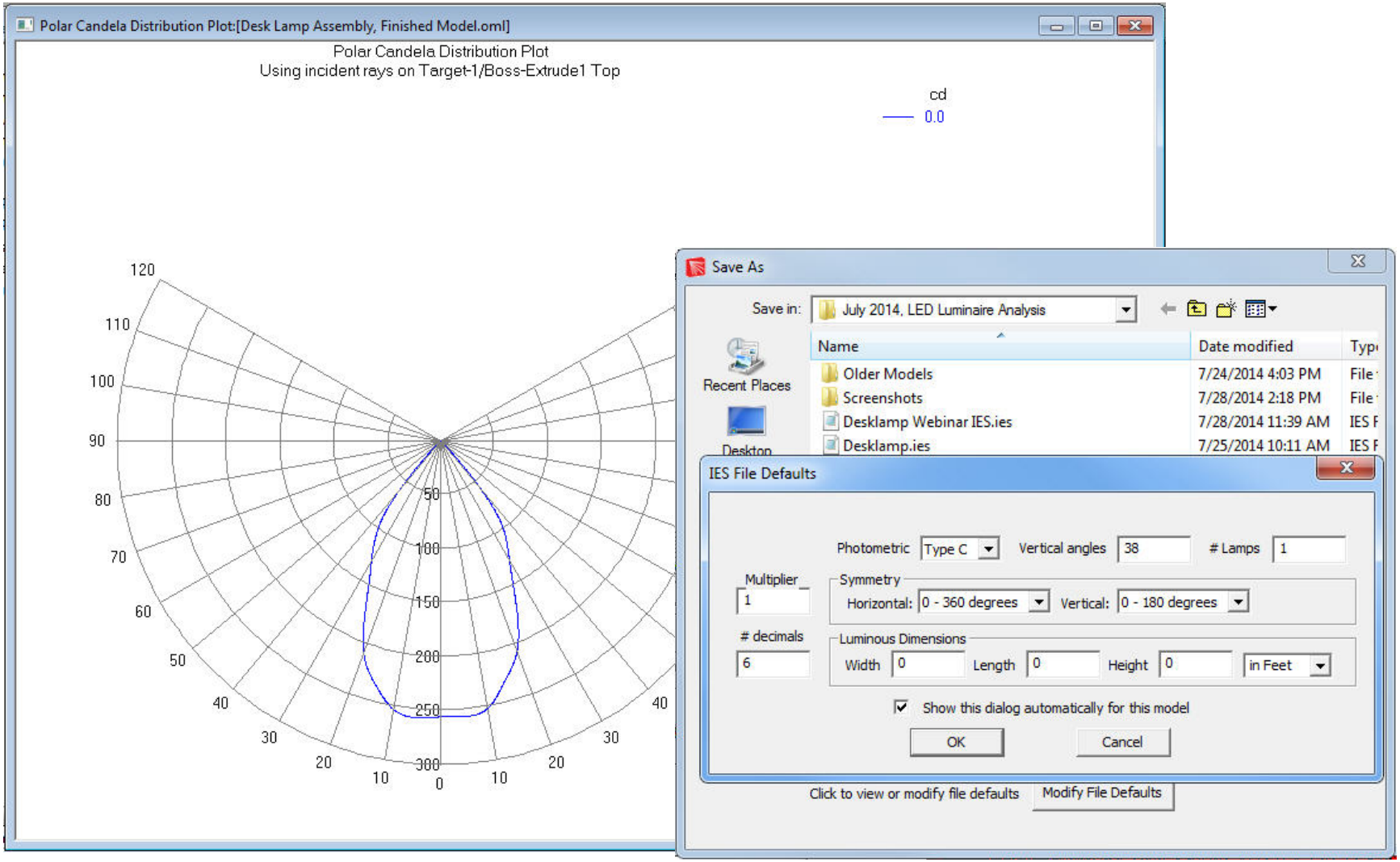
Review of Results – Saving IES File



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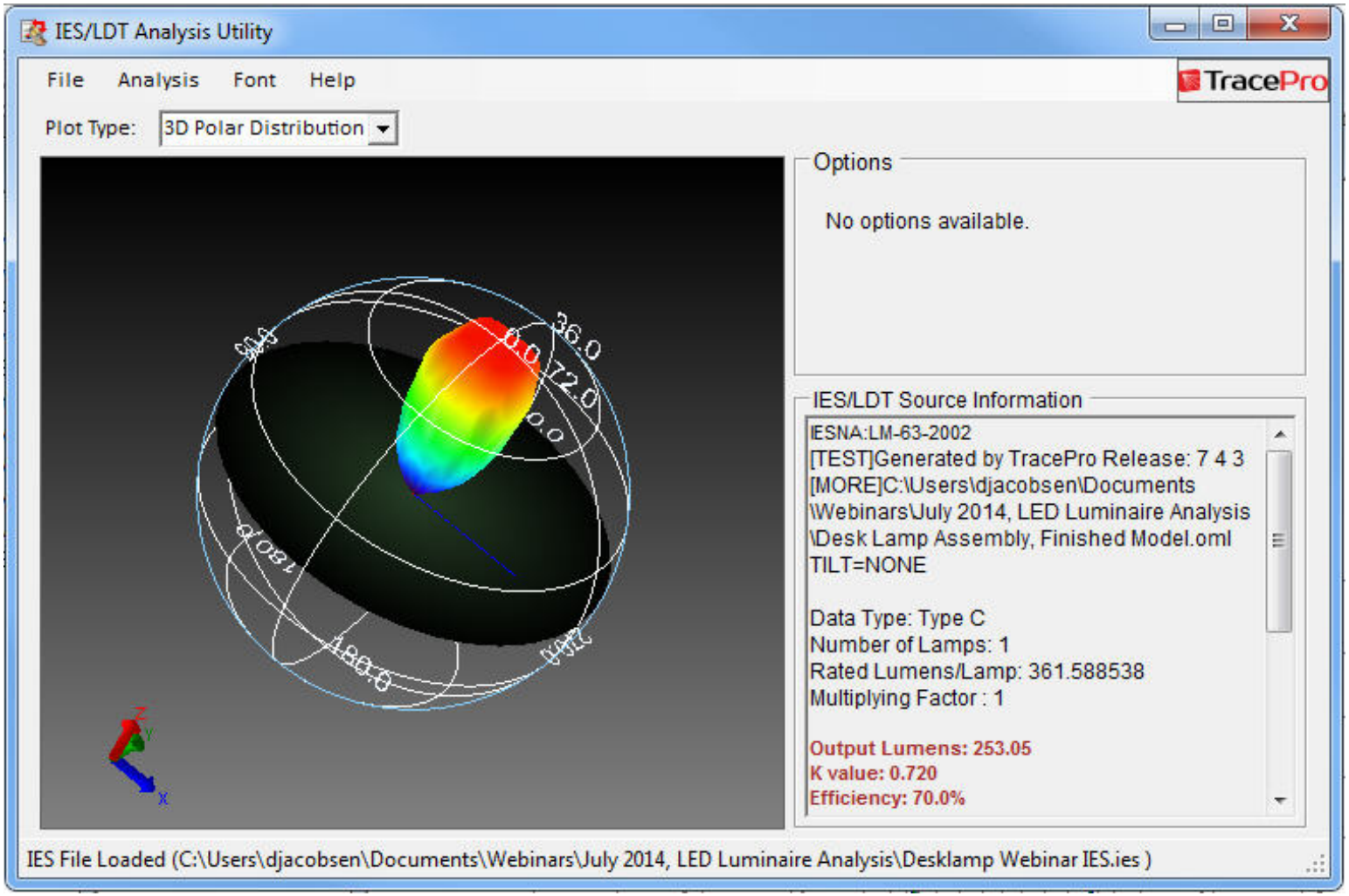
Review of Results – IES/LDT Analysis Utility



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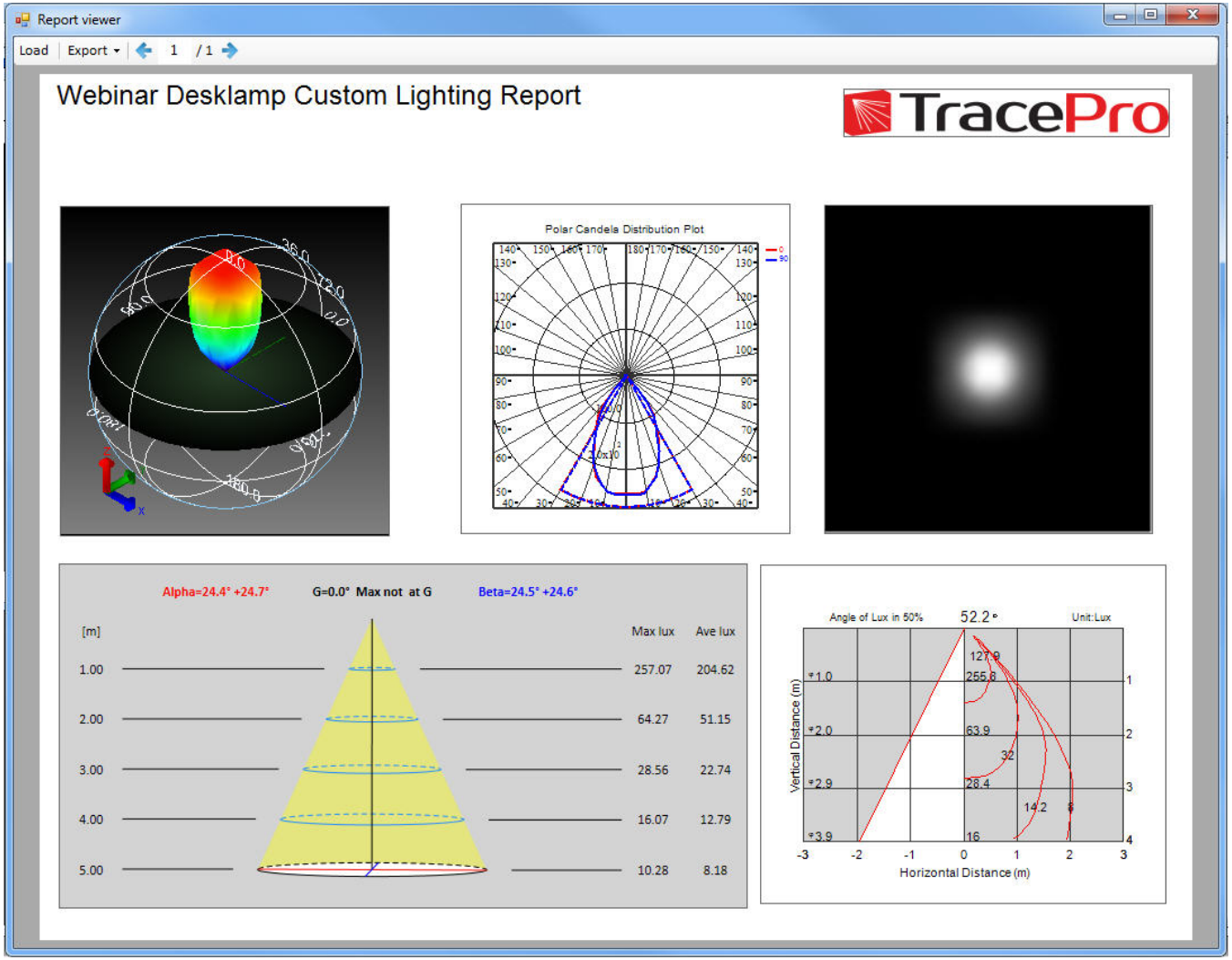
Review of Results – Custom Lighting Report



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Summary and Questions

TracePro streamlines the luminaire analysis process and accelerates product time to market with:

- ✓ The ability to import models in multiple CAD formats as well as the TracePro Bridge for SolidWorks
- ✓ Superior raytracing performance
- ✓ Tools and utilities optimized for the lighting and luminaire designer
- ✓ Powerful 2D and 3D optimization capabilities
- ✓ Comprehensive visualization and analysis tools

For more information or to sign up for our free 30-day trial please visit us at:

www.lambdares.com

Phone: 978-486-0766 E-mail: sales@lambdares.com

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