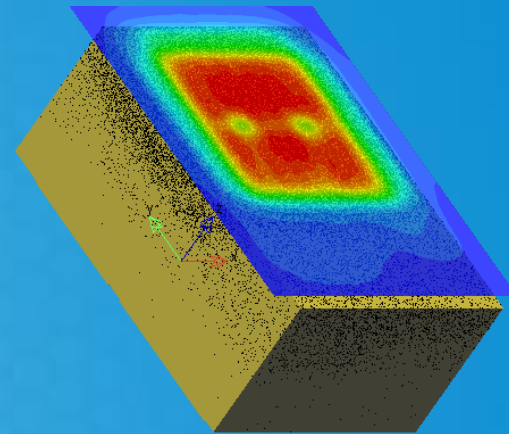


LUXEON IR Compact for Automotive Optical Rayset Readme

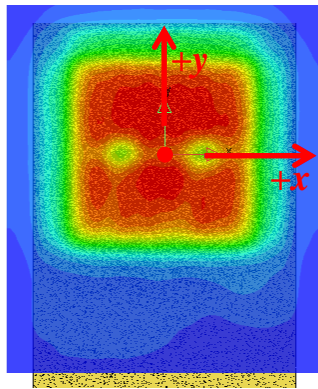
December 17th, 2019



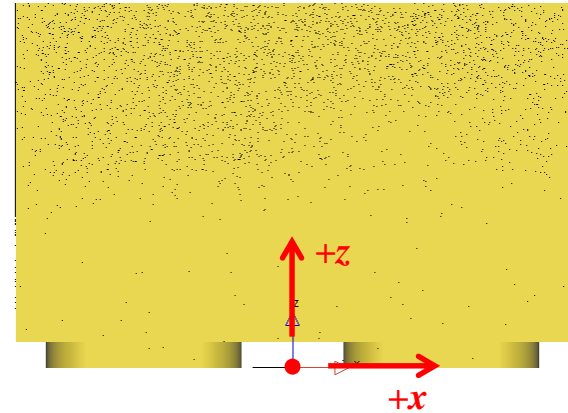
LUXEON IR Compact for Automotive

Coordinate System

Top view



Side view



**CAD file and rayset files share the same coordinate system,
the origin is marked by the red dot in the sketches above:**

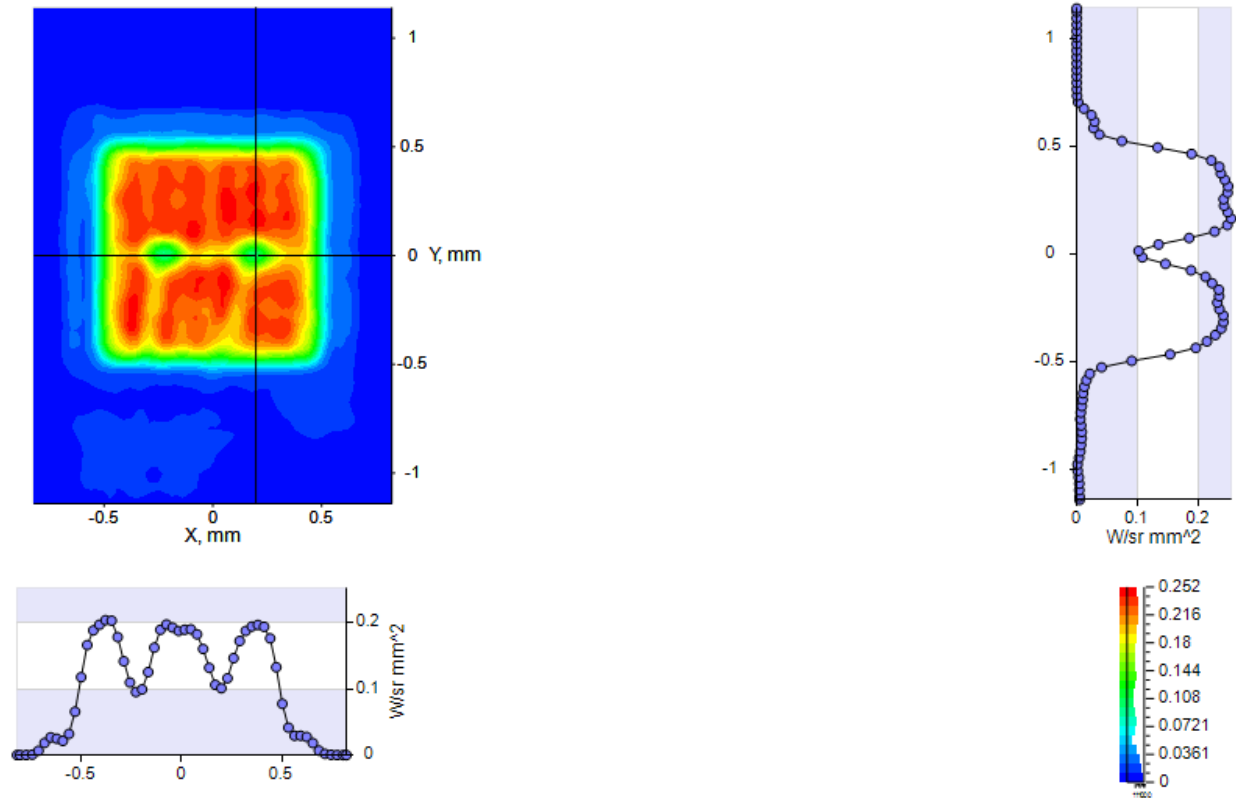
xy center == center of light emitting area

z=0 plane == bottom of package

LUXEON IR Compact for Automotive

Virtual Image of Chip at Z=0.68 mm

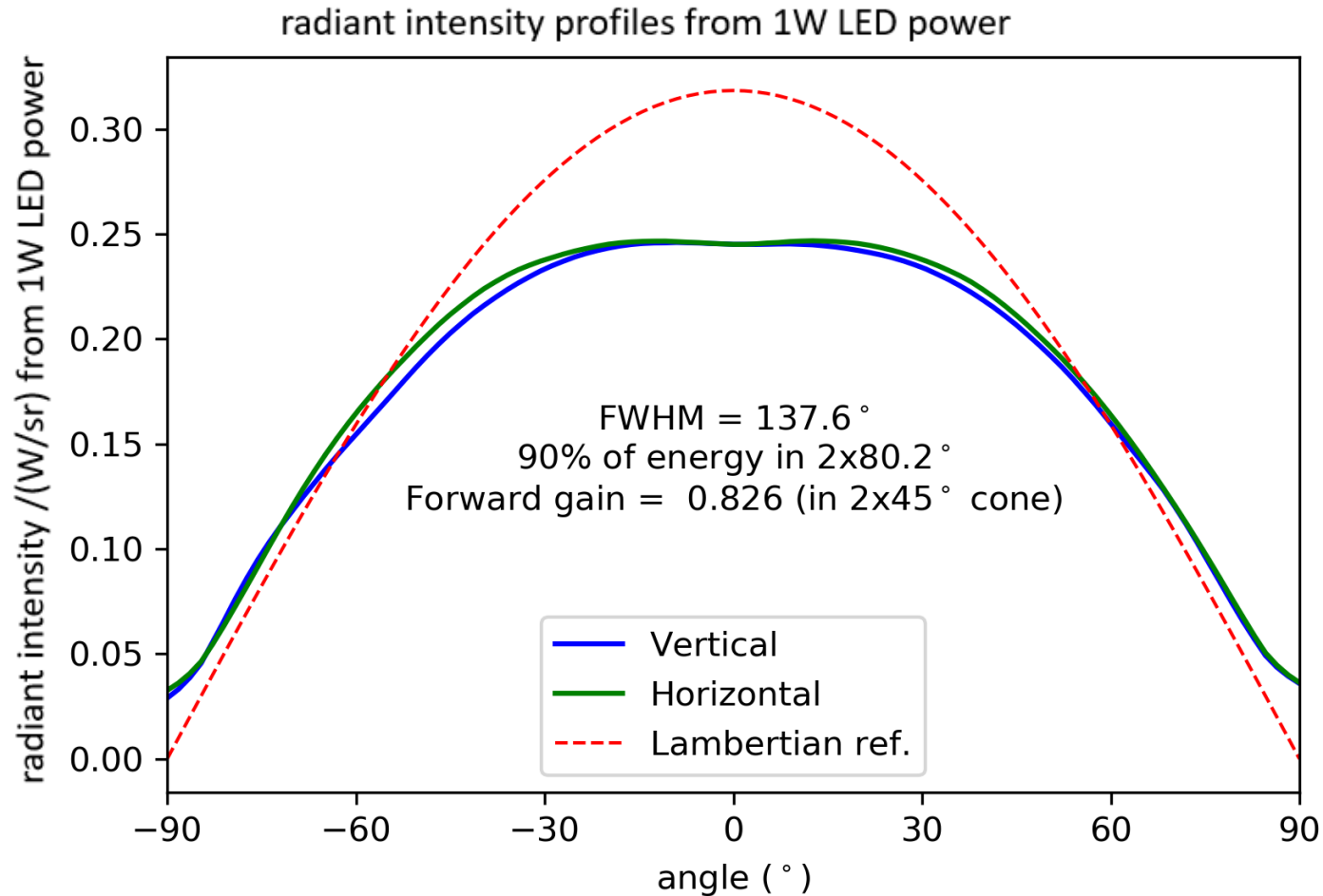
untitled.2 EXIT_REC Forward Simulation
Radiance, W/sr mm²



The two orthogonal lines in the luminance image mark the reference planes of the two luminance cross sections.

LUXEON IR Compact for Automotive

Luminous Intensity Distribution



Download File Nomenclature (see next slide)

Example

LUXEON_Altilon_SMD2_1x4_gen4plus_20190206_20Mray_proj_Z_spectral_LT.ray

Product Name

Reference Date

helps identifying underlying dataset

Number of rays

e.g. 20 M = $20 \cdot 10^6$ rays

Ray starting points

'proj' indicates that ray starting points have been **projected** onto the CAD surface (---).

Spectral range

$\begin{Bmatrix} Y \\ Z \\ - \end{Bmatrix} = \begin{Bmatrix} \text{only yellow} \\ \text{only blue} \\ \text{full} \end{Bmatrix}$ spectrum taken into account

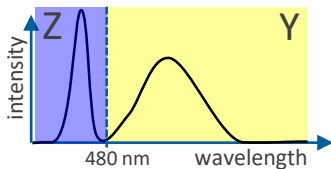
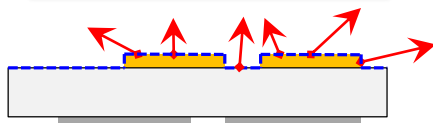
Spectral Information

$\begin{Bmatrix} \text{spectral} \\ - \end{Bmatrix} = \text{individual rays } \begin{Bmatrix} \text{do} \\ \text{don't} \end{Bmatrix} \text{ carry wavelength information}$

Target Software Package

LightTools (LT), ASAP, Zemax, ...

File Extension



Additional Application Notes

Randomization

In some cases, reducing the number of rays in a rayset might be desirable. In order to facilitate the generation of reduced raysets, **all raysets mentioned in this readme file are randomized**. Hence, a rayset having 5 million rays (5M) can simply be generated by taking the first 5M rays from 20M rayset.

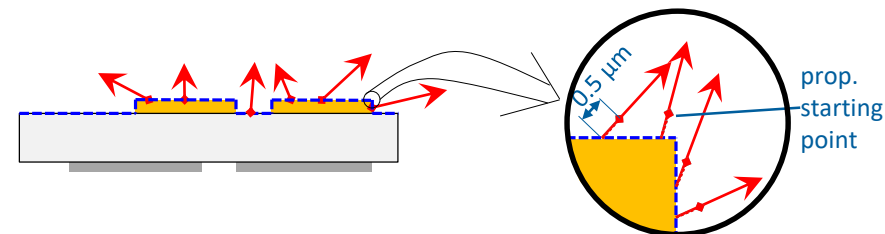
Projected Raysets: Propagated ray starting points

For projected raysets, the following procedure is applied for obtaining the starting points:

- (1) Project rays on CAD surface (---) → ray starting points
- (2) Propagate rays by 0.5 μm → propagated starting points (•)

All raysets mentioned in this readme file provide propagated starting points.

If raytracing includes the LED CAD, unpropagated rays are prone to be blocked at the surface. Rays with propagated starting points should not suffer from this problem.



LUXEON IR Compact for Automotive

Link to download folder

<https://raysets.lumileds.com/index.php/s/gYg4rrJxZH4wwBd>

Files available for download

LightTools

Projected	LUXEON_IR_Compact_Automotive_20191217_20MRays_proj_LT.ray	477 MB	20MRays
Spectral projected	LUXEON_IR_Compact_Automotive_20191217_20MRays_proj_spectral_LT.ray	545 MB	20MRays

ASAP & LucidShape

Projected	LUXEON_IR_Compact_Automotive_20191217_20MRays_proj_ASAP.dis	477 MB	20MRays
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OPTIS SPEOS

Spectral projected	LUXEON_IR_Compact_Automotive_20191217_20MRays_proj_spectral_Speos.ray	545 MB	20MRays
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Zemax

Projected	LUXEON_IR_Compact_Automotive_20191217_20MRays_proj_zemax.dat	477 MB	20MRays
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Far Field

IES	LUXEON_IR_Compact_Automotive_20210121_20MRays.ies	25.5 kB	
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Spectrum

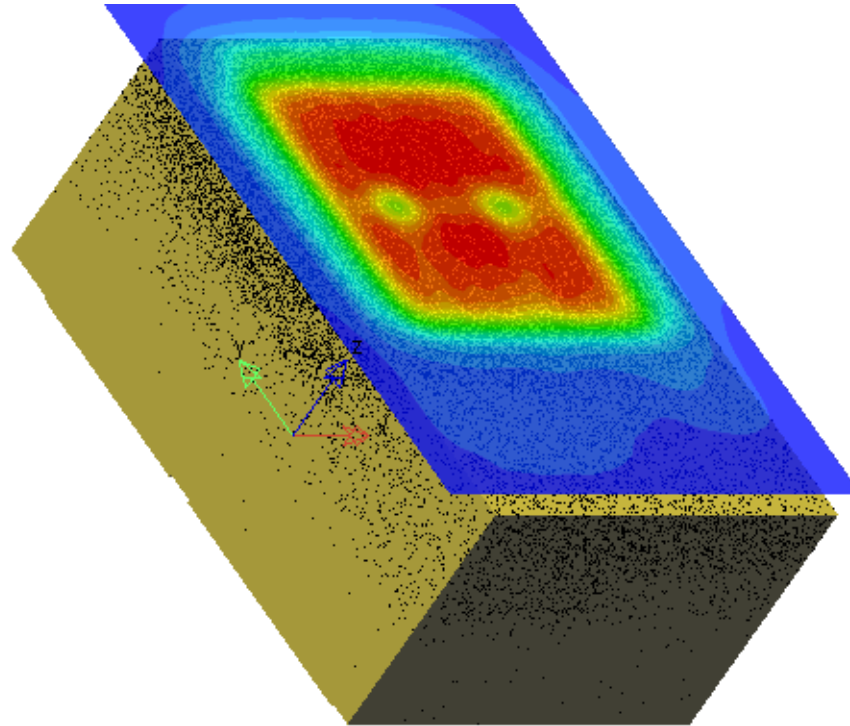
Spectrum	Spectrum_IRAuto_940_25DC_1A.txt	17.4 kB	
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CAD

STEP	20191217_LUXEON_IRCompact_Automotive_Dummy_for_Raysets.stp	57.3 kB	
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LUXEON IR Compact for Automotive

3D CAD view + ray starting points



Lumileds ref.: SJ000927_0927_LUXEON IR Compact for Automotive_20191217



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