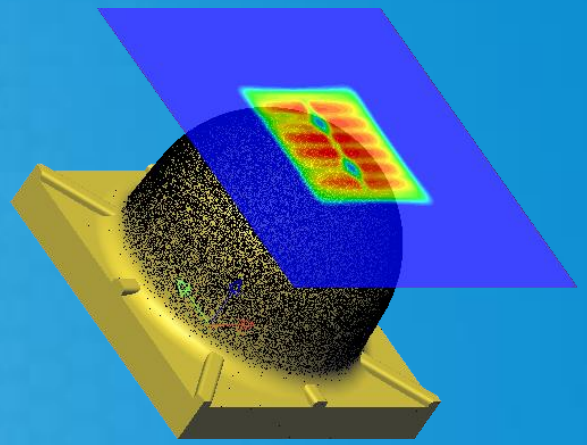
LUXEON IR Domed for Automotive 90D

Optical Rayset Readme

December 6th, 2019



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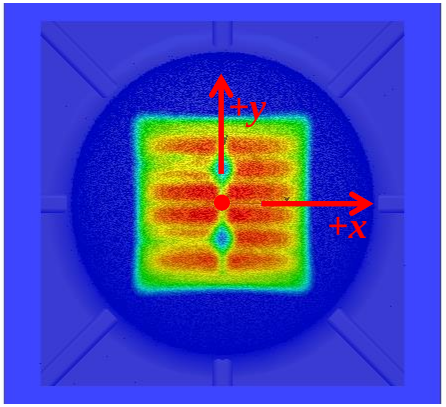
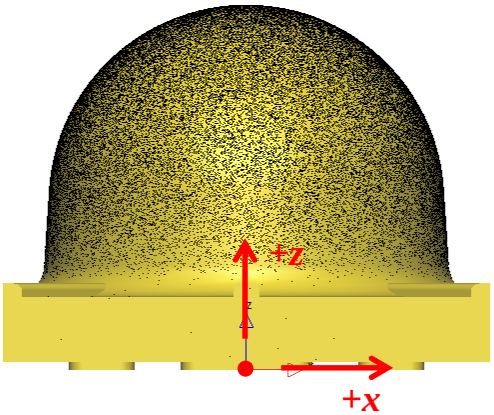
Coordinate System

Top view



Side view



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

xy center == center of light package

z=0 plane == bottom of package

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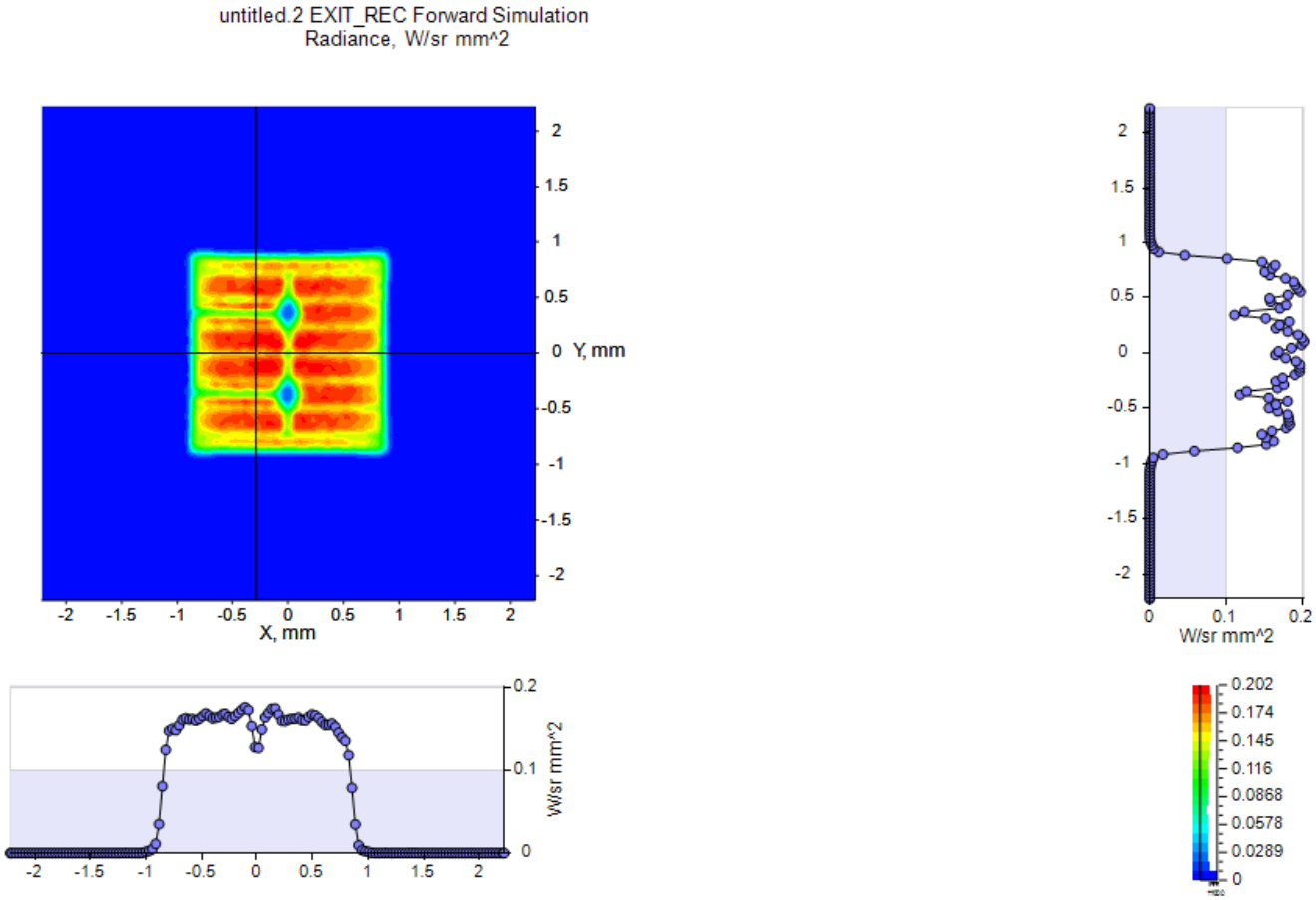
Virtual Image of Chip at Z=0.2 mm



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

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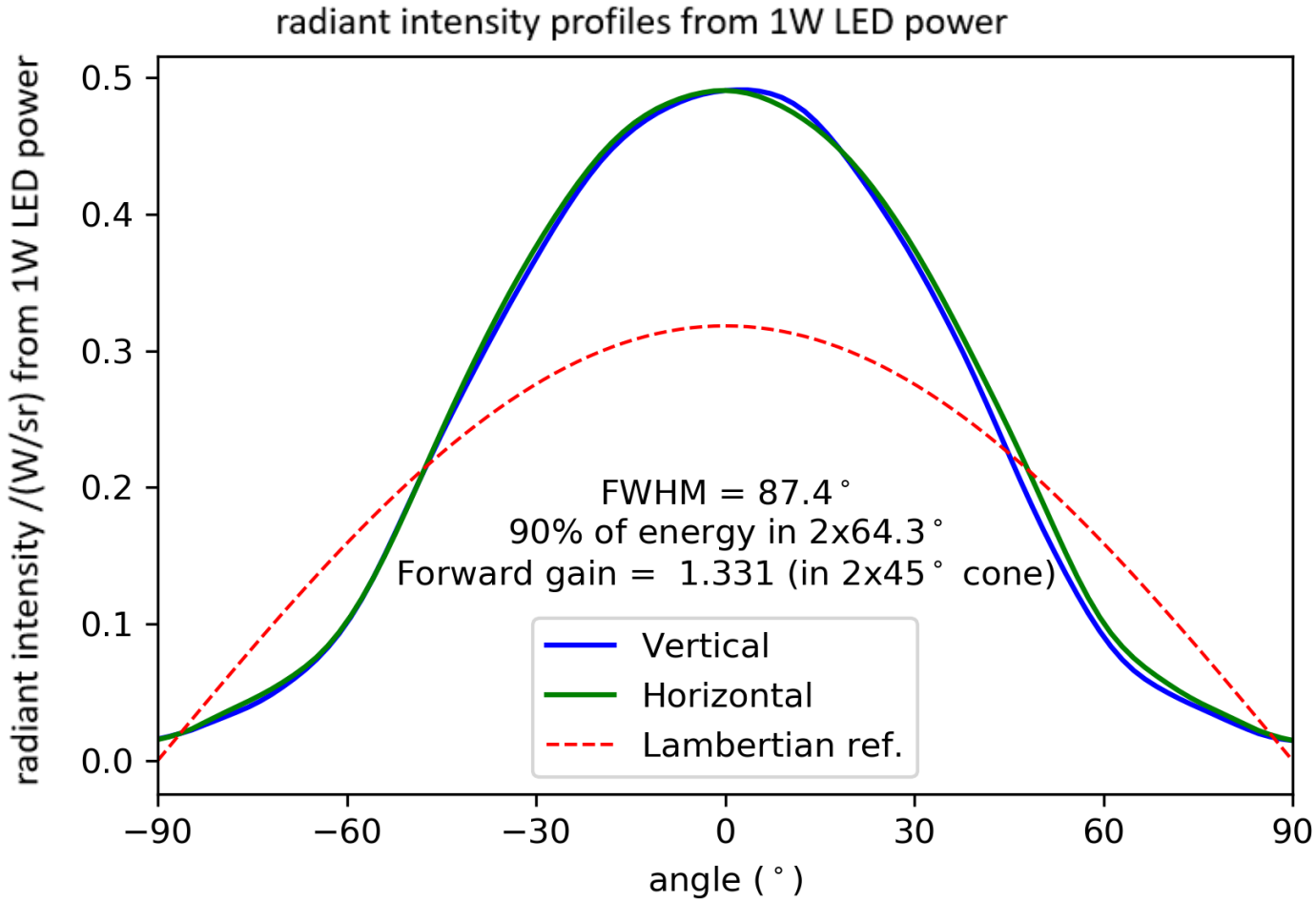
Radiant Intensity Distribution



Download File Nomenclature (see next slide)

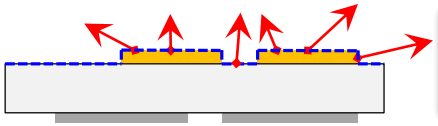
Example

LUXEON_Altilon_SMD2_1x4_gen4plus_20190206_20Mray_proj_Z_spectral_LT.ray

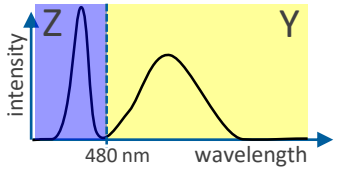
Product Name

Reference Date
helps identifying underlying dataset

Number of rays
e.g. 20 M = 20 · 10^6 rays



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



Spectral range

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

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

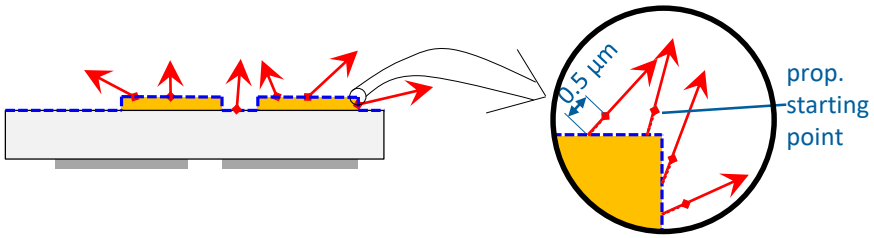
For projected raysets, the following procedure is applied for obtaining the starting points:

(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.



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Link to download folder

https://raysets.lumileds.com/index.php/s/PtsrnJJJ2ZdKHay

Files available for download

Prosource

RS8	LUXEON_IR_Domed_Automotive_90D_20191206_1187.rs8	82.0 MB	

LightTools

Projected	LUXEON_IR_Domed_Automotive_90D_20191206_20MRays_proj_LT.ray	534 MB	20MRays
Spectral projected	LUXEON_IR_Domed_Automotive_90D_20191206_20MRays_proj_spectral_LT.ray	610 MB	20MRays

ASAP & LucidShape

Projected	LUXEON_IR_Domed_Automotive_90D_20191206_20MRays_proj_ASAP.dis	534 MB	20MRays

OPTIS SPEOS

Spectral projected	LUXEON_IR_Domed_Automotive_90D_20191206_20MRays_proj_spectral_Speos.ray	610 MB	20MRays

Zemax

Projected	LUXEON_IR_Domed_Automotive_90D_20191206_20MRays_proj_zemax.dat	534 MB	20MRays

Far Field

IES	LUXEON_IR_Domed_Automotive_90D_20191206_20MRays.ies	10.1 kB	

Spectrum

Spectrum	Spectrum_IRAuto_940_25DC_1A.txt	17.4 kB	

CAD

STEP	LUXEON_IR_Domed_Automotive_90D_20191206_Dummy_for_Raysets.stp	242 kB	
IGES	LUXEON_IR_Domed_Automotive_90D_20191206_Dummy_for_Raysets.IGS	270 kB	

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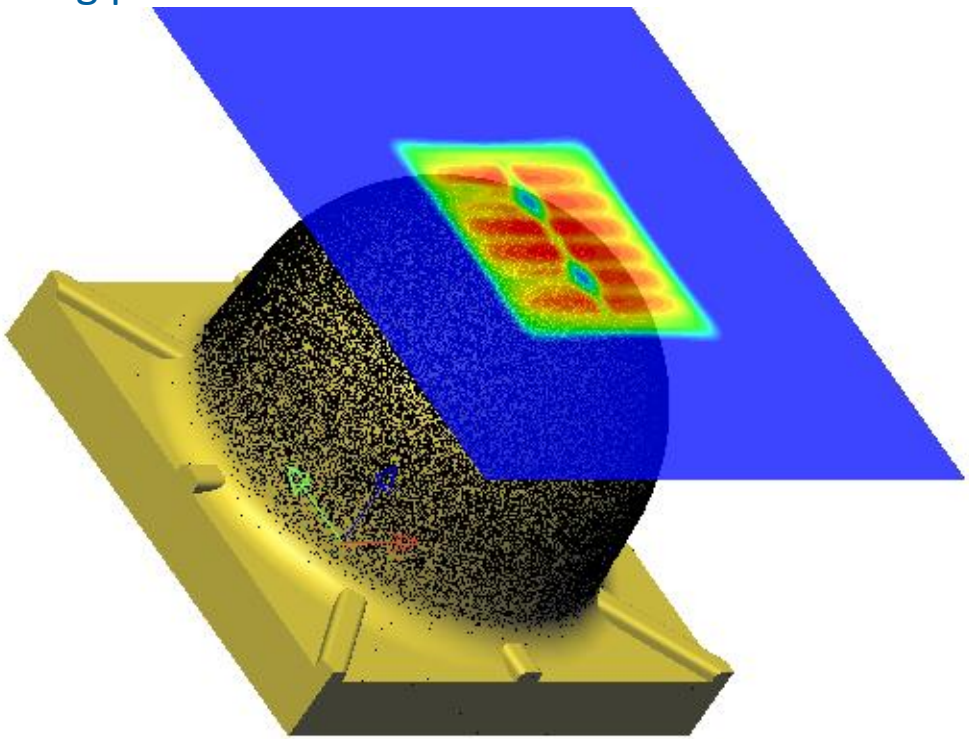
3D CAD view + ray starting points



Lumileds ref.: SJ001187_LUXEON IR Domed For Automotive 90D_20191206

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