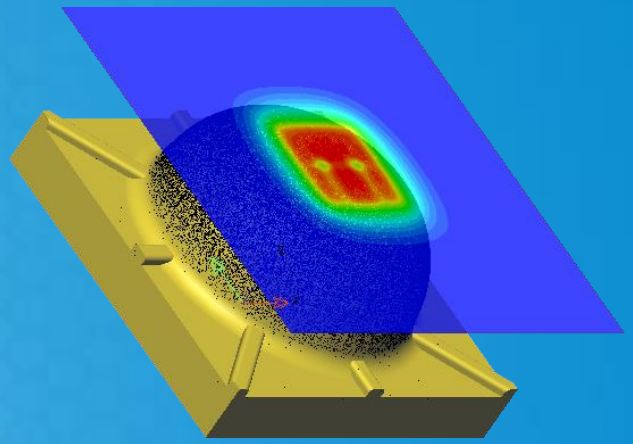
LUXEON IR Domed for Automotive 145D

Optical Rayset Readme

November 7th, 2019



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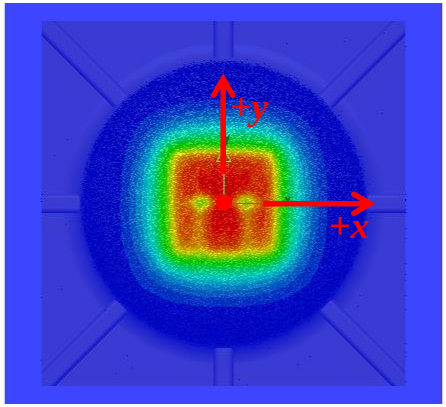
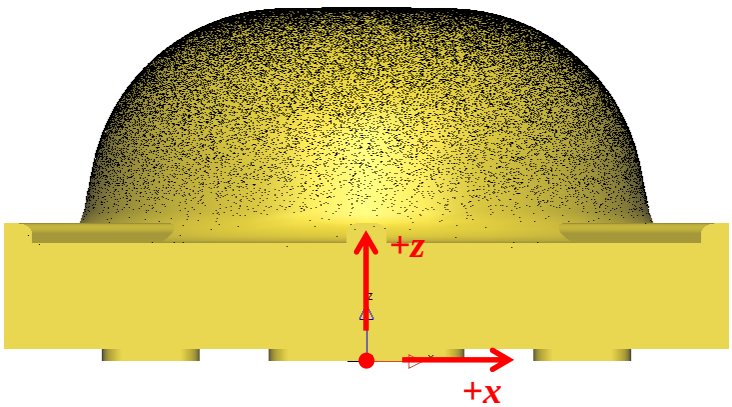
Coordinate System

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 package

z=0 plane == bottom of package

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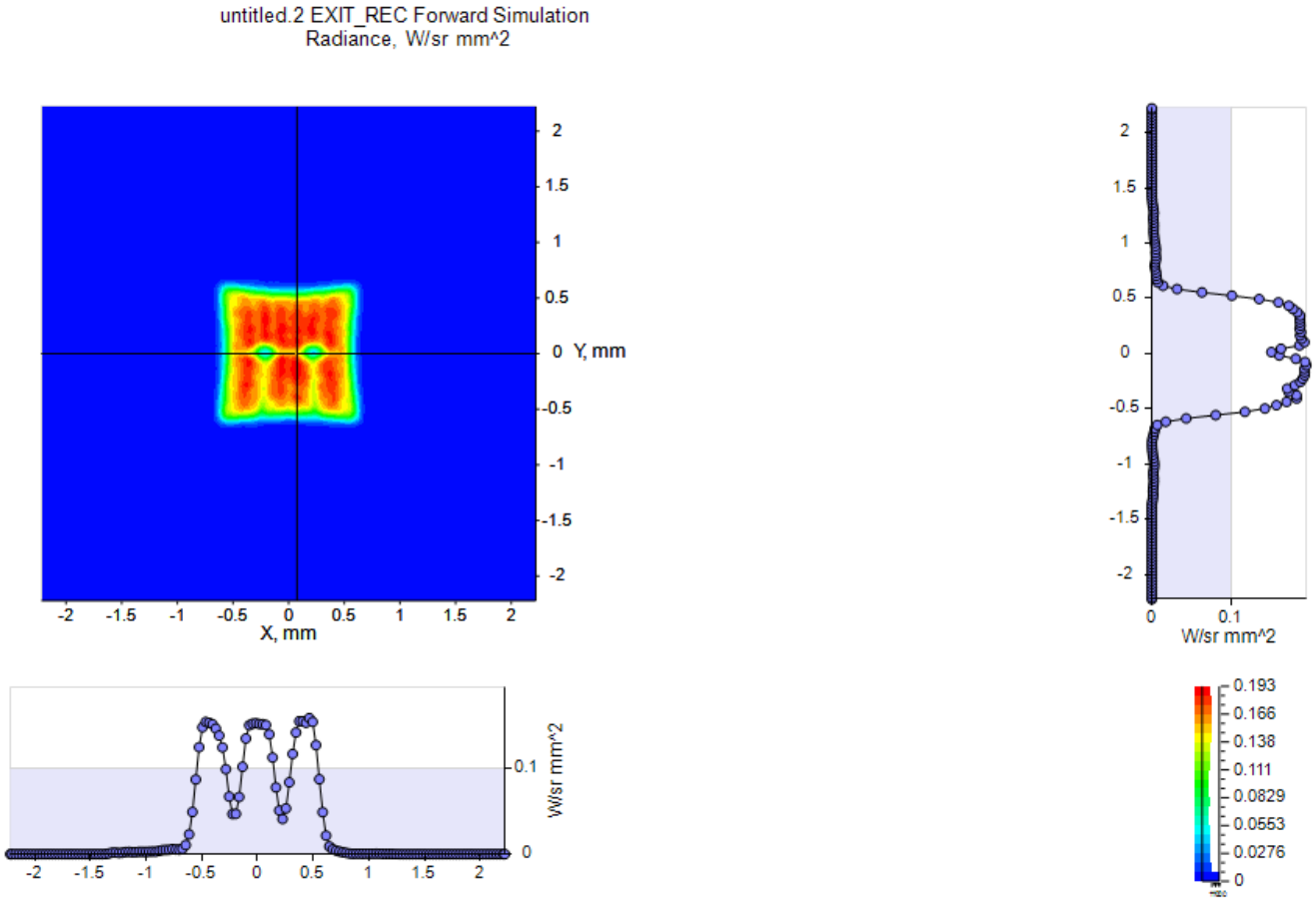
Virtual Image of Chip at Z=1.05 mm



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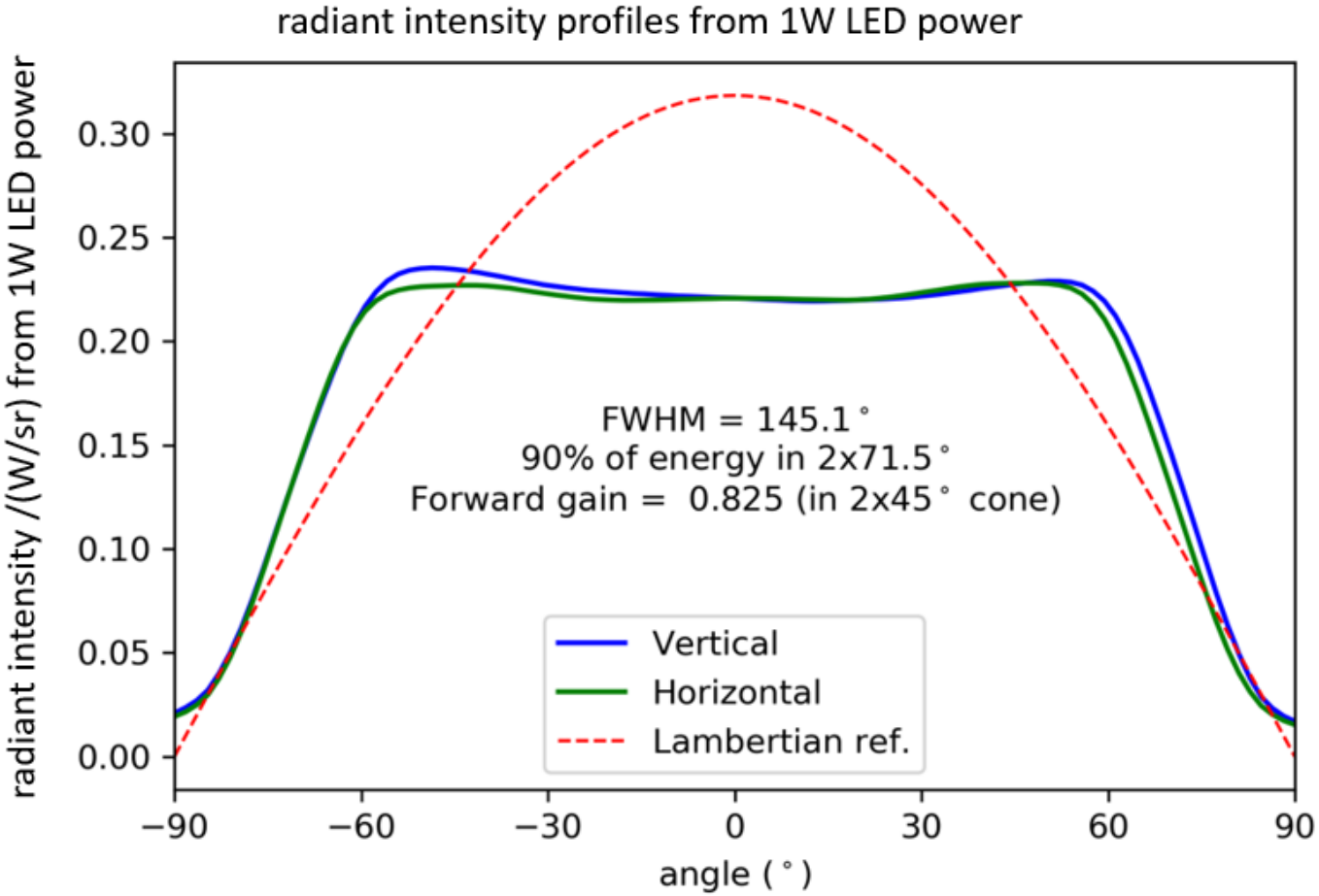
Radiant Intensity Distribution



Download File Nomenclature (see next slide)

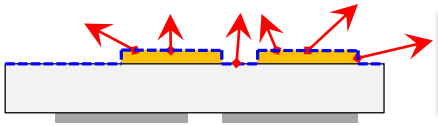
Example

LUXEON_Altilon_SMD2_1x4_gen4plus_20190206_20Mray_proj_Z_spectral_LT.ray

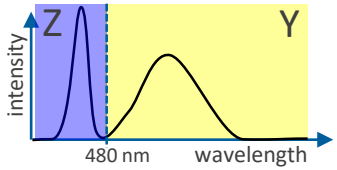
Product Name

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

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

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

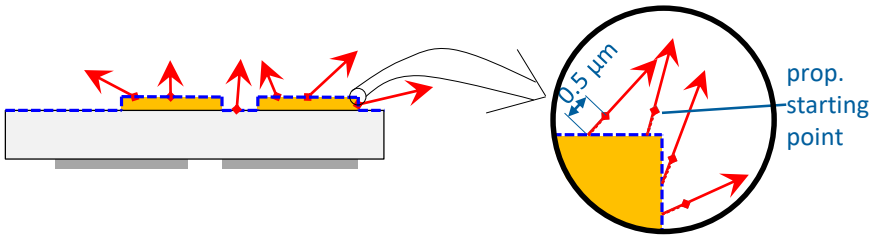
For projected raysets, the following procedure is applied for obtaining the starting points:

(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/CYJ8iHt5t9WPCZL

Files available for download

Prosource

RS8	LUXEON_IR_Domed_Automotive_145D_1175.rs8	86.5 MB	

LightTools

Projected	LUXEON_IR_Domed_Automotive_145D_20191107_20MRays_proj_LT.ray	534 MB	20MRays
Spectral projected	LUXEON_IR_Domed_Automotive_145D_20191107_20MRays_proj_spectral_LT.ray	610 MB	20MRays

ASAP & LucidShape

Projected	LUXEON_IR_Domed_Automotive_145D_20191107_20MRays_proj_ASAP.dis	534 MB	20MRays

OPTIS SPEOS

Spectral projected	LUXEON_IR_Domed_Automotive_145D_20191107_20MRays_proj_spectral_Speos.ray	610 MB	20MRays

Zemax

Projected	LUXEON_IR_Domed_Automotive_145D_20191107_20MRays_proj_zemax.dat	534 MB	20MRays

Far Field

IES	LUXEON_IR_Domed_Automotive_145D_20191107_20MRays.ies	10.1 kB

Spectrum

Spectrum	Spectrum_IRAuto_940_25DC_1A.txt	17.4 kB

CAD

STEP	LUXEON_IR_Domed_Automotive_145D_20191107_Dummy_for_Raysets.stp	257 kB
IGES	LUXEON_IR_Domed_Automotive_145D_20191107_Dummy_for_Raysets.IGS	273 kB

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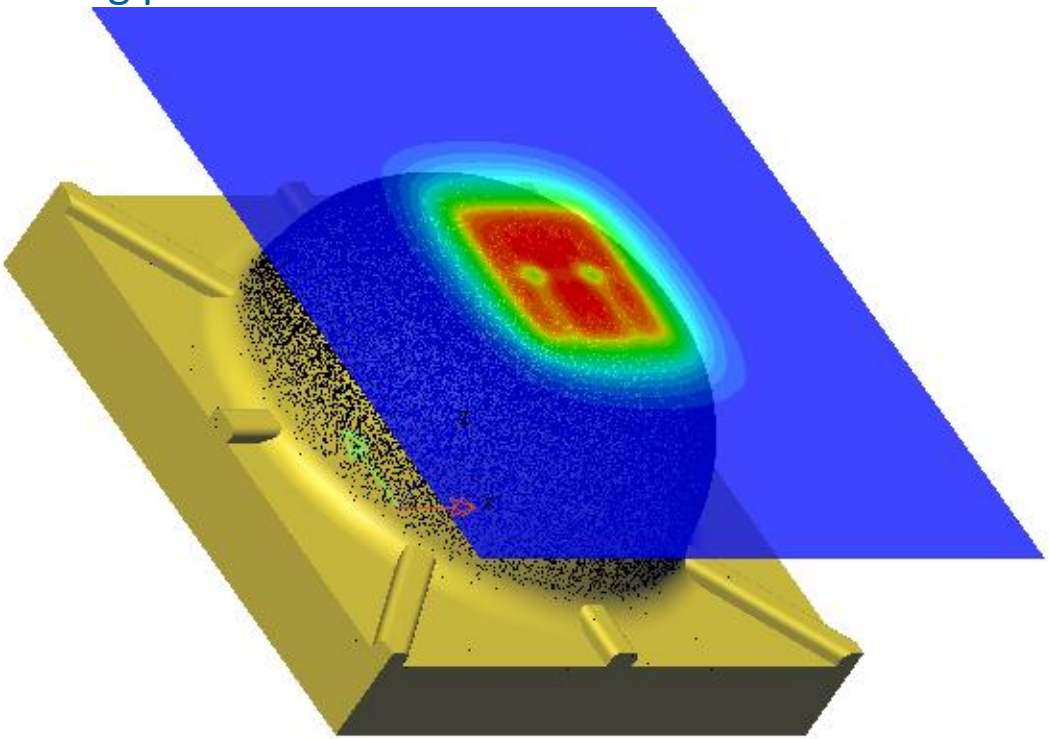
3D CAD view + ray starting points



Lumileds ref.: SJ001175_LUXEON IR Domed For Automotive 145D_20191107

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