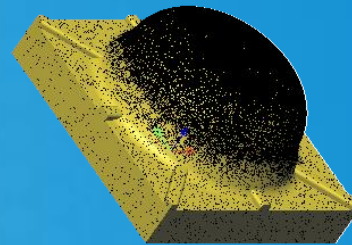


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Optical Rayset Readme

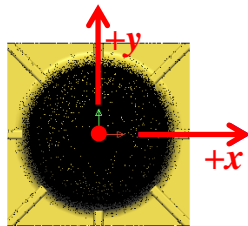
March 3rd, 2022



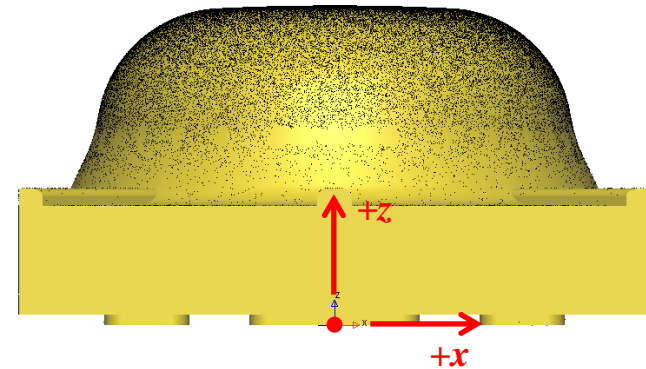
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Coordinate system

Top view



Side view

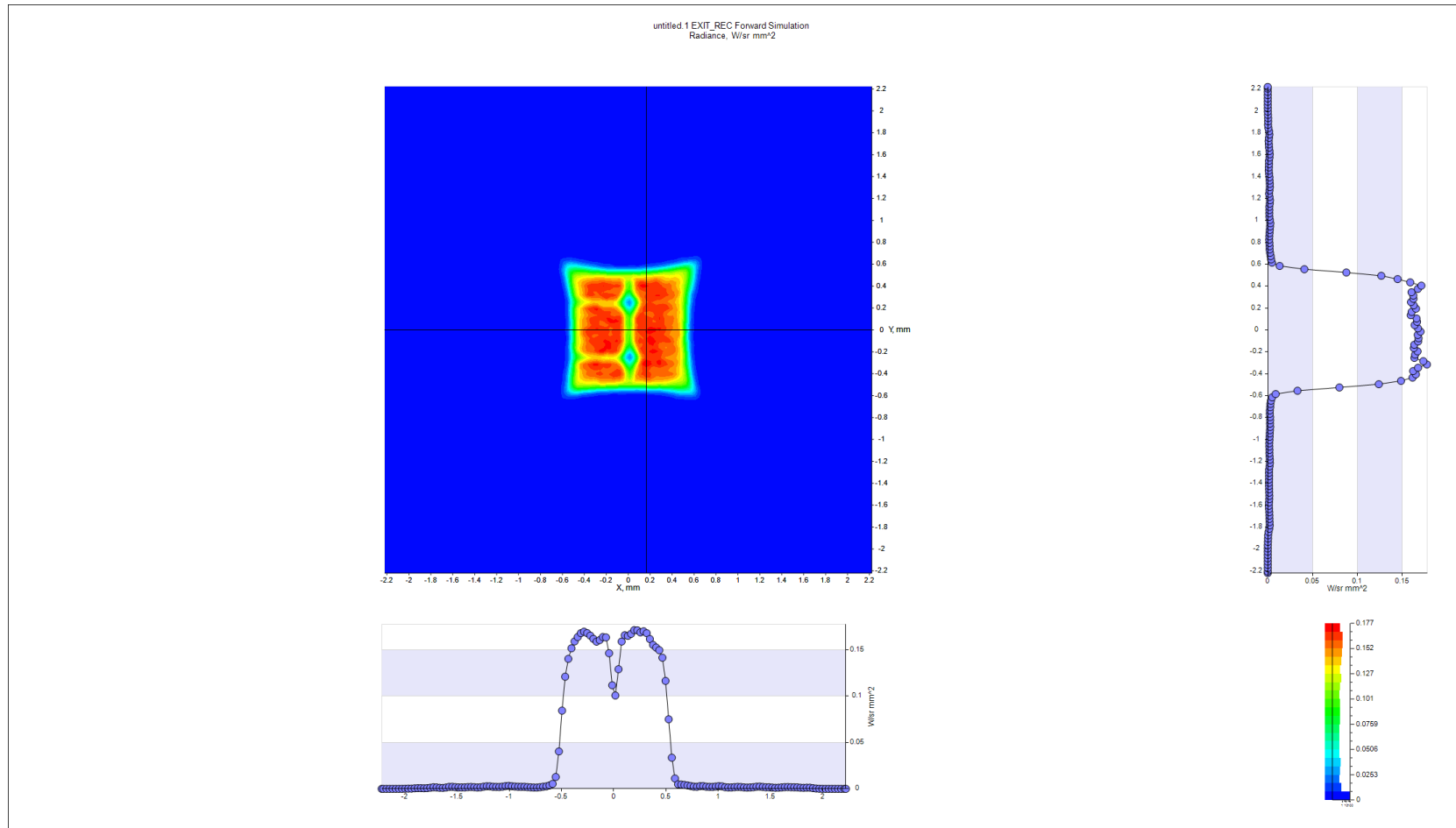


**CAD file and rayset files share the same coordinate system,
the origin is marked by the red dot in the sketches above:**

xy center == center of light emitting area
z=0 plane == bottom of package

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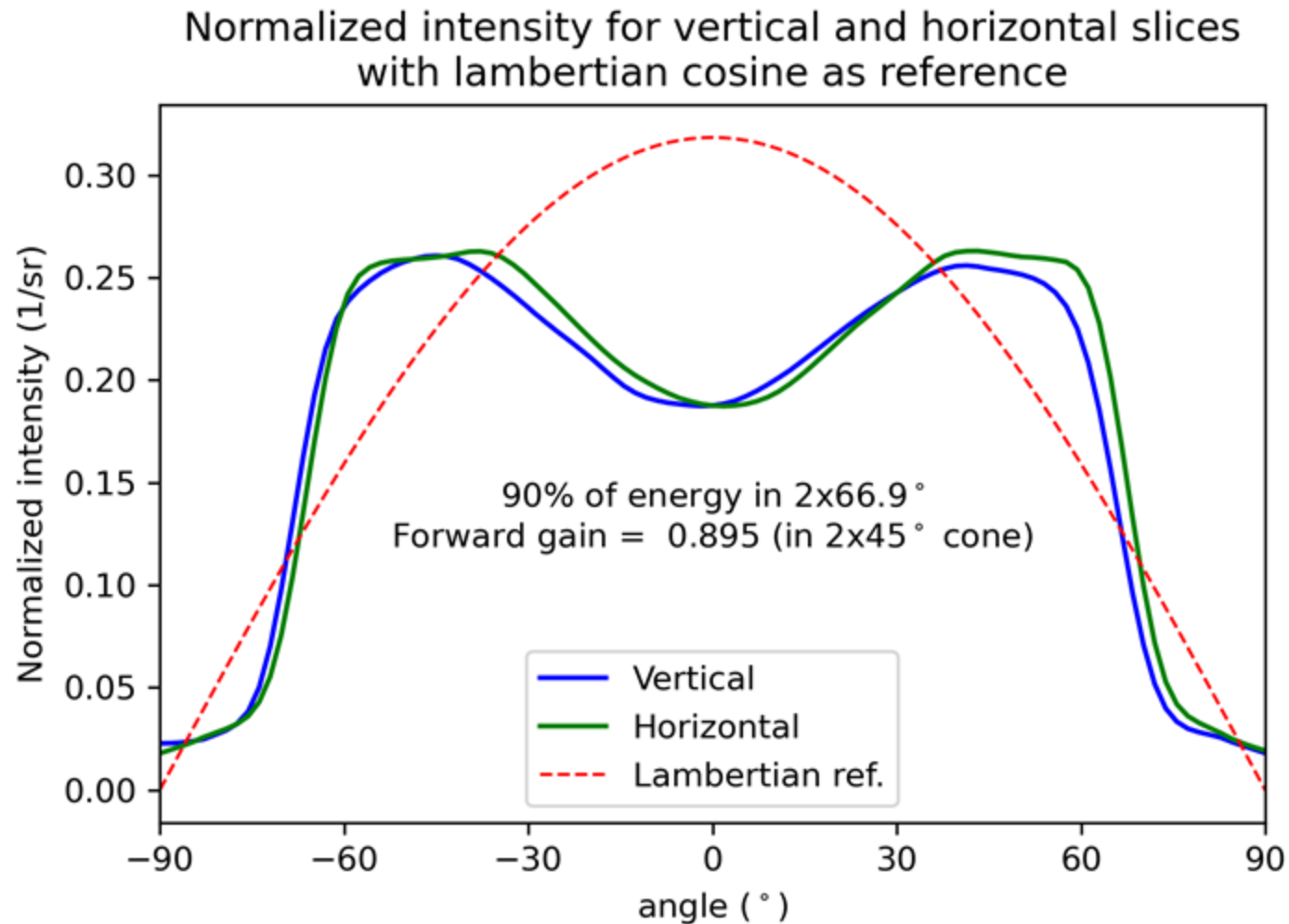
Radiance distribution at $z = 1 \text{ mm}$



The two orthogonal lines in the image mark the reference planes of the two 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 = $20 \cdot 10^6$ 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

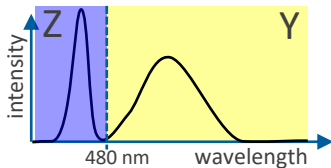
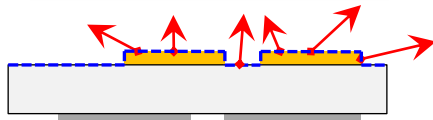
Spectral Information

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

Target Software Package

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

File Extension



vs.

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.

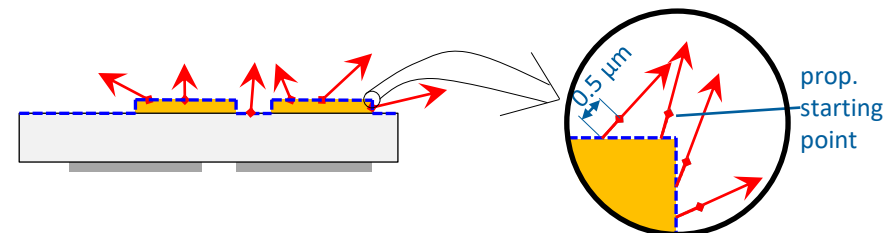
Projected Raysets: Propagated ray starting points

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/c7KijzgZkSp6GrE>

Files available for download

LightTools

Projected rayset:	LUXEON_IR_Domed_Gen2_940nm_135D_20220303_20MRays_proj_LT.ray	459 MB	20MRays
Spectral projected rayset:	LUXEON_IR_Domed_Gen2_940nm_135D_20220303_20MRays_proj_spectral_LT.ray	524 MB	20MRays

ASAP/LucidShape

Projected rayset:	LUXEON_IR_Domed_Gen2_940nm_135D_20220303_20MRays_proj_ASAP.dis	459 MB	20MRays
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OPTIS SPEOS

Spectral projected rayset:	LUXEON_IR_Domed_Gen2_940nm_135D_20220303_20MRays_proj_spectral_Speos.ray	524 MB	20MRays
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Zemax

Projected rayset:	LUXEON_IR_Domed_Gen2_940nm_135D_20220303_20MRays_proj_zemax.dat	459 MB	20MRays
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Far Field

ies:	LUXEON_IR_Domed_Gen2_940nm_135D_20220303_20MRays.ies	10.9 kB	
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Spectrum

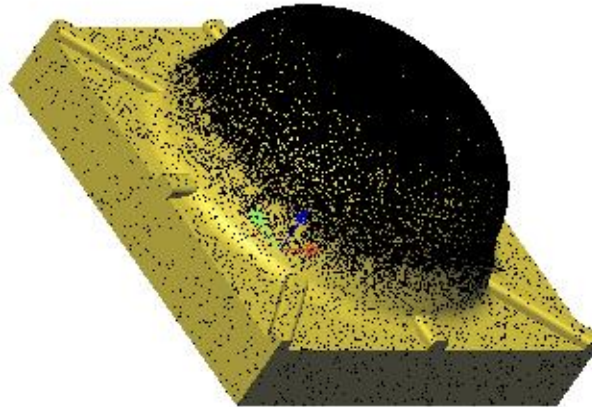
	LUXEON_IR_Domed_Gen2_940nm_135D_20220303_spectrum.txt	13.1 kB	
--	---	---------	--

CAD

STEP:	LUXEON_IR_Domed_Gen2_940nm_135D_20220303_geometry.STEP	916 kB	
IGES:	LUXEON_IR_Domed_Gen2_940nm_135D_20220303_geometry.IGS	737 kB	

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3D CAD view + ray starting points



Lumileds ref.: CP000054_LUXEON IR Domed Gen 2 940nm 135D_20220303



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