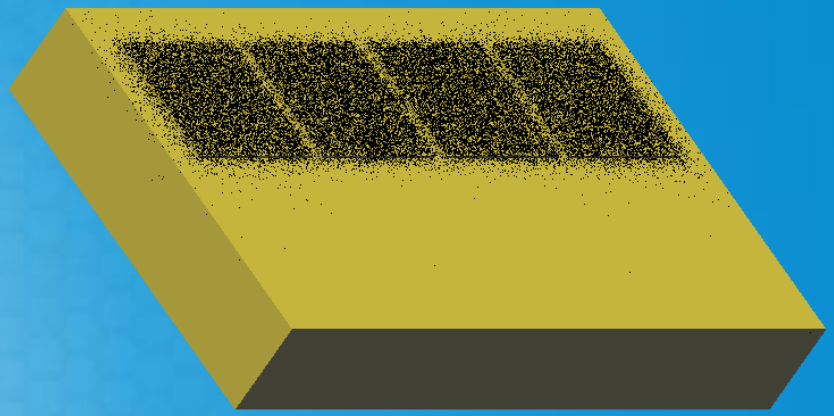
LUXEON Altilon SMD2 1x4 (Gen4+/Gen6)

Optical Rayset Readme

February 6th, 2019



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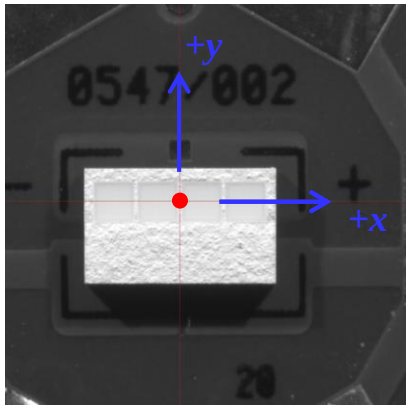
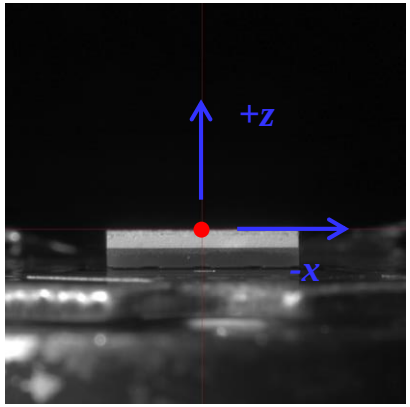
Measurement Reference Location

Top view



Side view



- xy centered on center of package
- z-axis referenced to top edge

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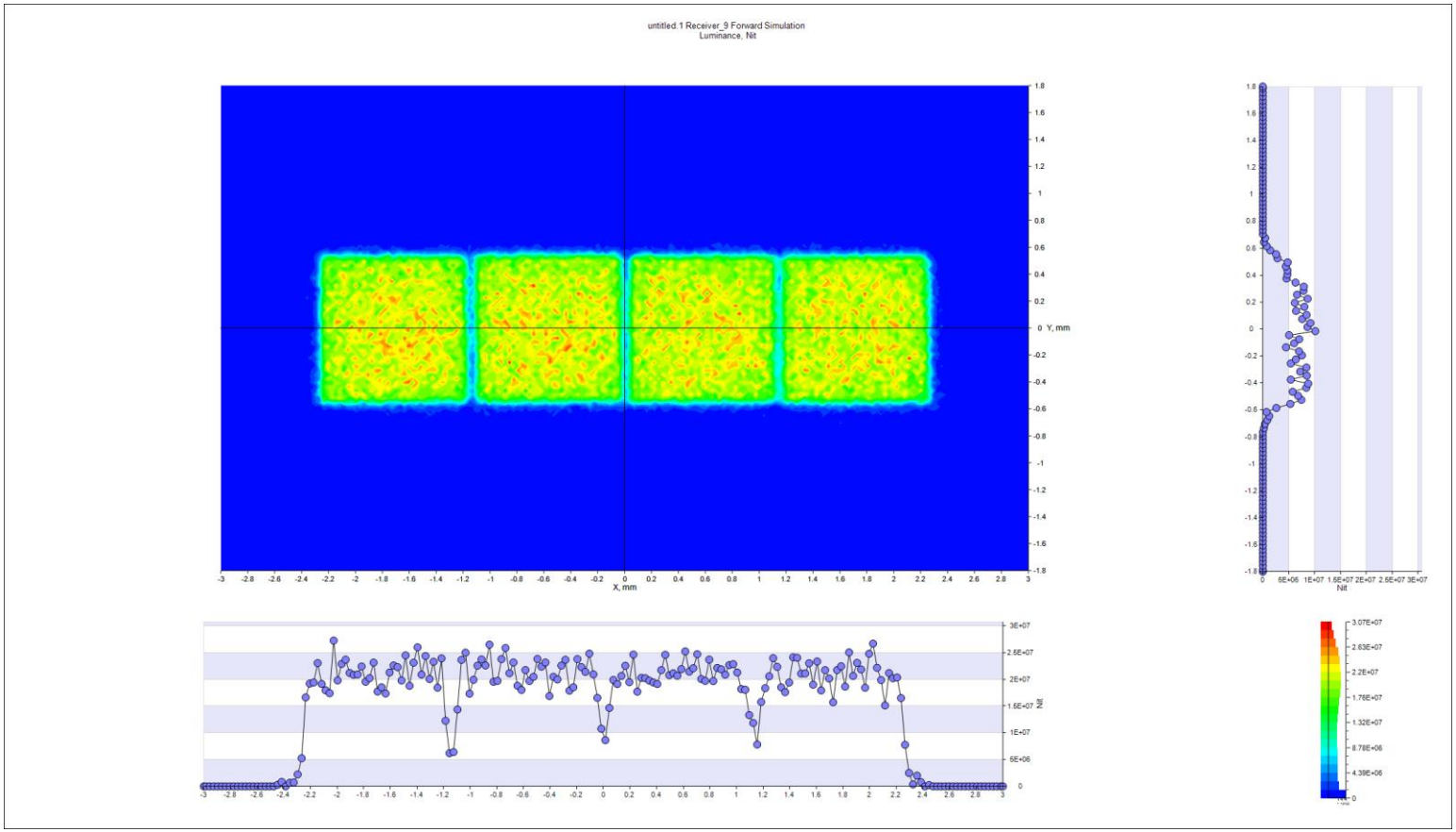
Source Size



Source luminance (FWHM) = 4.57 x 1.08 mm²

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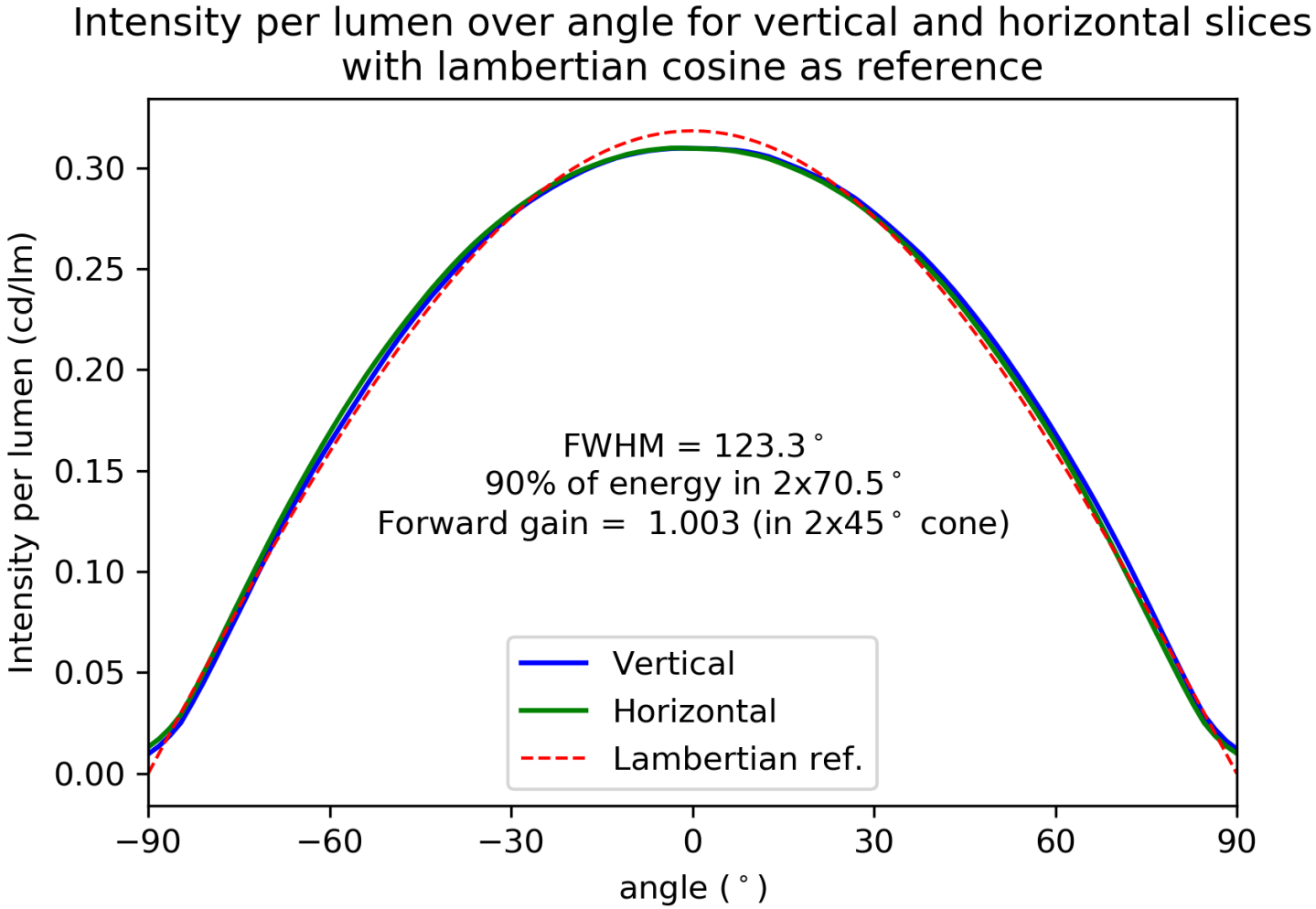
Luminous Intensity Distribution



Download File Nomenclature (see next slide)

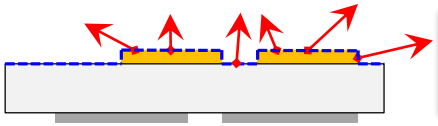
Example

LUXEON_Altilon_SMD2_1x4_gen4plus_20190206_20Mray_proj_Z_spectral_LT.ray

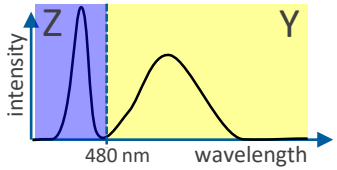
Product Name

Reference Date
helps identifying underlying dataset

Number of rays
e.g. 20 M = 20 · 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

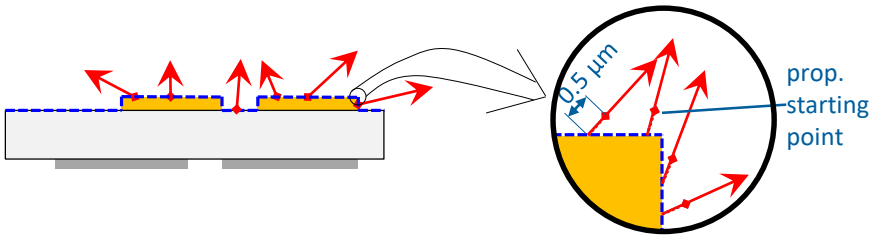
For projected raysets, the following procedure is applied for obtaining the starting points:

(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/REgZ7AggH3s6PK4

Files available for download

Prosource

RS8	LUXEON_Altilon_SMD2_1x4_20190206_1006.rs8	165 MB	

LightTools

Spectral Projected	LUXEON_Altilon_SMD2_1x4_20190206_20Mray_proj_spectral_LT.ray	1.19 GB	20M
Y-Component Projected	LUXEON_Altilon_SMD2_1x4_20190206_20Mray_proj_Y_LT.ray	533 MB	20M
Z-Component Projected	LUXEON_Altilon_SMD2_1x4_20190206_20Mray_proj_Z_LT.ray	532 MB	20M

ASAP & LucidShape

Y-Component Projected	LUXEON_Altilon_SMD2_1x4_20190206_20Mray_proj_Y_ASAP.dis	533 MB	20M
Z-Component Projected	LUXEON_Altilon_SMD2_1x4_20190206_20Mray_proj_Z_ASAP.dis	532 MB	20M

OPTIS SPEOS

Y-Component Spectral Projected	LUXEON_Altilon_SMD2_1x4_20190206_20Mray_proj_Y_spectral_Speos.ray	609 MB	20M
Z-Component Spectral Projected	LUXEON_Altilon_SMD2_1x4_20190206_20Mray_proj_Z_spectral_Speos.ray	608 MB	20M

Zemax

Spectral Projected	LUXEON_Altilon_SMD2_1x4_20190206_20Mray_proj_spectral_zemax.dat	1.19 GB	20M

Far Field

IES	LUXEON_Altilon_SMD2_1x4_20190206_20Mray.ies	620 kB

Spectrum

Spectrum	LUXEON_Altilon_SMD2_1x4_20190206_spectrum.txt	12.7 kB

CAD

STEP	LUXEON_Altilon_SMD2_1x4_20190206_geometry.STEP	145 kB
IGES	LUXEON_Altilon_SMD2_1x4_20190206_geometry.IGS	298 kB

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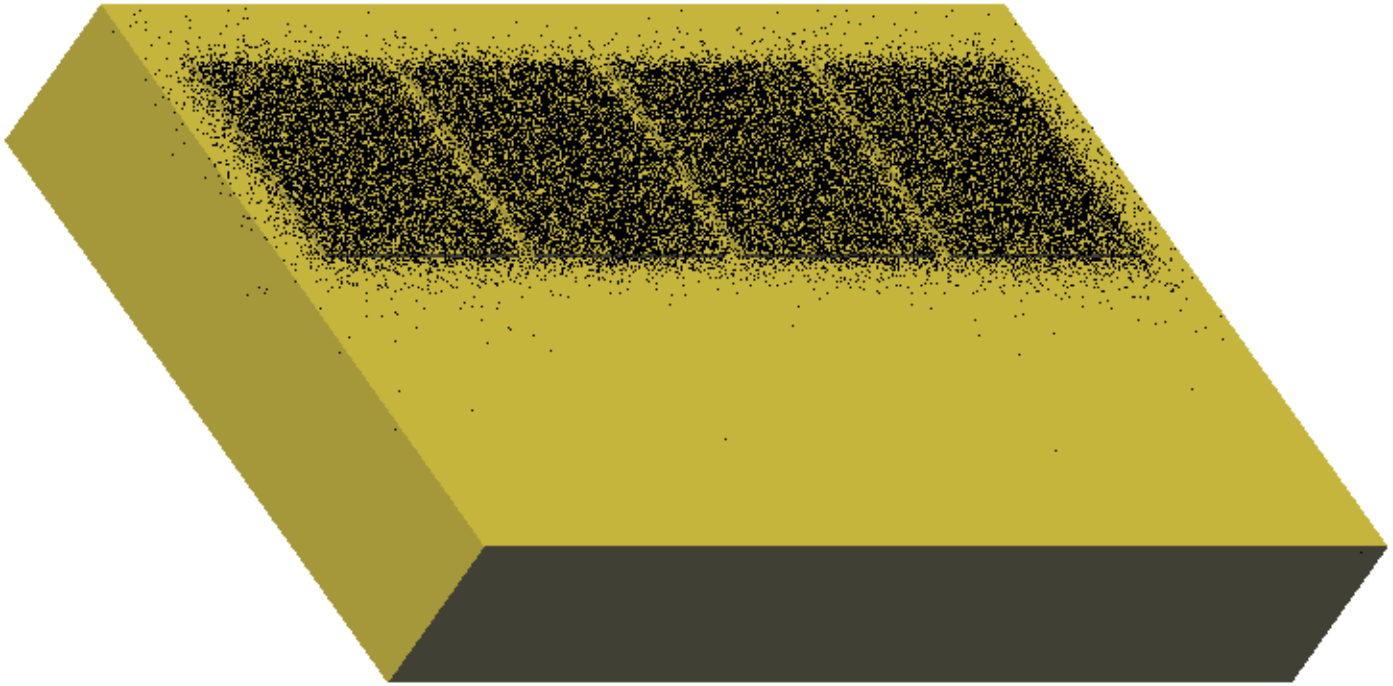
3D CAD view + ray starting points on the 3D surface



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Illuminance color chart (color over position)

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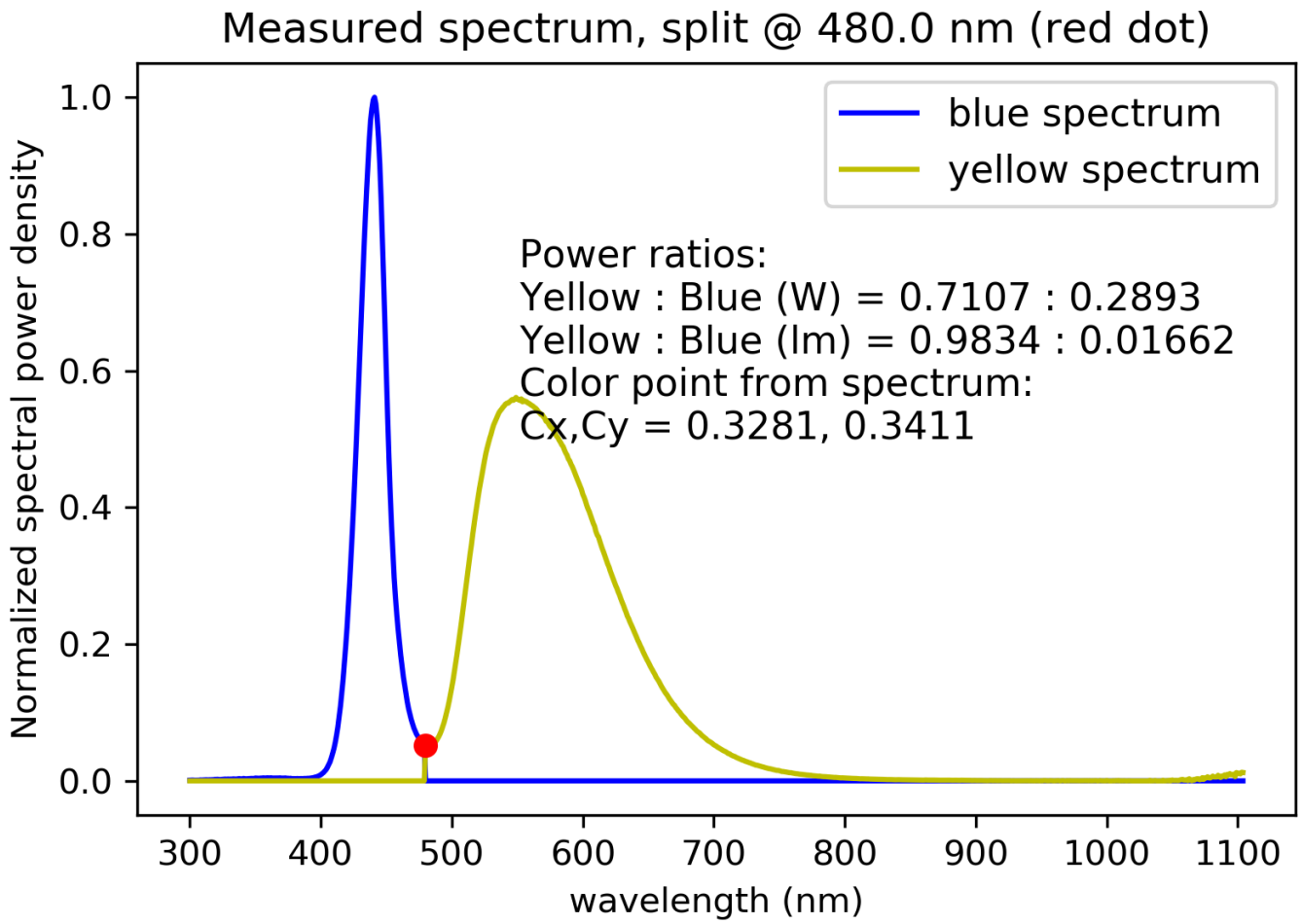
Measured spectrum split in blue (Z) and yellow (Y) components



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Color data info

Parameter	Value
yellow : blue ratio (W) (from measured spectrum)	0.7107 : 0.2893
yellow : blue ratio (lm) (from measured spectrum)	0.9834 : 0.01662
Average color point Cx, Cy (from measured spectrum)	0.3281, 0.3411
Average color point Cx, Cy (from simulation)	0.3276, 0.342
Color point Cx, Cy @ HV (from simulation)	0.324, 0.3343
Average CCT (K) (from simulation)	5.717e+03

Lumileds ref.: 1006_LUXEON Altilon SMD2 1x4_20190206

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