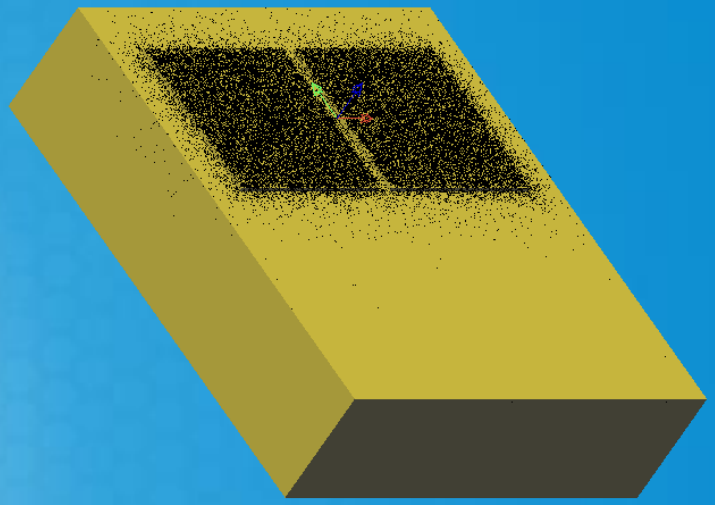
LUXEON Altilon SMD2 1x2 (Gen4+/Gen6)

Optical Rayset Readme

September 21st, 2020

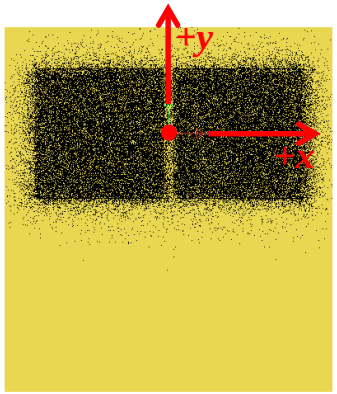


LUMILEDS

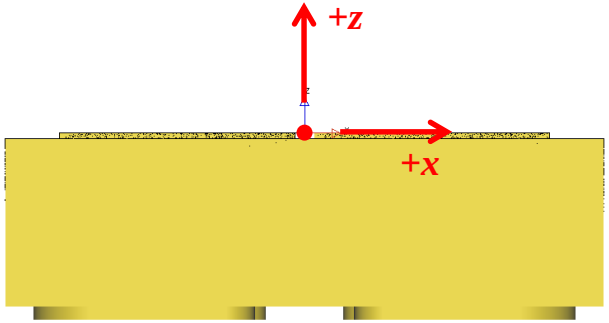
LUXEON Altilon SMD2 1x2

Coordinate system

Top view



Side view



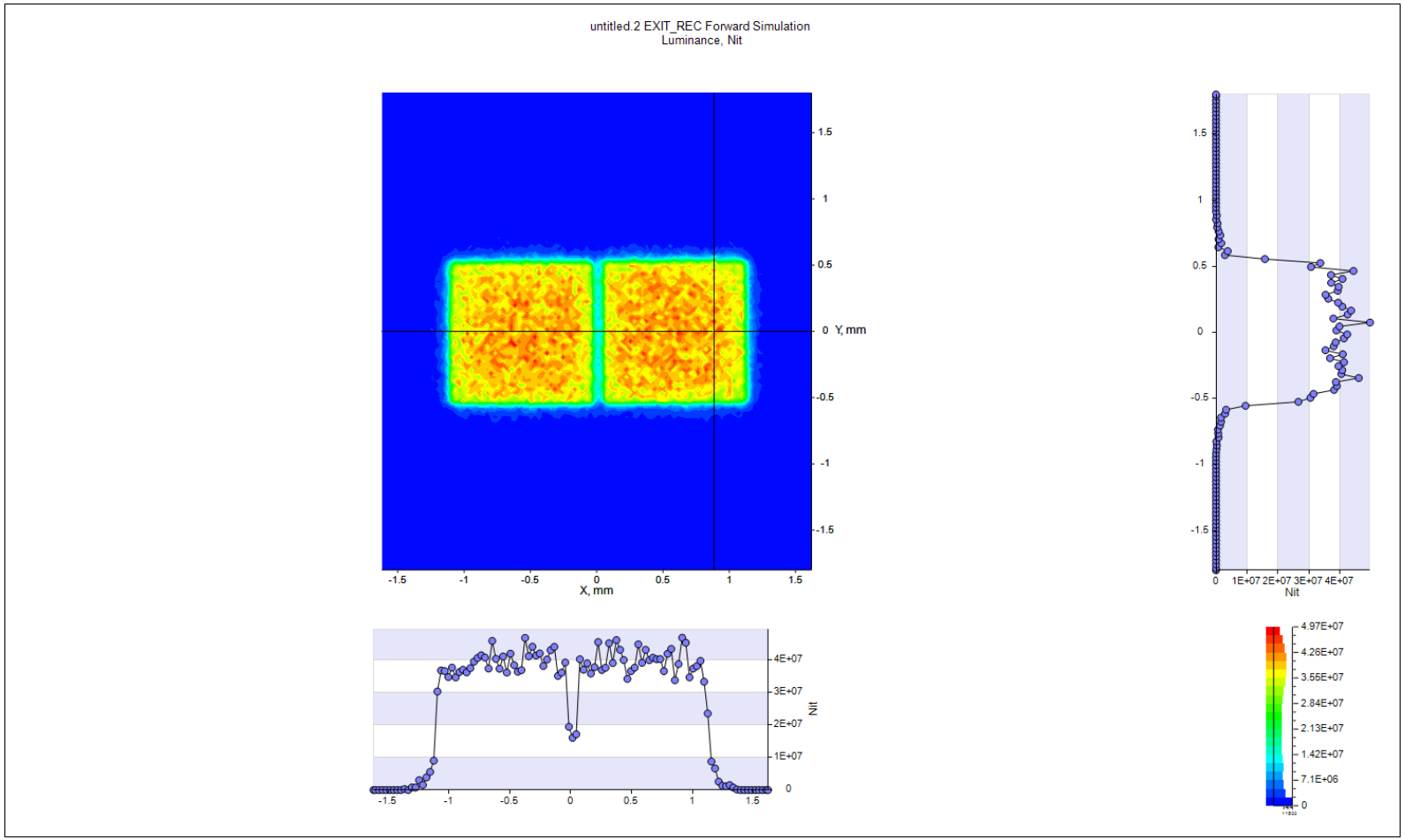
CAD file and rayset files share <u>the same</u> coordinate system, the origin is marked by the red dot in the sketches above:

xy center == center of light emitting area

z=0 plane == top edge of light emitting area

LUXEON Altilon SMD2 1x2

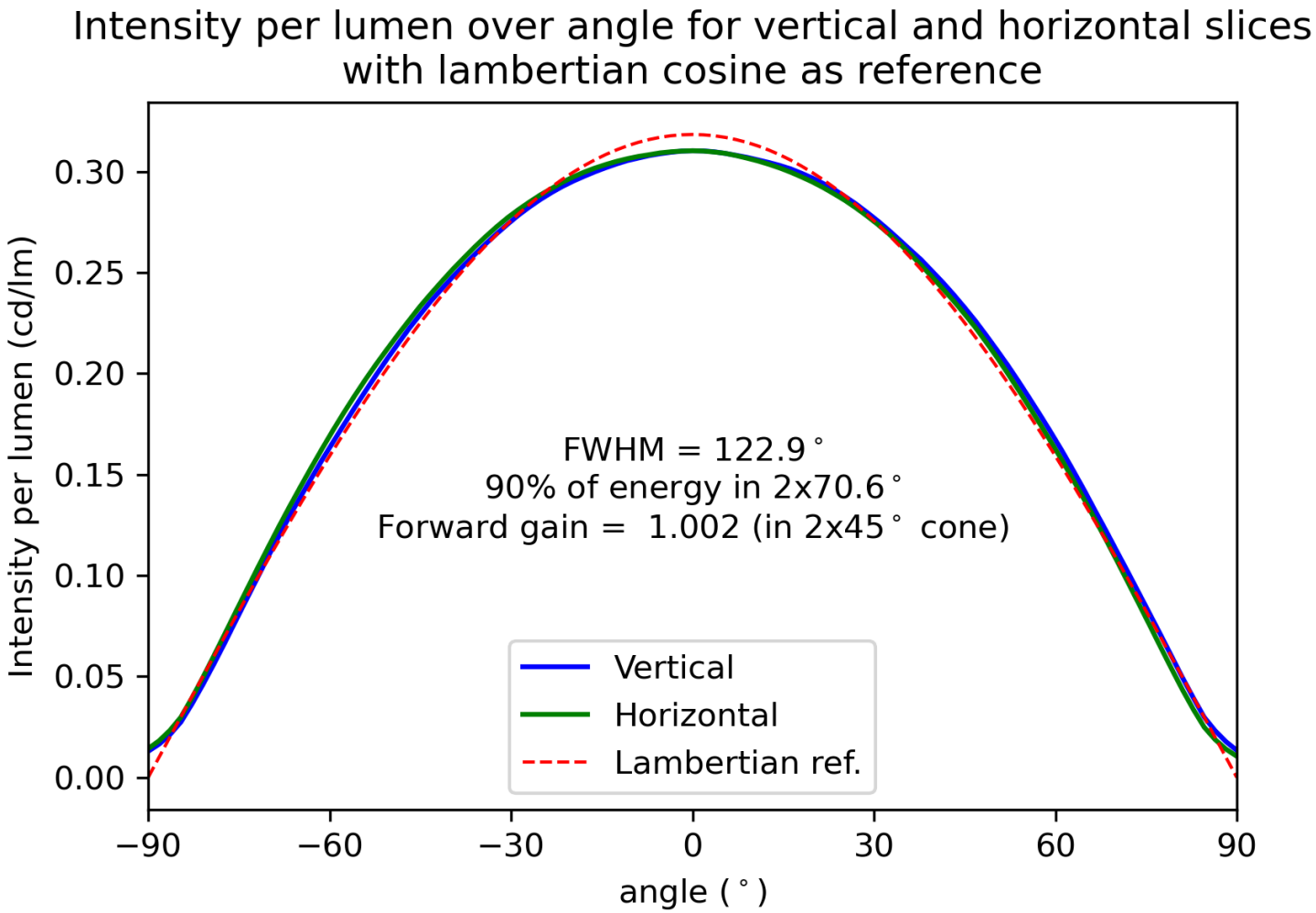
Source size



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

LUXEON Altilon SMD2 1x2

Luminous intensity distribution



Download File Nomenclature (see next slide)

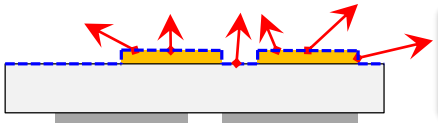
Example

LUXEON_Altilon_SMD2_1x4_gen4plus_20190206_20Mray_proj_Z_spectral_LT.ray

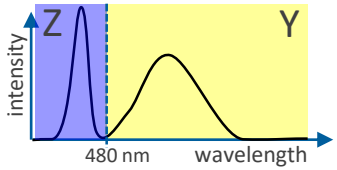
Product Name

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

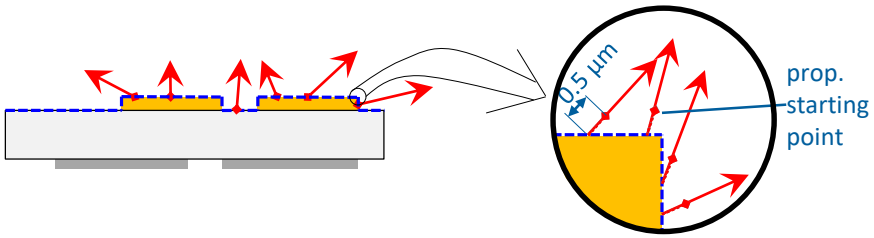
For projected raysets, the following procedure is applied for obtaining the starting points:

(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.



LUXEON Altilon SMD2 1x2

Link to download folder

https://raysets.lumileds.com/index.php/s/HcfzpZ2RtpZQmLo

Files available for download

Prosource

RS8	LUXEON_Altilon_SMD2_1x2_20200921_1329.rs8	1.1 GB	

LightTools

Spectral Projected	LUXEON_Altilon_SMD2_1x2_20200921_40Mrays_proj_spectral_LT.ray	1.19 GB	40Ms
Y-Component Projected	LUXEON_Altilon_SMD2_1x2_20200921_20Mrays_proj_Y_LT.ray	533 MB	20Ms
Z-Component Projected	LUXEON_Altilon_SMD2_1x2_20200921_20Mrays_proj_Z_LT.ray	533 MB	20Ms

ASAP & LucidShape

Y-Component Projected	LUXEON_Altilon_SMD2_1x2_20200921_20Mrays_proj_Y_ASAP.dis	533 MB	20Ms
Z-Component Projected	LUXEON_Altilon_SMD2_1x2_20200921_20Mrays_proj_Z_ASAP.dis	533 MB	20Ms

OPTIS SPEOS

Y-Component Spectral Projected	LUXEON_Altilon_SMD2_1x2_20200921_20Mrays_proj_Y_spectral_Speos.ray	609 MB	20Ms
Z-Component Spectral Projected	LUXEON_Altilon_SMD2_1x2_20200921_20Mrays_proj_Z_spectral_Speos.ray	609 MB	20Ms

Zemax

Spectral Projected	LUXEON_Altilon_SMD2_1x2_20200921_40Mrays_proj_spectral_zemax.dat	1.19 GB	40Ms

Far Field

IES	LUXEON_Altilon_SMD2_1x2_20200921_40Mrays.ies	10.6 kB	

Spectrum

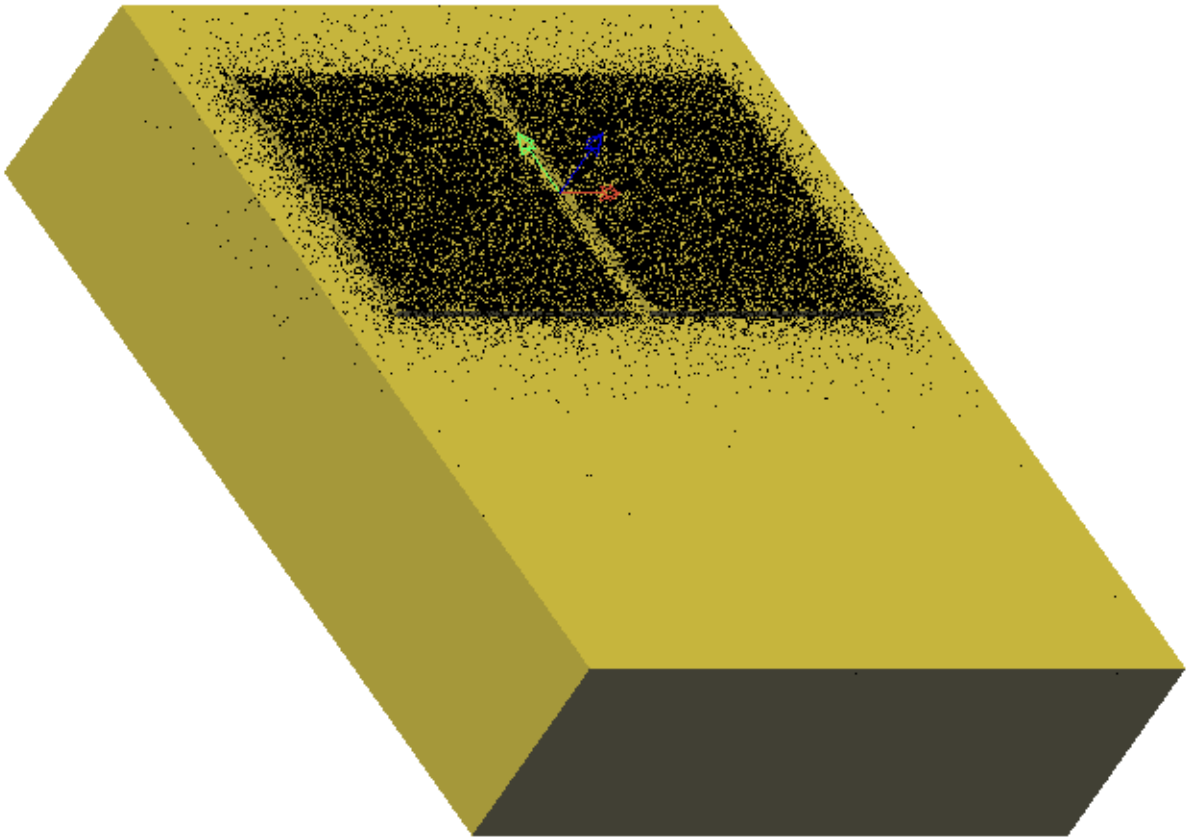
Spectrum	LUXEON_Altilon_SMD2_1x2_spectrum.txt	10.2 kB	

CAD

STEP	LUXEON_Altilon_SMD2_1x2_20200921_geometry.STEP	173 kB	
IGES	LUXEON_Altilon_SMD2_1x2_20200921_geometry.IGS	123 kB	

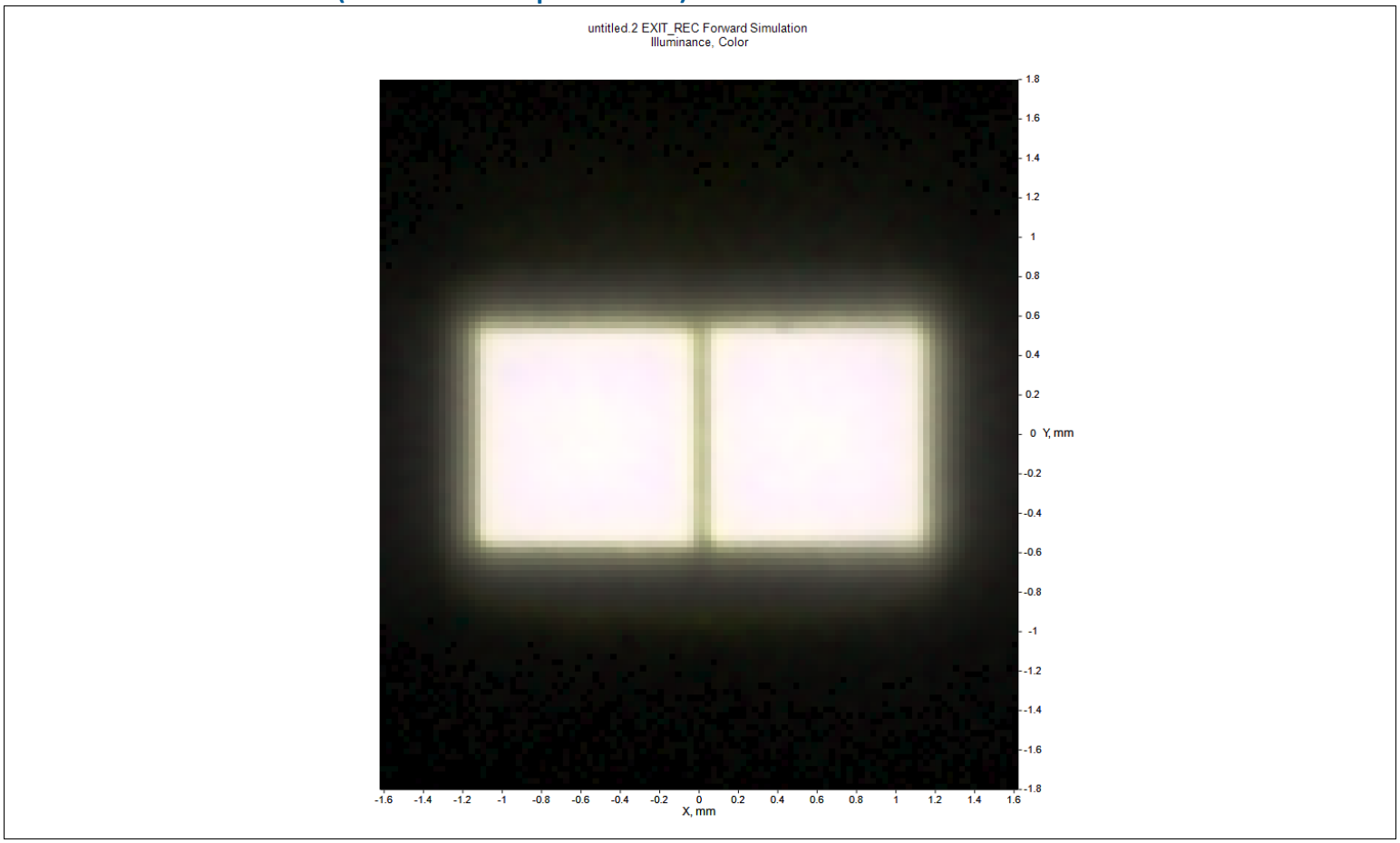
LUXEON Altilon SMD2 1x2

3D CAD view + ray starting points



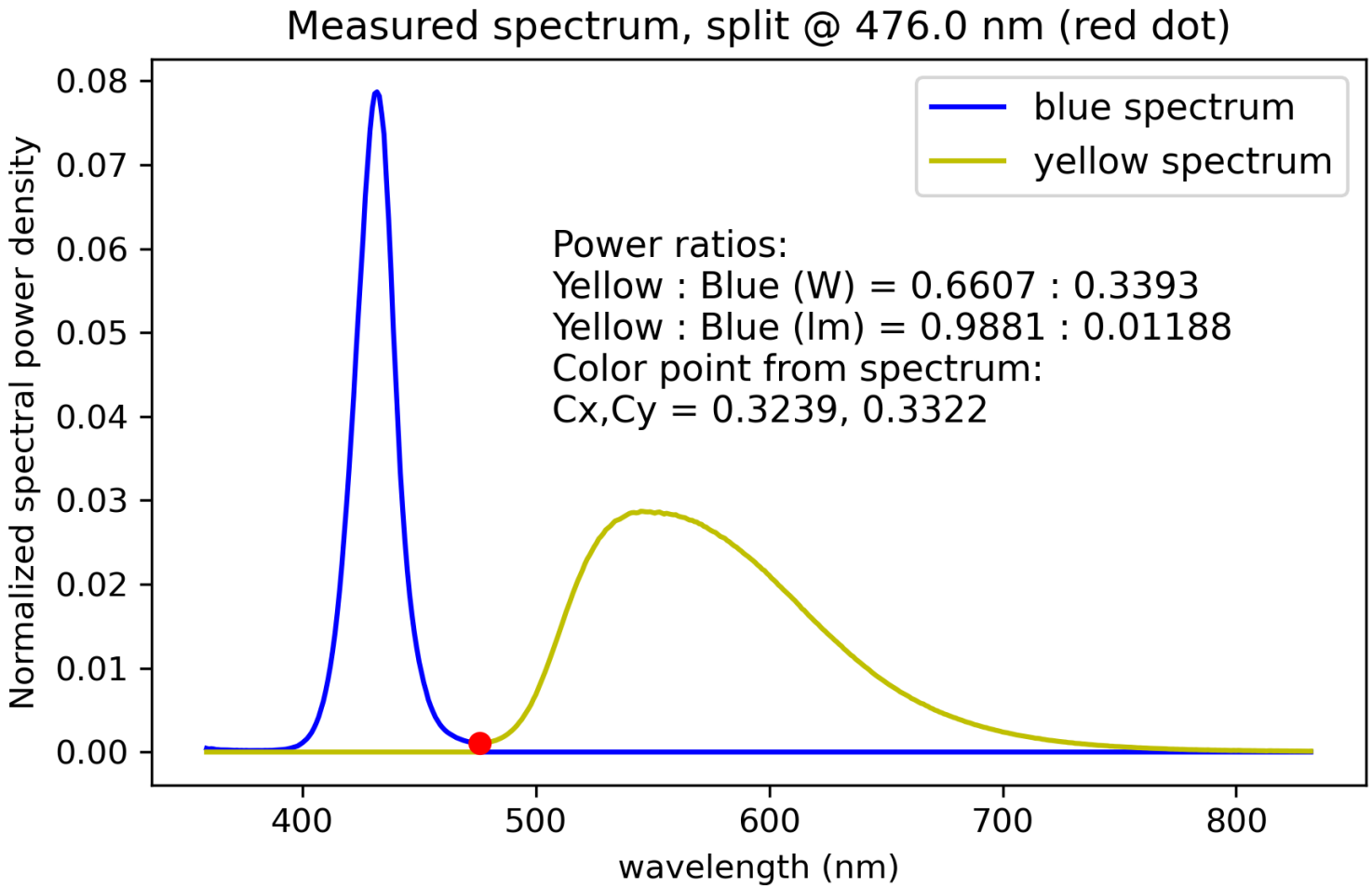
LUXEON Altilon SMD2 1x2

Illuminance color chart (color over position)



LUXEON Altilon SMD2 1x2

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



LUXEON Altilon SMD2 1x2

Color data info

Parameter	Value
yellow : blue ratio (W) (from measured spectrum)	0.6607 : 0.3393
yellow : blue ratio (lm) (from measured spectrum)	0.9881 : 0.01188
Average color point Cx, Cy (from measured spectrum)	0.3239, 0.3322
Average color point Cx, Cy (from simulation)	0.3239, 0.3344
Color point Cx, Cy @ HV (from simulation)	0.3213, 0.3272
Average CCT (K) (from simulation)	5.9e+03

Lumileds ref.: 1329_LUXEON Altilon SMD2 1x2_20200921

Neither Lumileds Holding B.V. nor its affiliates shall be liable for any kind of loss of data or any other damages, direct, indirect or consequential, resulting from the use of the provided information and data. Although Lumileds Holding B.V. and/or its affiliates have attempted to provide the most accurate information and data, the materials and services information and data are provided “as is,” and neither Lumileds Holding B.V. nor its affiliates warrants or guarantees the contents and correctness of the provided information and data. Lumileds Holding B.V. and its affiliates reserve the right to make changes without notice. You as user agree to this disclaimer and user agreement with the use of the provided materials, information and data. A listing of Lumileds product/patent coverage may be accessed at lumileds.com/patents.

© 2020 Lumileds Holding B.V. All rights reserved.