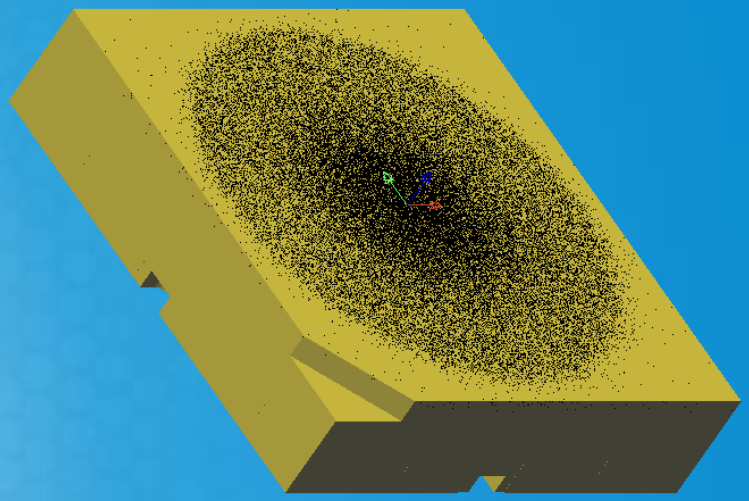
LUXEON Versat 3030 0.5 W CoolWhite

Optical Rayset Readme

Data: March 30th, 2017
Updated: Nov. 30th, 2020



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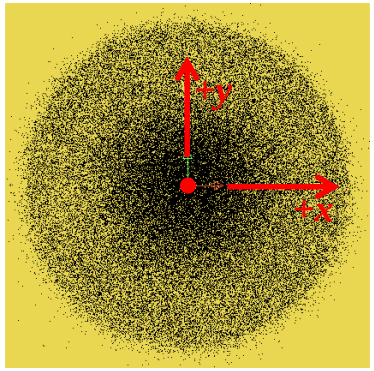
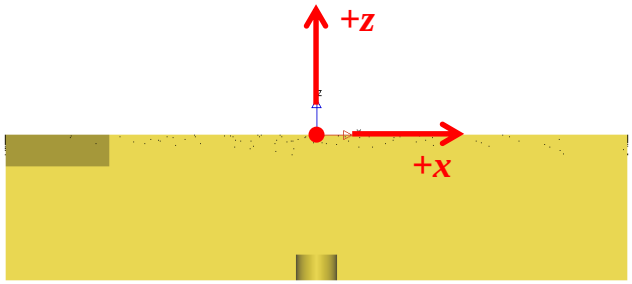
Coordinate system

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 emitting area

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

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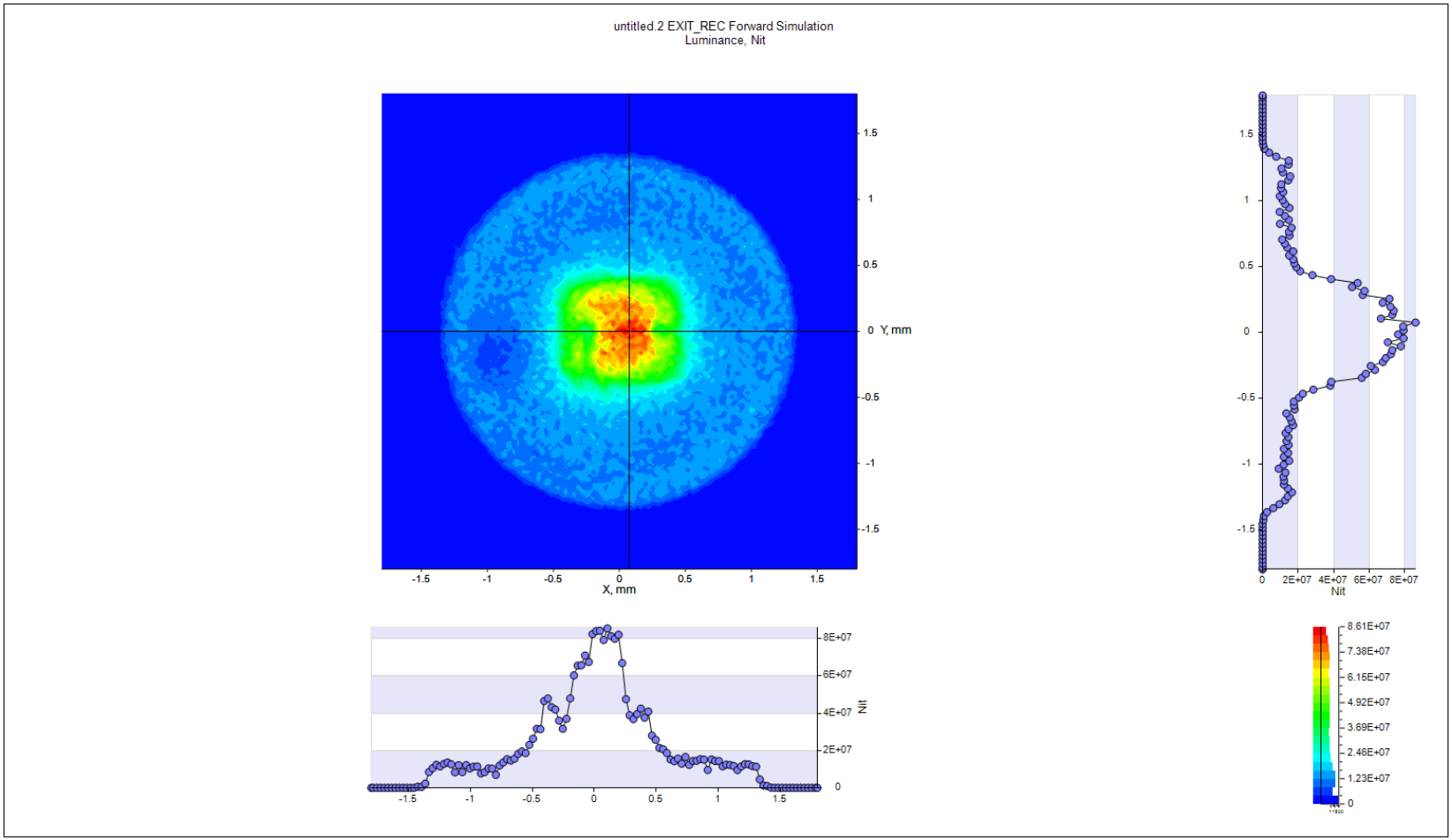
Luminance distribution at z = 0 mm



Size of distribution (FWHM) = 0.63 x 0.76 mm²

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

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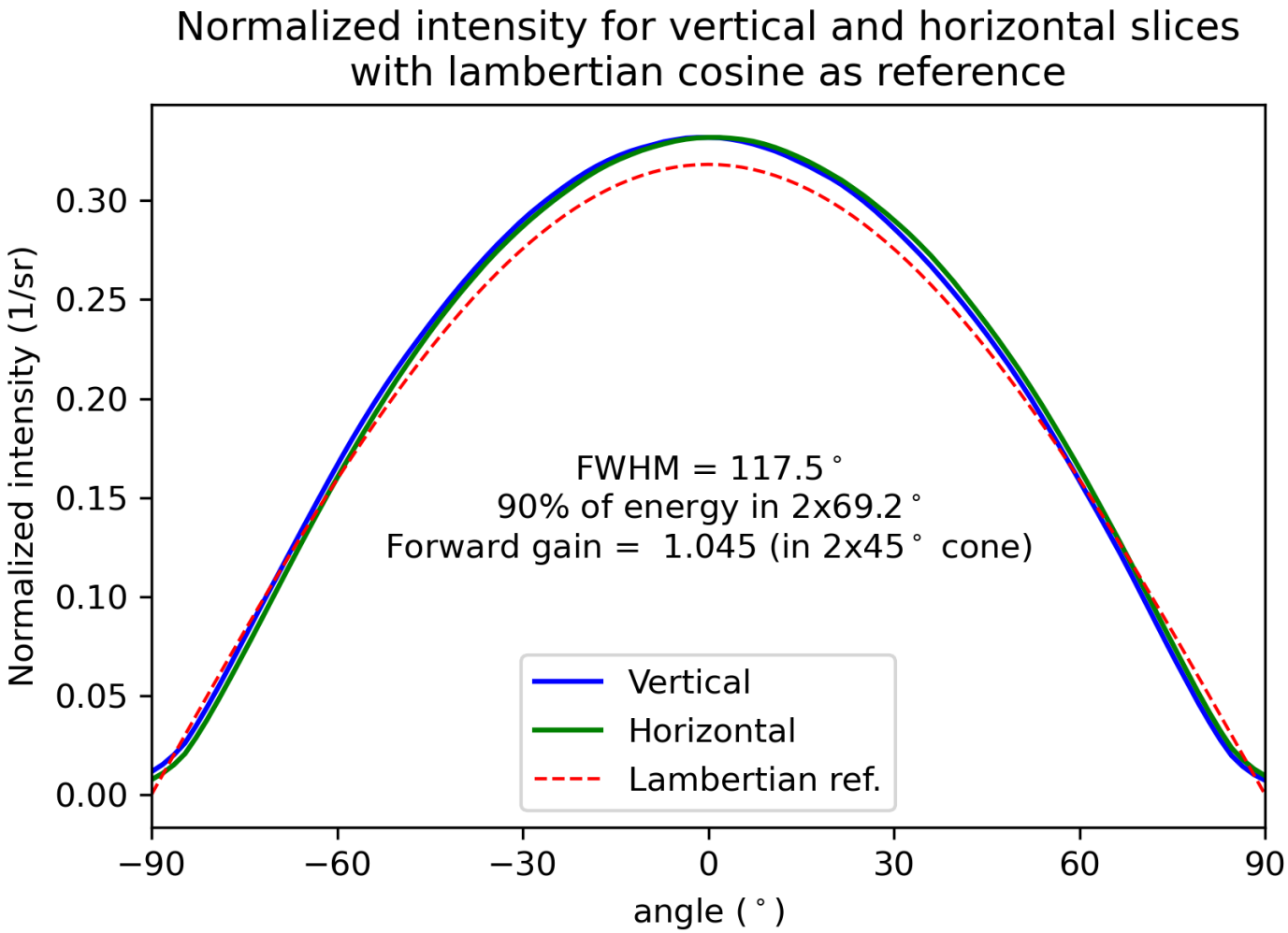
Luminous intensity distribution



Download File Nomenclature (see next slide)

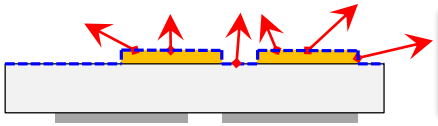
Example

LUXEON_Altilon_SMD2_1x4_gen4plus_20190206_20Mray_proj_Z_spectral_LT.ray

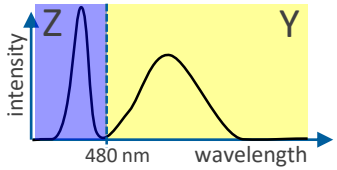
Product Name

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

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

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

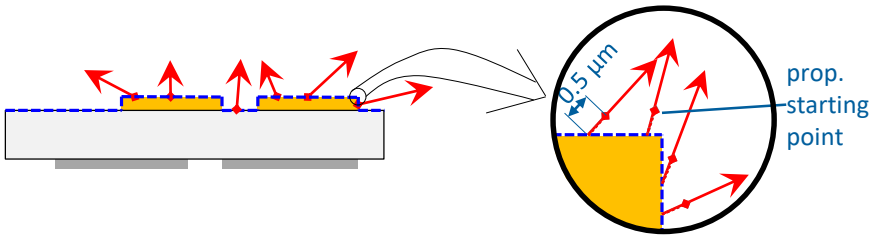
For projected raysets, the following procedure is applied for obtaining the starting points:

(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/95PxSqFpK7gkKFZ

Files available for download

Prosource

RS8	LUXEON_Versat_3030_0_5W_CW_20170330.rs8	468 MB	

LightTools

Spectral Projected	LUXEON_Versat_3030_0_5W_CW_20170330_40MRays_proj_spectral_LT.ray	1.15 GB	40MRays
Y-Component Projected	LUXEON_Versat_3030_0_5W_CW_20170330_20MRays_proj_Y_LT.ray	534 MB	20MRays
Z-Component Projected	LUXEON_Versat_3030_0_5W_CW_20170330_20MRays_proj_Z_LT.ray	500 MB	20MRays

ASAP & LucidShape

Y-Component Projected	LUXEON_Versat_3030_0_5W_CW_20170330_20MRays_proj_Y_ASAP.dis	534 MB	20MRays
Z-Component Projected	LUXEON_Versat_3030_0_5W_CW_20170330_20MRays_proj_Z_ASAP.dis	500 MB	20MRays

OPTIS SPEOS

Y-Component Spectral Projected	LUXEON_Versat_3030_0_5W_CW_20170330_20MRays_proj_Y_spectral_Speos.ray	610 MB	20MRays
Z-Component Spectral Projected	LUXEON_Versat_3030_0_5W_CW_20170330_20MRays_proj_Z_spectral_Speos.ray	572 MB	20MRays

Zemax

Spectral Projected	LUXEON_Versat_3030_0_5W_CW_20170330_40MRays_proj_spectral_zemax.dat	1.15 GB	40MRays

Far Field

IES	LUXEON_Versat_3030_0_5W_CW_20170330_40MRays.ies	10.6 kB	

Spectrum

Spectrum	LUXEON_Versat_3030_0_5W_CW_20170330_spectrum.txt	10.2 kB	

CAD

STEP	LUXEON_Versat_3030_0_5W_CW_20170330_geometry.STEP	260 kB	
IGES	LUXEON_Versat_3030_0_5W_CW_20170330_geometry.IGS	501 kB	

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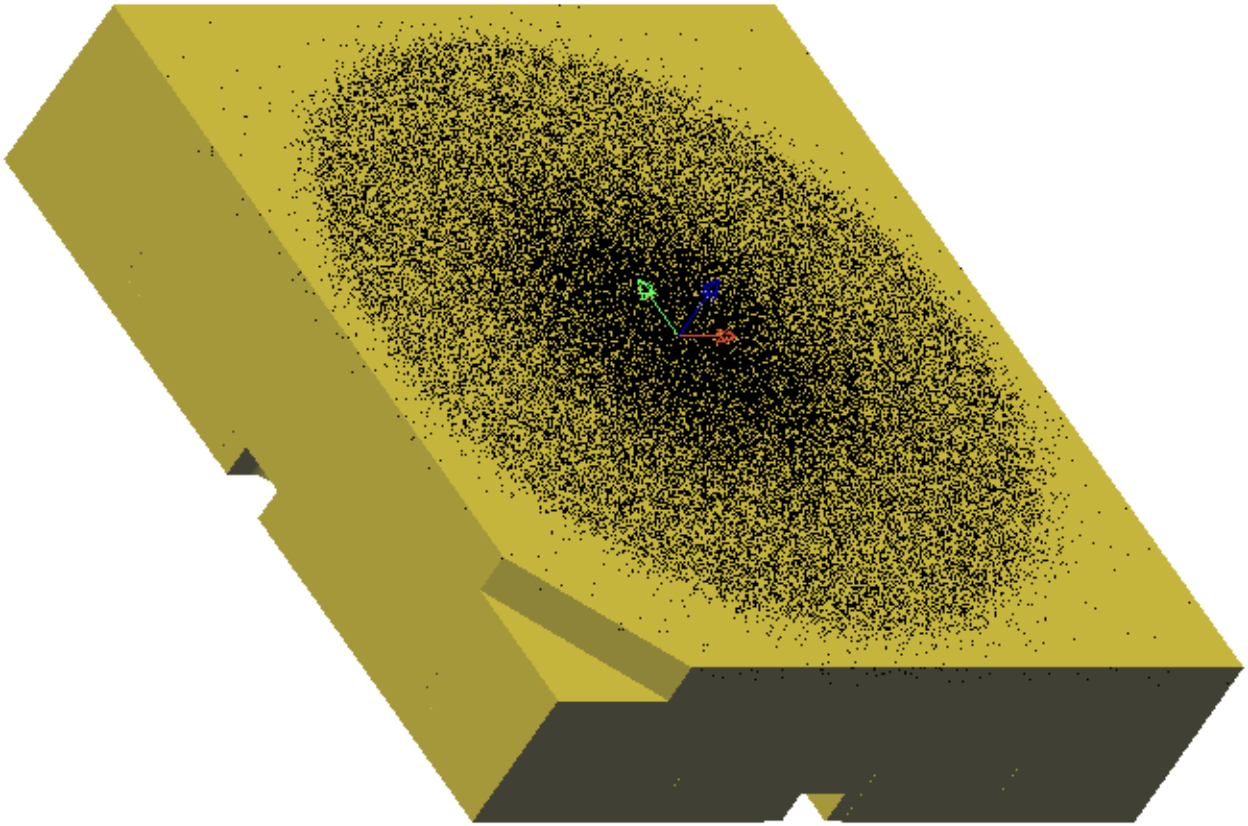
3D CAD view + ray starting points



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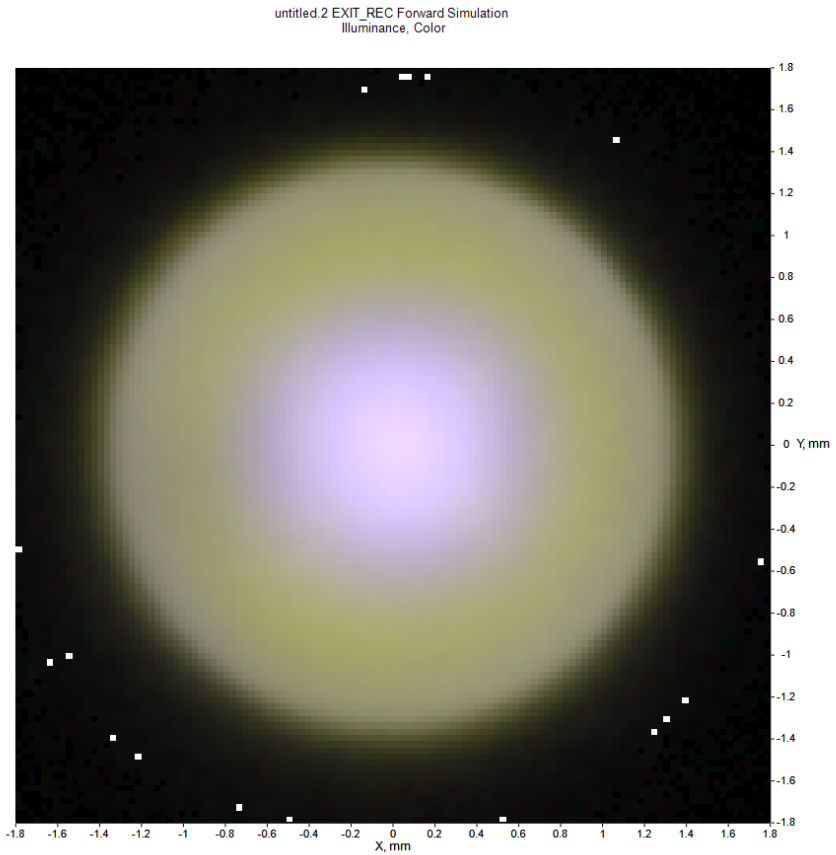
Illuminance color chart (color over position)



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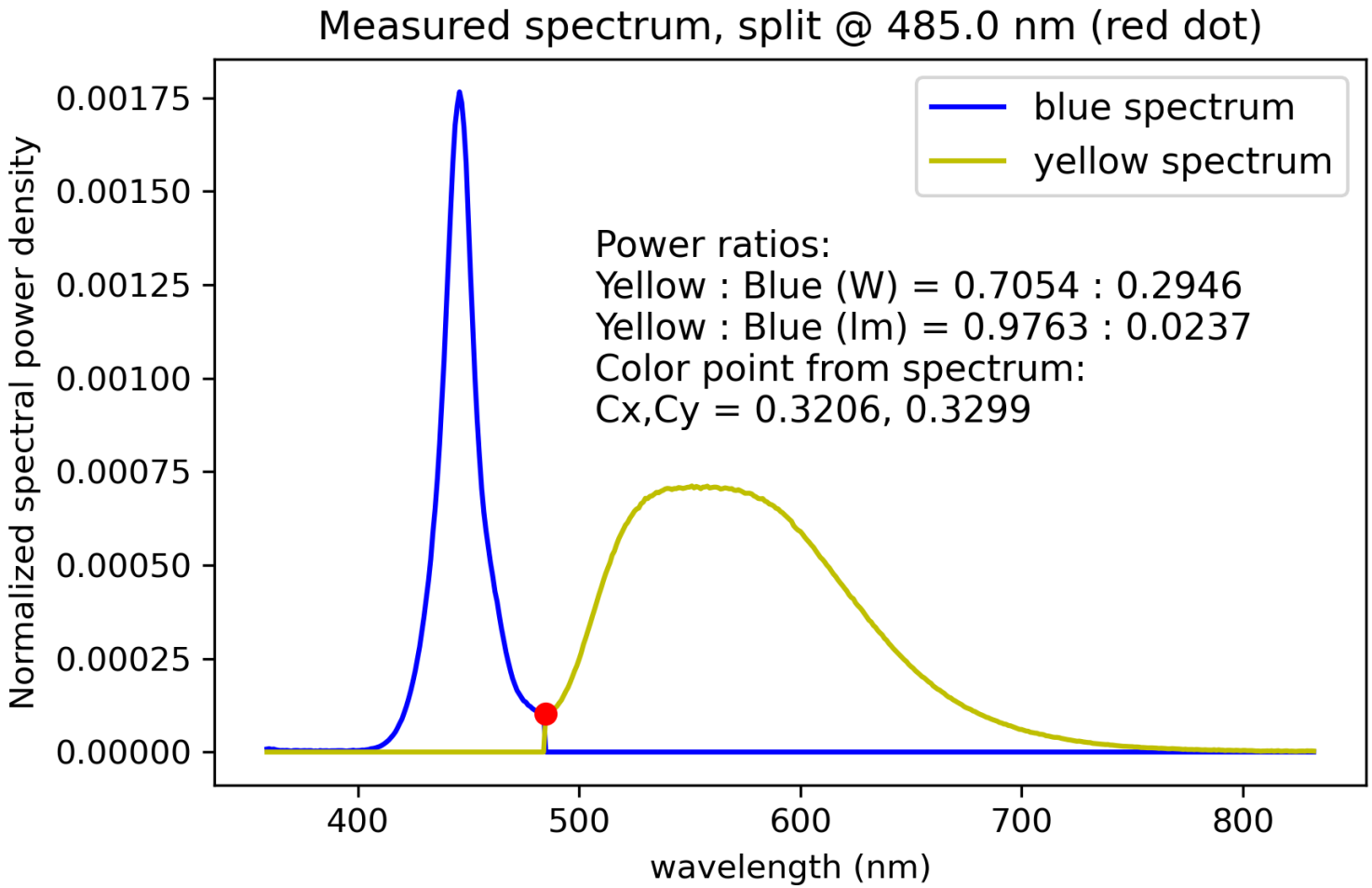
Measured spectrum split in blue (Z) and yellow (Y) components



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Color data info

Parameter	Value
yellow : blue ratio (W) (from measured spectrum)	0.7054 : 0.2946
yellow : blue ratio (lm) (from measured spectrum)	0.9763 : 0.0237
Average color point Cx, Cy (from measured spectrum)	0.3206, 0.3299
Average color point Cx, Cy (from simulation)	0.3204, 0.3296
Color point Cx, Cy @ HV (from simulation)	0.3219, 0.3321
Average CCT (K) (from simulation)	6.091e+03

Lumileds ref.: SJ000499_LUXEON Versat 3030 0.5 W CoolWhite_20170330

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