

Light Measurement Report

Print date: 2024-12-19
Measurement date and time: 2024-12-19 11:49:10 AM – Measurement no. VFR-241219-0000-MS
Measurement tracking No. and Link: [n/a](#)
Operator: NC



Laboratory and Equipment

Laboratory Owner and Location	Moss LED, Toronto, Ontario, Canada
Goniospectrometer System and Type	BaseSpion – Type C, horizontal
Sensor Name, Calibr. Date and Serial No.	BaseSensor – 2023-06-27 – 2807073281
Spectrometer Manufacturer and Model	Ibsen Photonics, Denmark – Freedom VIS (Custom Viso)

Measurement Conditions

Number of C-planes and Resolution	12 planes – 30°
γ (gamma)-Resolution	5°
Test Distance	4.50 m
Input Power per 1 meter	11.6 W
Input RMS Voltage and Current per 1 meter	12.0 V – 0.965 A
Frequency of Input Power	0 Hz

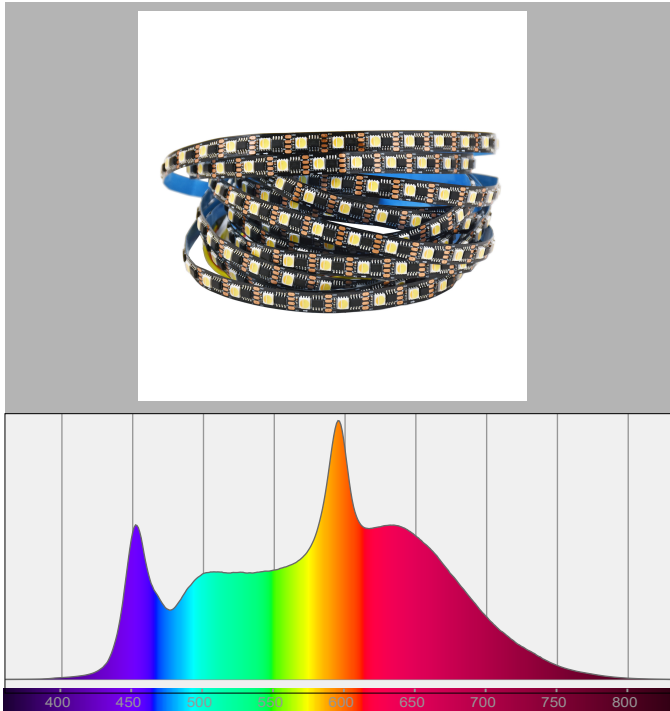
Tested Light Source

Product Name_Type of Test / Manufacturer	I12VW300GS8208-B ALL / MossLED Inc.
Product Description, Test details	12V, WW+CW+A, 60 LPM, ALL TEST

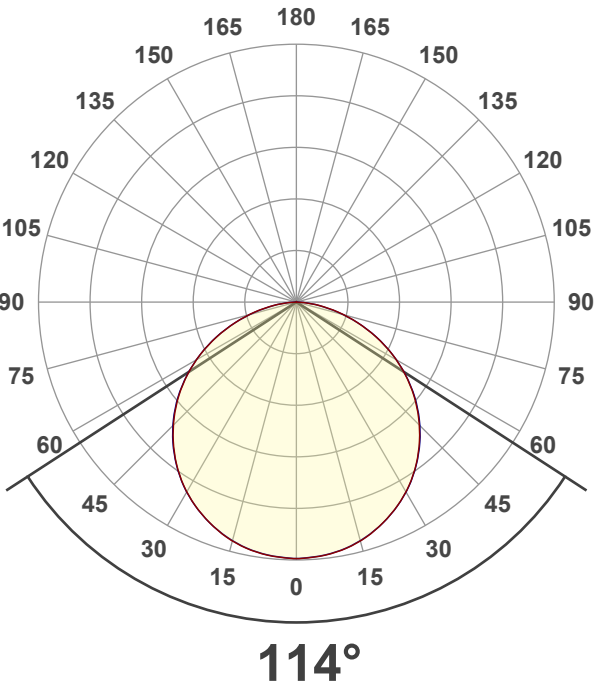
Main Light Measurement Results

Total Lumen Output per 1 meter	598 lm
Efficiency	52 lm/W
Peak Intensity and Beam Angle	201 cd – 114°
Correlated Color Temperature, Straight-on / Average	CCT = 3450 K / 3355 K
Color Rendering Index	CRI 88.0
Color Rendering TM30-18	R _f 90.0 – R _g 97.5
Color Shift, CIE duv and MacAdam Steps	Duv -0.0070 – SDCM 5.8
Flicker	SVM n/a – PstLM n/a

Product picture:



50% Beam Angle (absolute values)

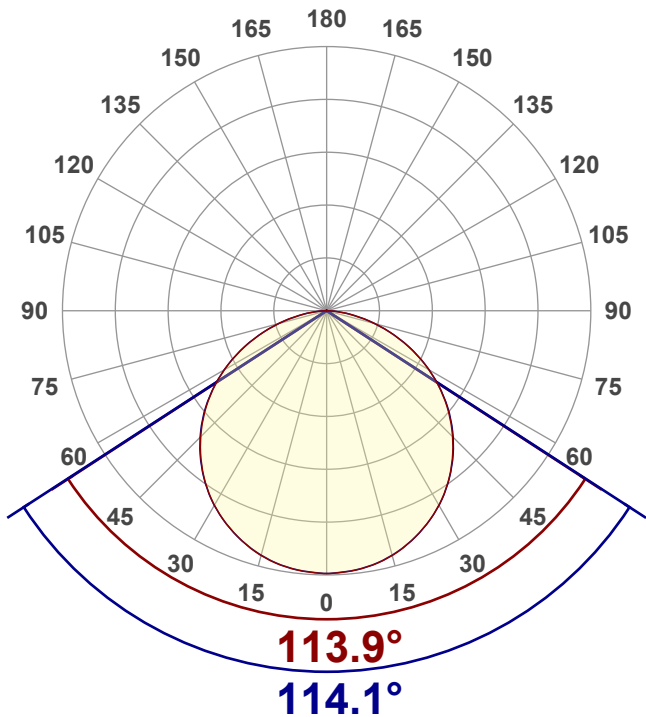


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Luminous Intensity diagram Unit: 0-100% of peak intensity



Main Values	
Output (total Lumen)	598 lm
Peak Intensity	201 cd
Beam Angle (50%)	114°
Beam Angle (90%)	114.1°
Beam Angle (10%)	113.9°

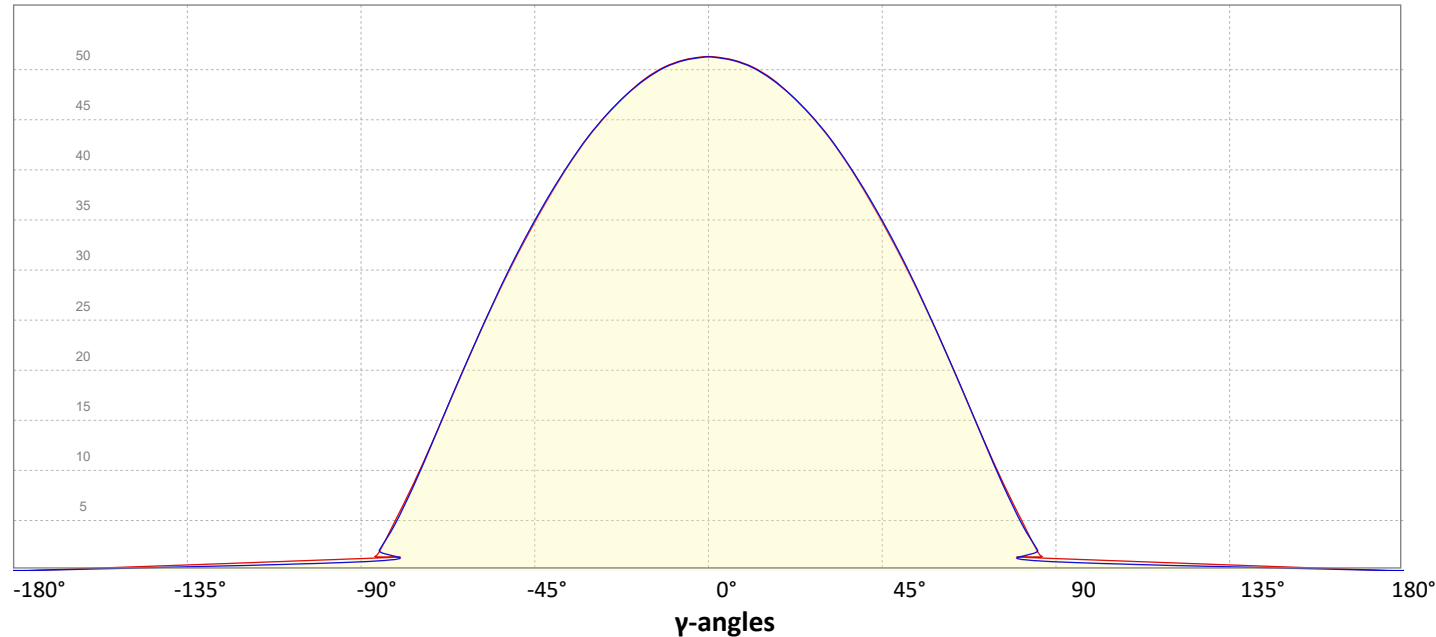
Cut-off Angle	
Average 2,5%	179.5°

Field Angle	
Average 10%	161.5°

Intensity Ratio	
In 120° cone	76.8%
In 90° cone	52.0%

C000-C180 Horizontal
C090-C270 Vertical

Linear distribution diagram - Intensity (candela) vs γ-angle



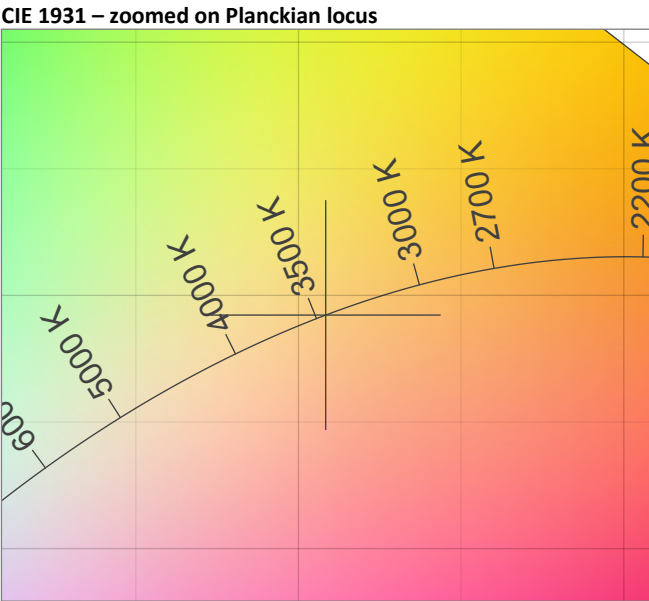
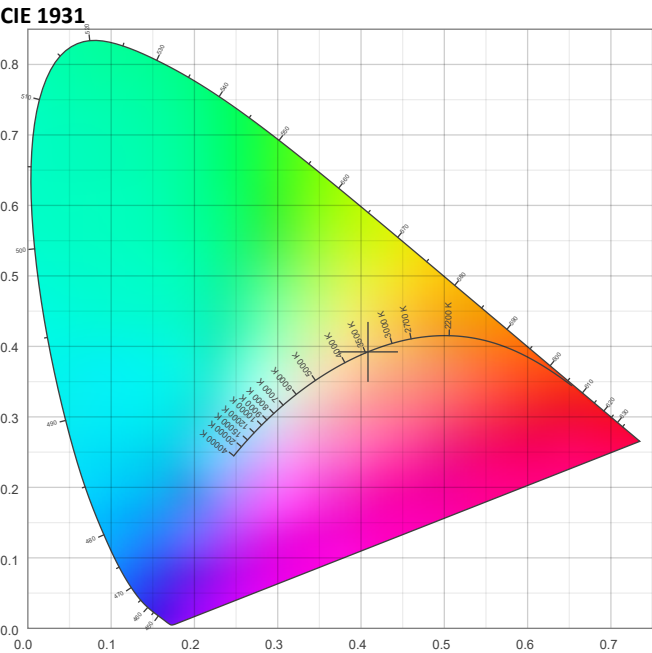
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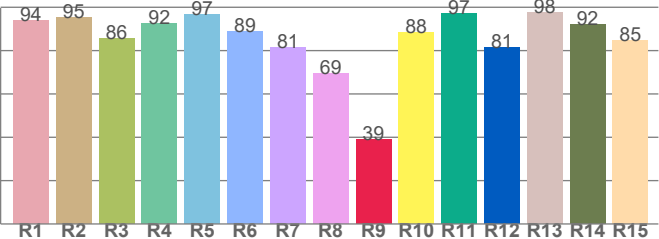


Color details

Correlated Color Temperature, Target	CCT = 3450 K	MacAdam Steps	SDCM = 5.8
Correlated Color Temperature, Measured	CCT = 3355 K	Color coordinates CIE 1931	(x;y) = (0.408;0.392)
Color Rendering Index	CRI 88.0	Color coordinate CIEs 1960	(u;v) = (0.237;0.342)
Color Rendering Index, R9 (red component)	R9 = 38.9	Color deviation from BBL	Duv = -0.0070
Color Rendering TM30-18	Rf 90.0 – Rg 97.5	Color coordinate CIEs 1976 (CIELUV)	(u';v') = (0.237;0.237)
Color Quality Scale	CQS = 89.7		



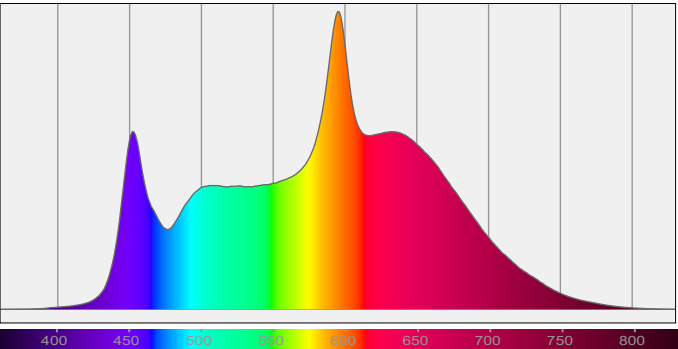
Color Rendering Index per reference color (CIE 1995)



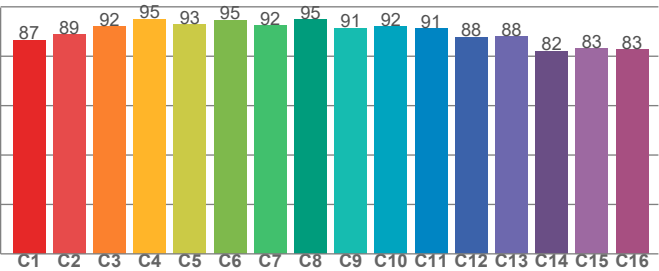
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
93.9	95.3	85.8	92.5	96.7	88.8	81.3	69.4	38.9	88.4	97.3	81.4	97.7	92.1	84.8

Spectral power distribution (SPD) / W/nm – 0-100%



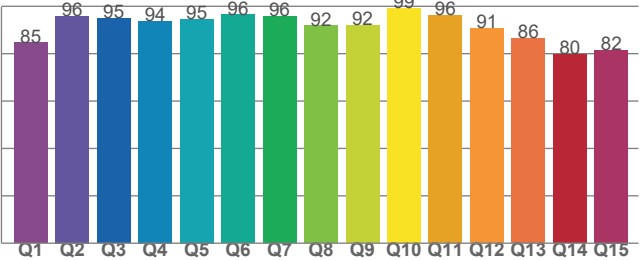
TM30-18 Rf-values per hue bin



TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
86.6	88.8	91.9	95.1	92.8	94.6	92.4	94.9	91.4	92.2	91.2	87.7	88.1	82.1	83.0	82.7

Color Quality Scale by reference color

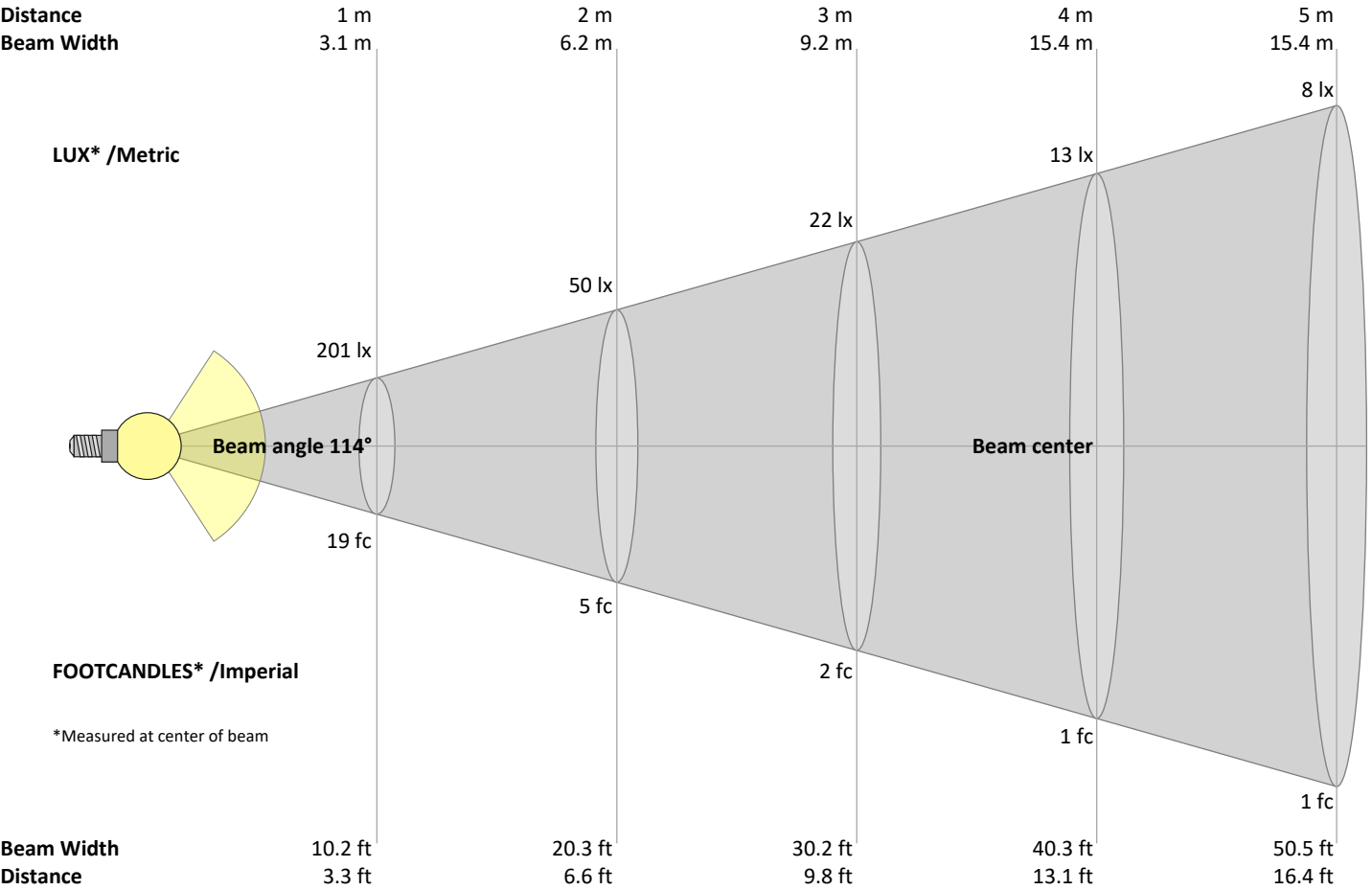


CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
84.6	95.9	95.0	93.8	94.7	96.4	95.8	91.8	92.0	99.0	96.2	90.7	86.4	79.6	81.6

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Beam intensities from 1 – 20 m

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	m
3.3	6.6	9.8	13.1	16.4	19.7	23	26.2	29.5	32.8	36.1	39.4	42.7	45.9	49.2	52.5	55.8	59.1	62.3	65.6	ft
201	50	22	13	8	6	4	3	2	2	2	1	1	1	1	1	1	1	1	1	lux
18.7	4.7	2.1	1.2	0.7	0.5	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	fc

Power Details

Input Power

Power feed to light source	11.6 W
Frequency of input power	0 Hz
RMS Input voltage feed, V_{RMS}	12.0 V
RMS Input current feed, I_{RMS}	0.965 A
Volt-Ampere or apparent power = $V_{RMS} * I_{RMS}$	11.58 VA
Displacement factor of AC power feed	n/a
Power factor of AC current feed	1.0
Total harmonic distortion of the current	n/a%
Total harmonic distortion of the voltage	n/a%

Efficiency

Radiated power efficiency	18.5%
Lumen efficiency	52 lm/W