

Light Measurement Report

Print date: 2024-12-19
Measurement date and time: 2024-12-19 1:08:33 PM – Measurement no. VFR-241219-0002-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	11.9 W
Input RMS Voltage and Current per 1 meter	12.0 V – 0.988 A
Frequency of Input Power	0 Hz

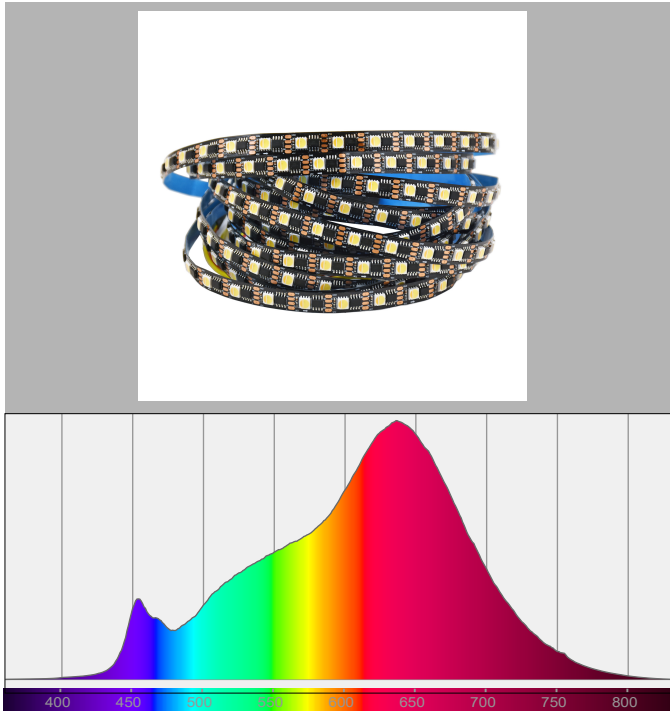
Tested Light Source

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

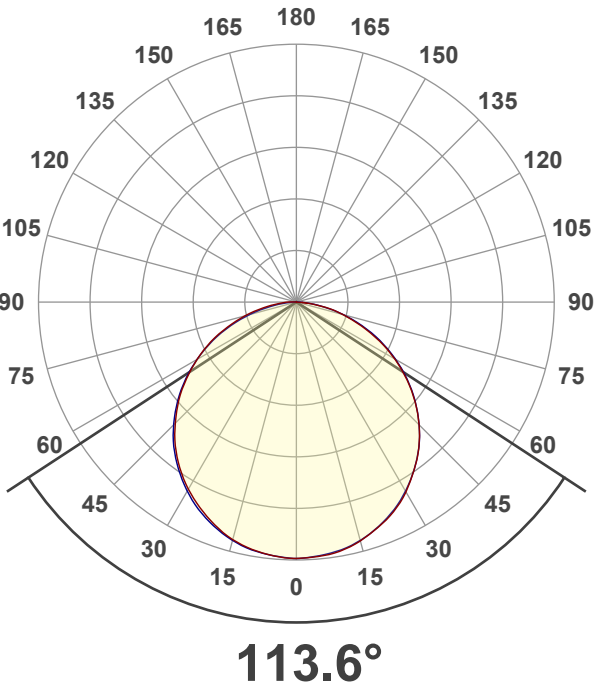
Main Light Measurement Results

Total Lumen Output per 1 meter	228 lm
Efficiency	19 lm/W
Peak Intensity and Beam Angle	77.7 cd – 113.6°
Correlated Color Temperature, Straight-on / Average	CCT = 2650 K / 2648 K
Color Rendering Index	CRI 96.7
Color Rendering TM30-18	R _f 94.8 – R _g 101.2
Color Shift, CIE duv and MacAdam Steps	Duv -0.0014 – SDCM 1.5
Flicker	SVM n/a – PstLM n/a

Product picture:



50% Beam Angle (absolute values)



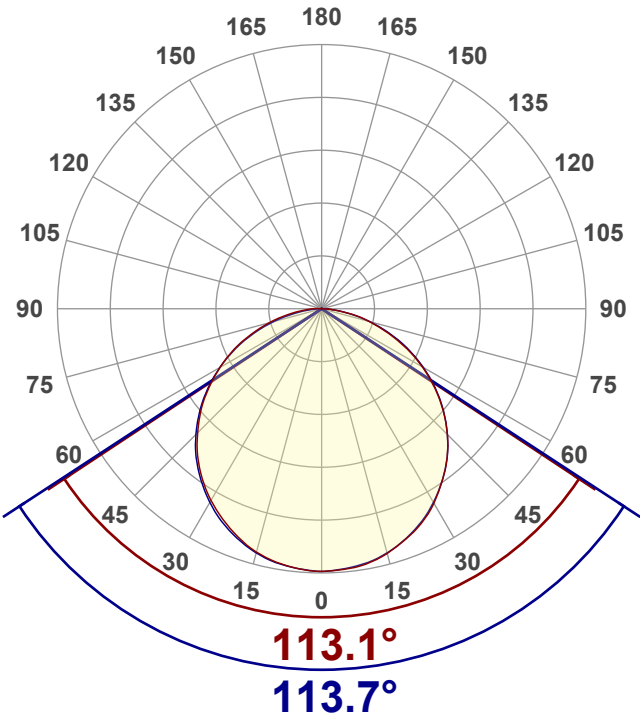
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Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

Output (total Lumen)	228 lm
Peak Intensity	77.7 cd
Beam Angle (50%)	113.6°
Beam Angle (90%)	113.7°
Beam Angle (10%)	113.1°

Cut-off Angle

Average 2,5%	176.2°
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Field Angle

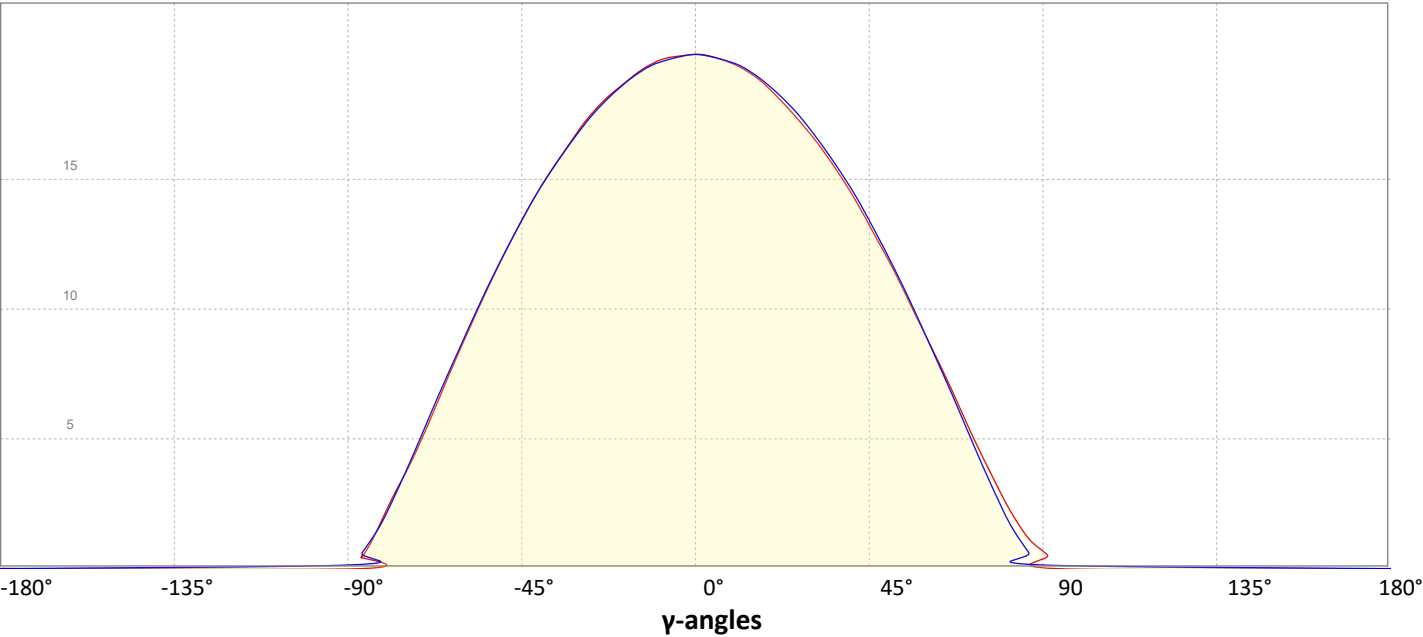
Average 10%	163.1°
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Intensity Ratio

In 120° cone	77.2%
In 90° cone	52.3%

C000-C180 Horizontal
C090-C270 Vertical

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



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Color details

Correlated Color Temperature, Target

Correlated Color Temperature, Measured

Color Rendering Index

Color Rendering Index, R9 (red component)

Color Rendering TM30-18

Color Quality Scale

CCT = 2700 K

CCT = 2648 K

CRI 96.7

R9 = 98.4

R_f 94.8 – R_g 101.2

CQS = 95.3

MacAdam Steps

Color coordinates CIE 1931

Color coordinate CIEs 1960

Color deviation from BBL

Color coordinate CIEs 1976 (CIELUV)

SDCM = 1.5

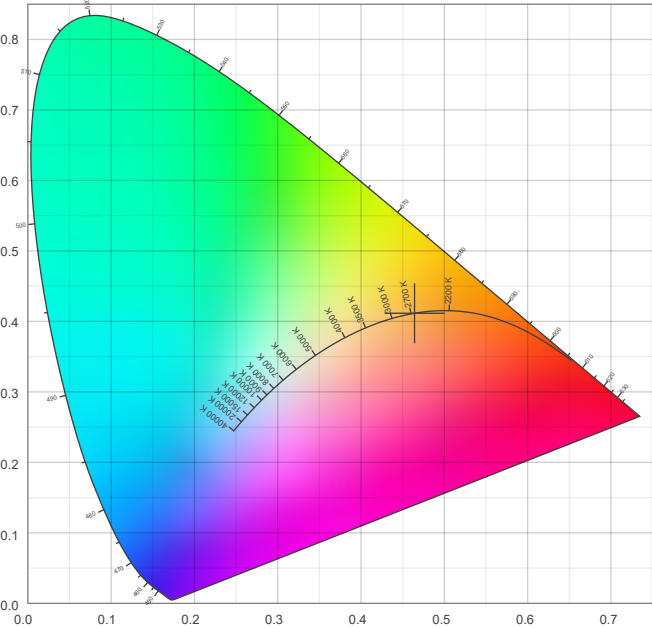
(x;y) = (0.464;0.412)

(u;v) = (0.265;0.352)

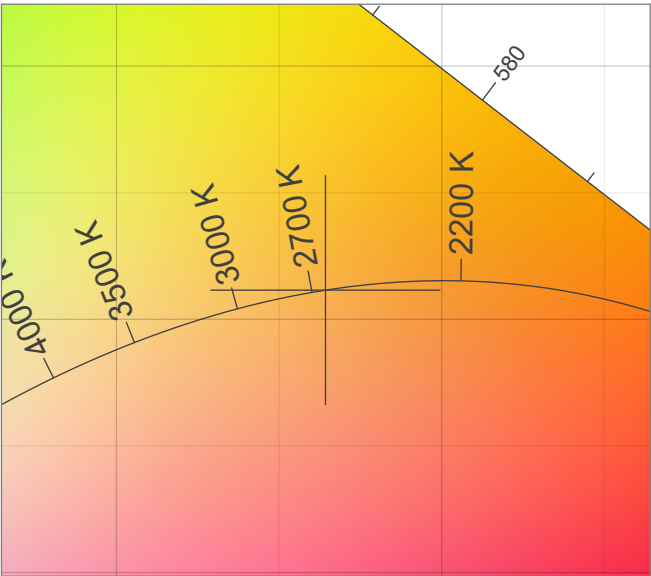
Duv = -0.0014

(u';v') = (0.265;0.265)

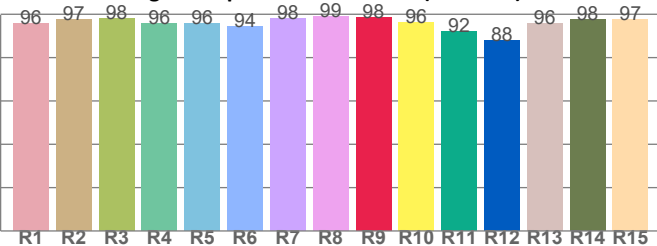
CIE 1931



CIE 1931 – zoomed on Planckian locus

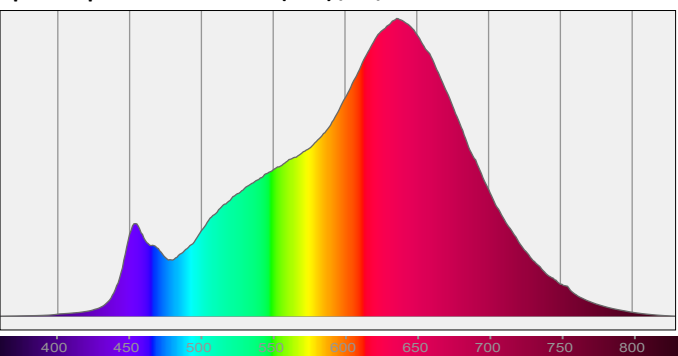


Color Rendering Index per reference color (CIE 1995)

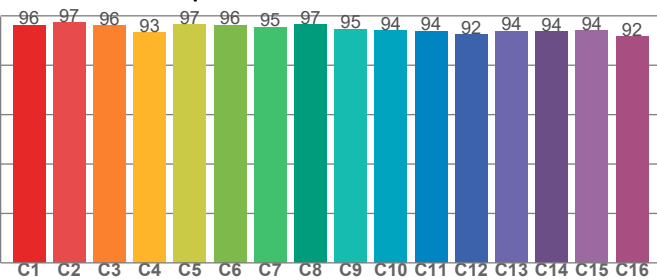


CRI R values, only R1-R8 are used to calculate final CRI value														
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
95.7	97.4	98.0	95.7	95.7	94.3	98.2	98.9	98.4	96.3	92.1	88.0	95.6	97.5	97.5

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

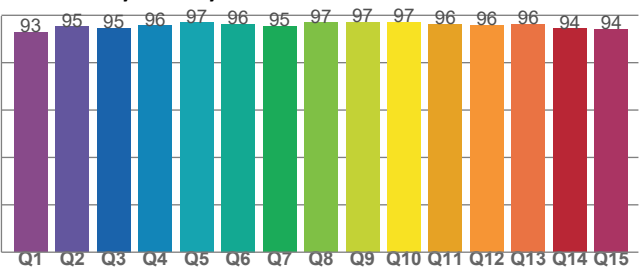


TM30-18 Rf-values per hue bin



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
96.3	97.3	96.0	93.3	96.5	96.3	95.4	96.6	94.7	94.1	93.9	92.4	93.8	93.6	93.9	91.6

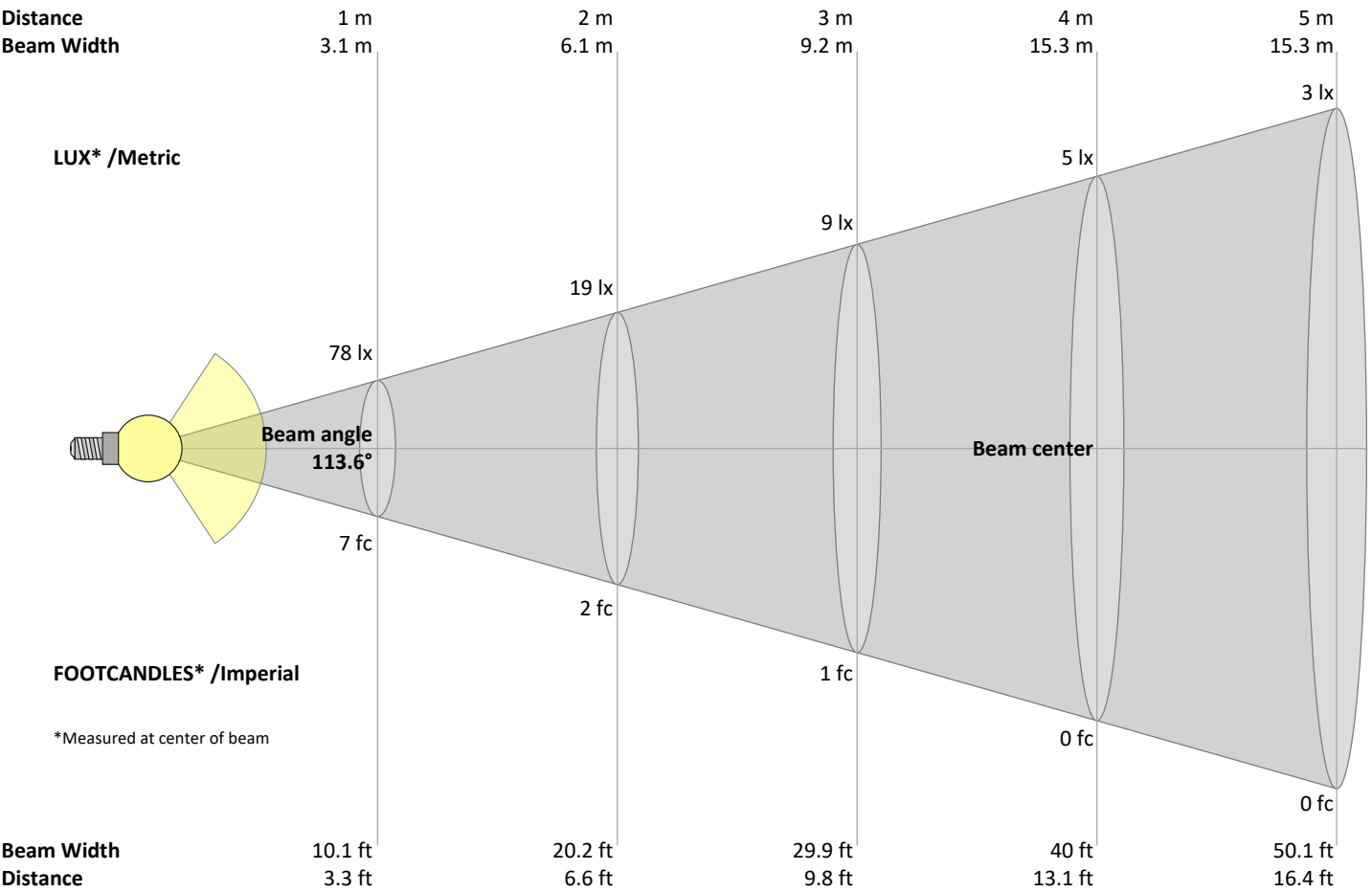
Color Quality Scale by reference color



CQS Q values														
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
92.8	95.2	94.7	95.6	96.8	96.4	95.3	96.9	97.0	97.1	96.2	95.8	96.4	94.3	94.2

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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
78	19	9	5	3	2	2	1	1	1	1	1	0	0	0	0	0	0	0	0	lux
7.2	1.8	0.8	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	fc

Power Details

Input Power

Power feed to light source	11.9 W
Frequency of input power	0 Hz
RMS Input voltage feed, V_{RMS}	12.0 V
RMS Input current feed, I_{RMS}	0.988 A
Volt-Ampere or apparent power = $V_{RMS} * I_{RMS}$	11.86 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	7.7%
Lumen efficiency	19 lm/W