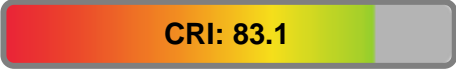


Light efficiency:



Output: 6562 lm

Light quality:



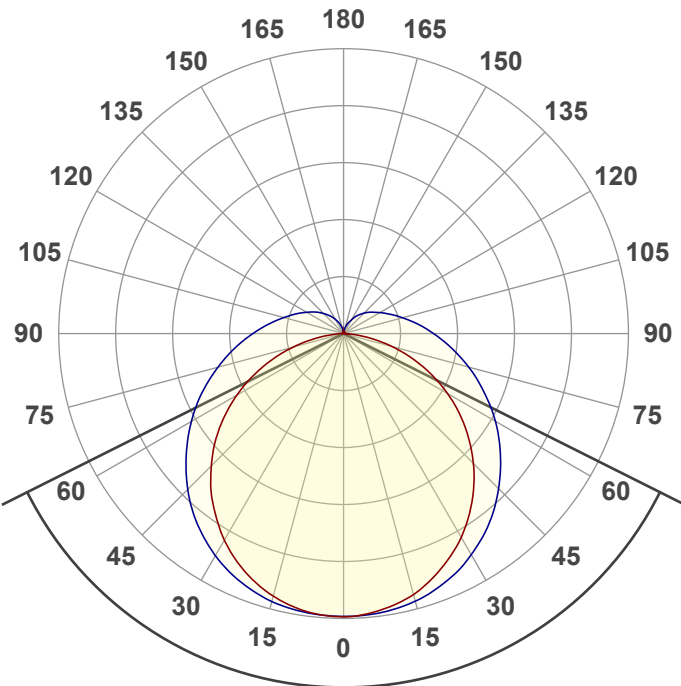
Peak: 1631 cd

Color temperature:



Power: 45.3 W

PF: 1.0



Product name:
LSFDS-TWC345-BLE

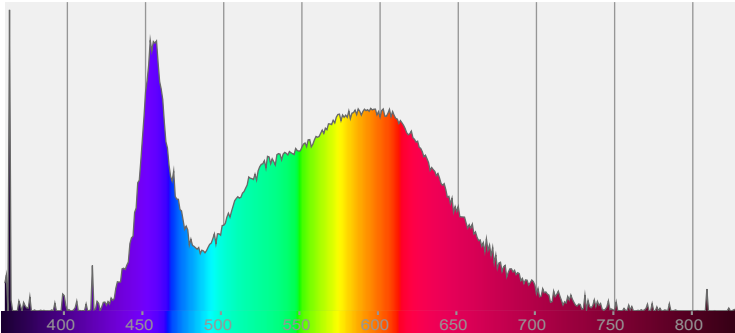
Date and time:
6/13/2022 2:42:19 PM

Beam angle **126.7°**

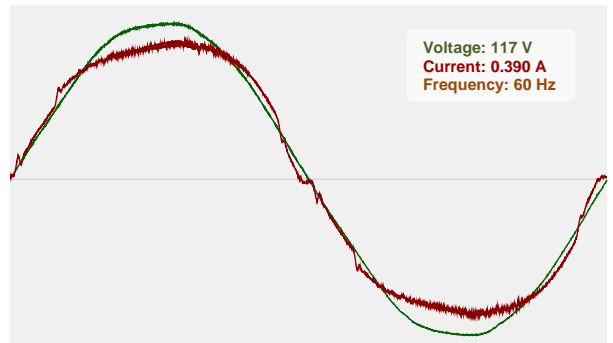


CIE 1931
x: 0.374
y: 0.371

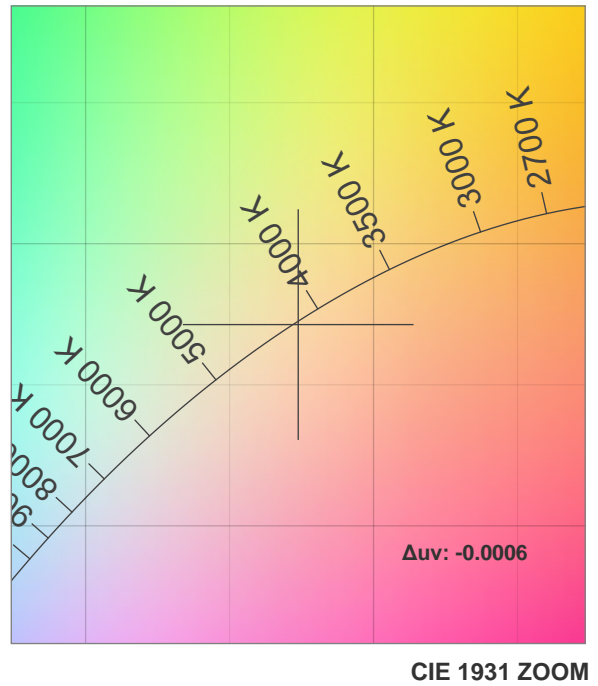
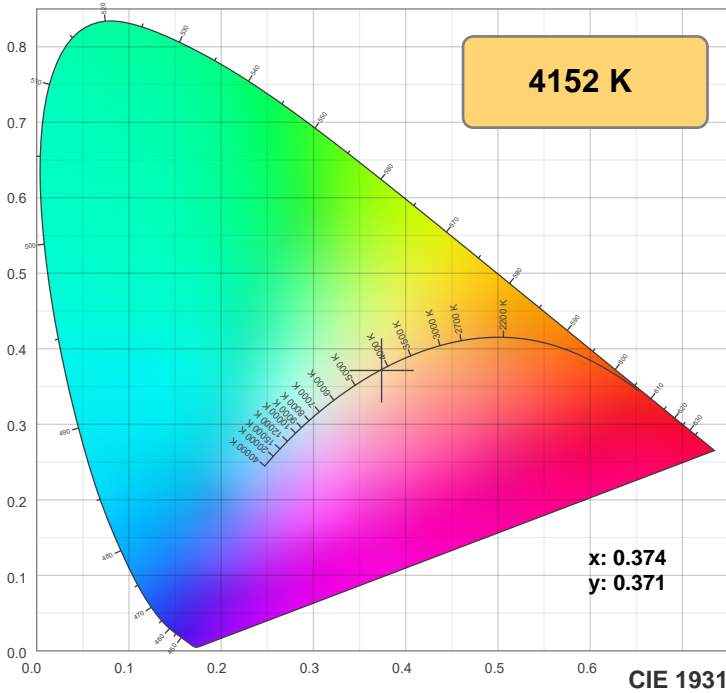
Spectra



Power

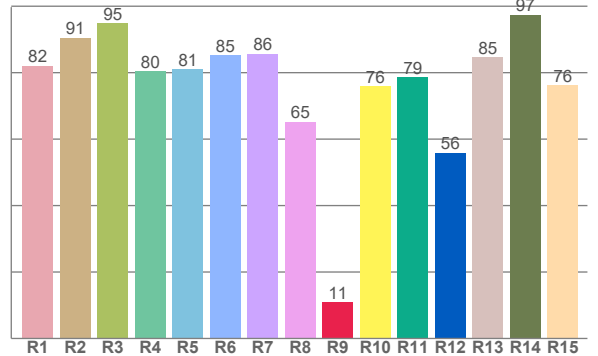
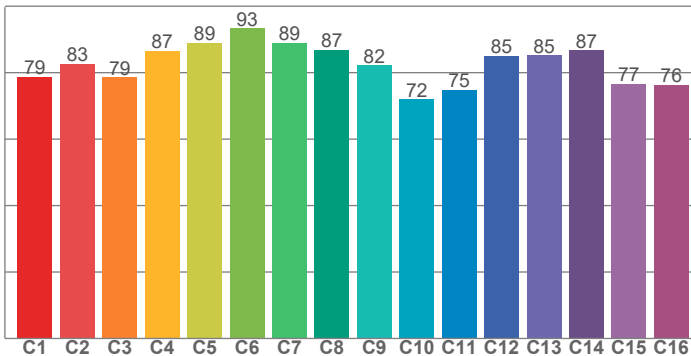


Color Specifications



TM30: 82.4

CRI: 83.1 (R1-R8)



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
82.1	90.6	94.8	80.4	81.0	85.3	85.7	65.2	10.9	75.9	78.7	55.9	84.6	97.4	76.1

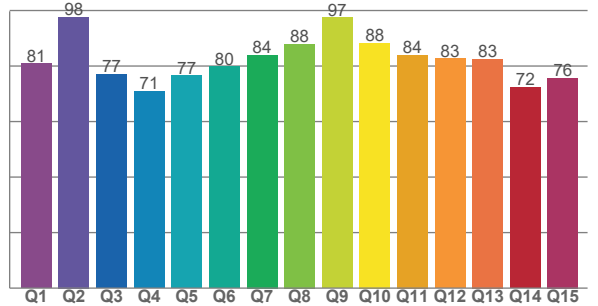
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
78.7	82.6	78.6	86.5	89.0	93.4	89.0	86.8	82.2	72.0	74.9	85.0	85.2	86.7	76.7	76.4

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80.8	97.6	77.0	70.9	76.6	79.8	84.0	87.9	97.3	88.3	84.0	82.7	82.6	72.3	75.7

CQS: 80.9



Color parameters

Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
4152 K	83.1	10.9	82.4	93.9	80.9	0.374	0.371	0.223	0.332	-0.0006

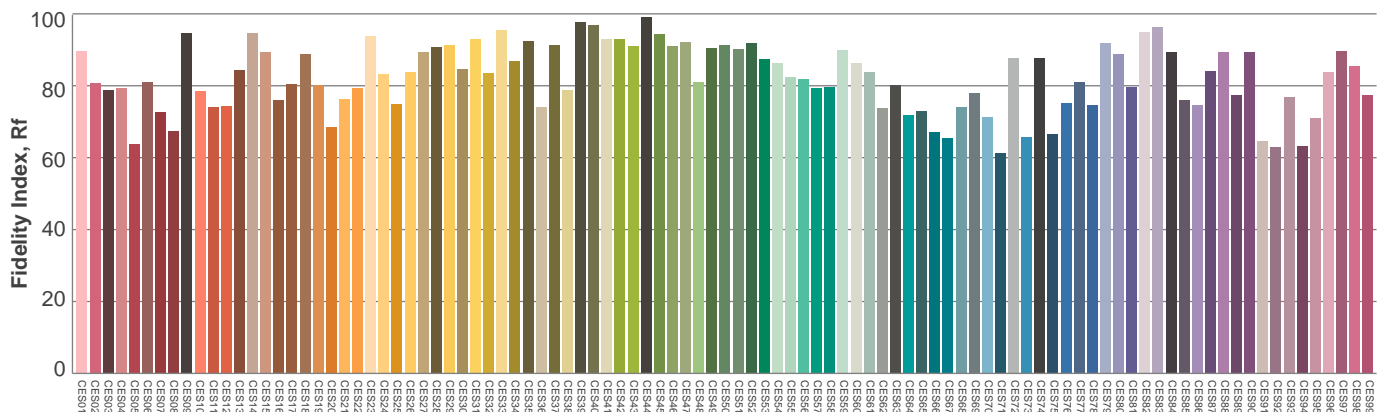
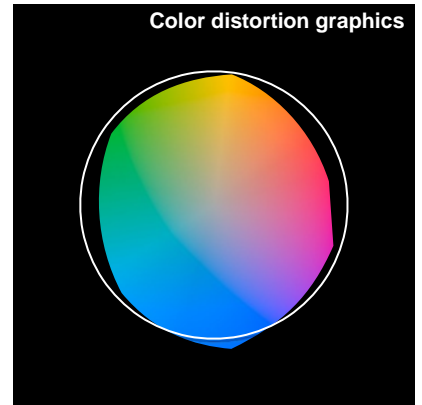
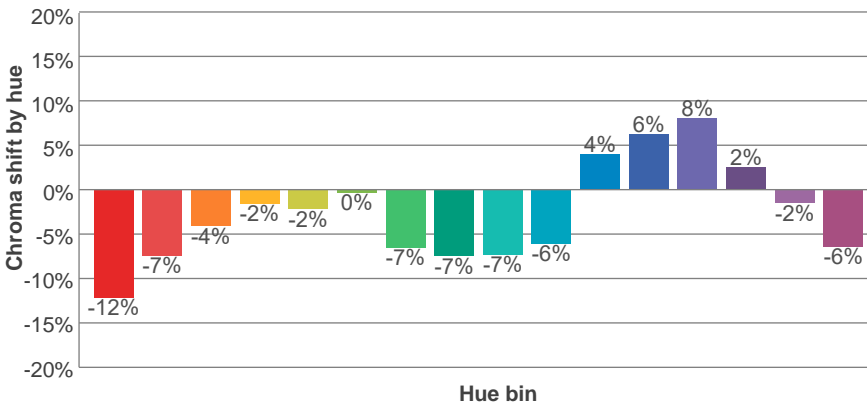
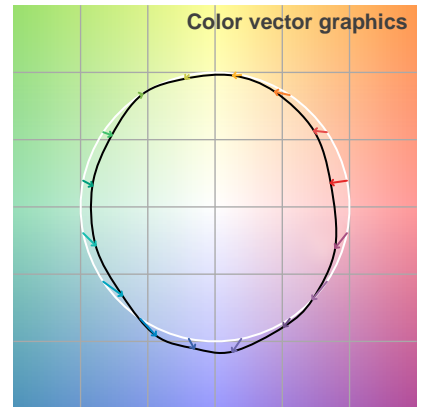
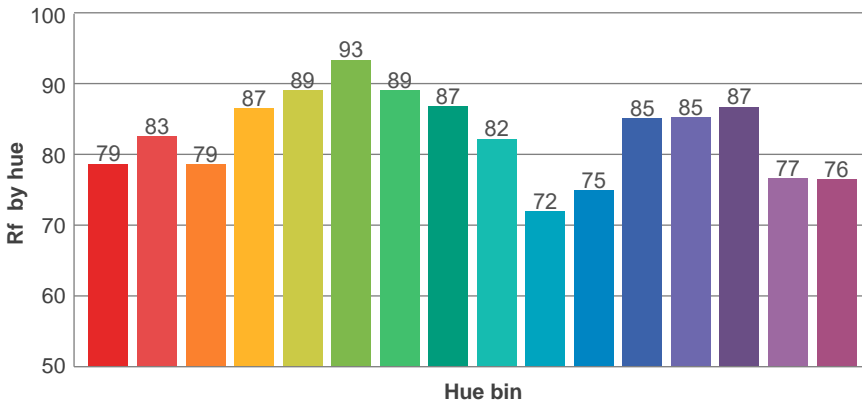
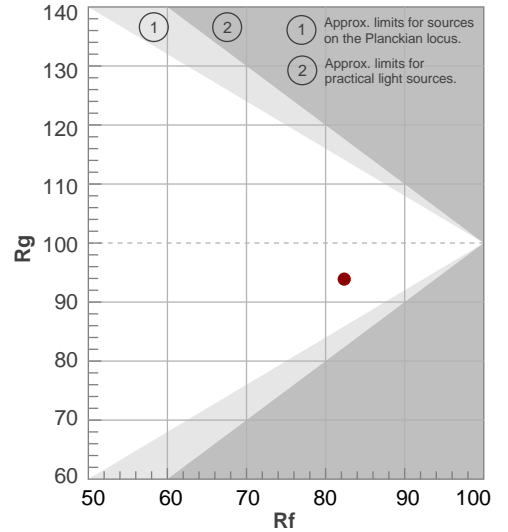


TM30 Report

Rf 82.4
Fidelity index Rf

Rg 93.9
Gammut index Rg

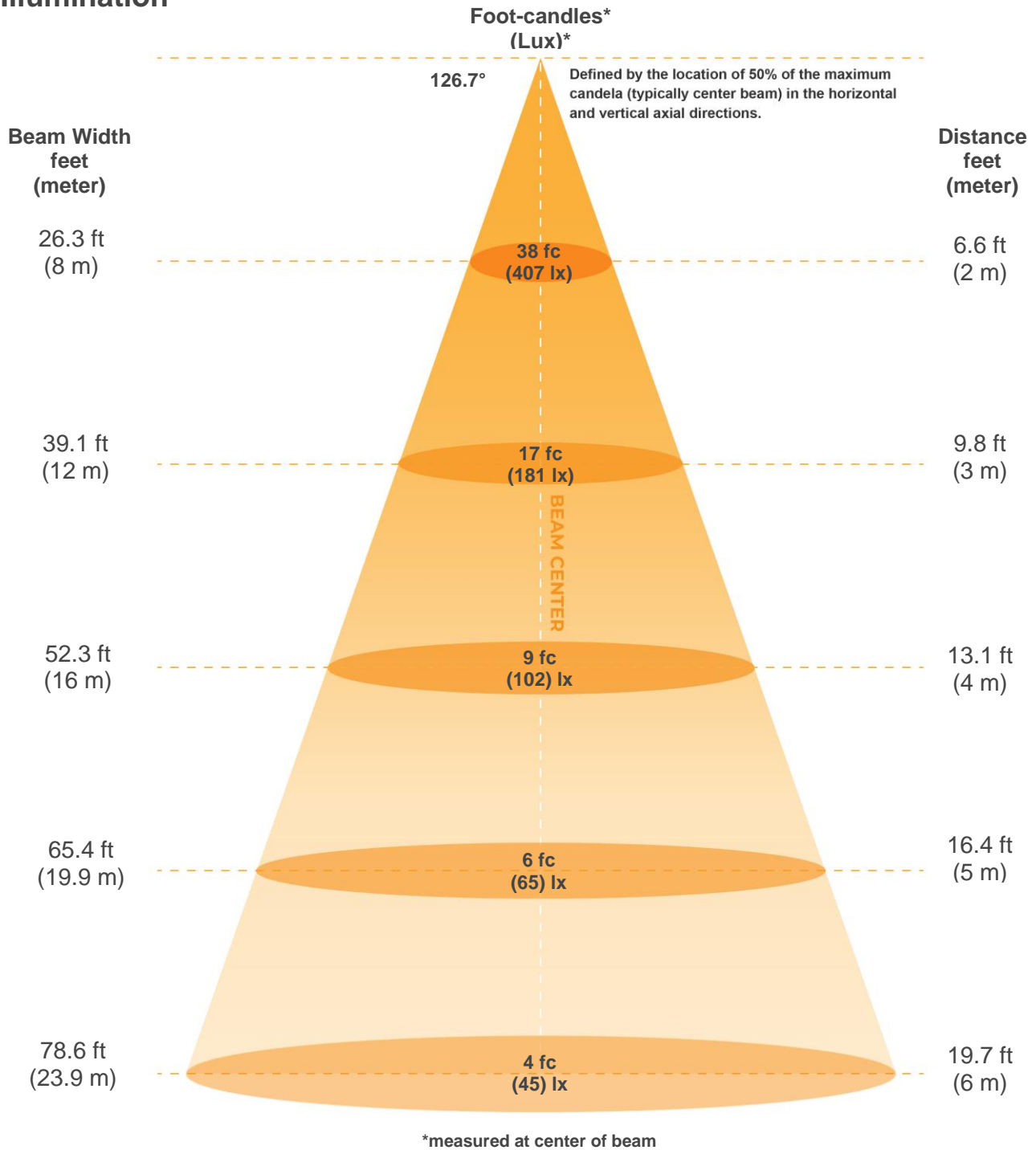
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	79	-12%	1%
2	83	-7%	6%
3	79	-4%	10%
4	87	-2%	6%
5	89	-2%	3%
6	93	0%	-2%
7	89	-7%	-2%
8	87	-7%	2%
9	82	-7%	11%
10	72	-6%	16%
11	75	4%	16%
12	85	6%	5%
13	85	8%	-8%
14	87	2%	-7%
15	77	-2%	-17%
16	76	-6%	-12%



Color Evaluation Sample



Illumination



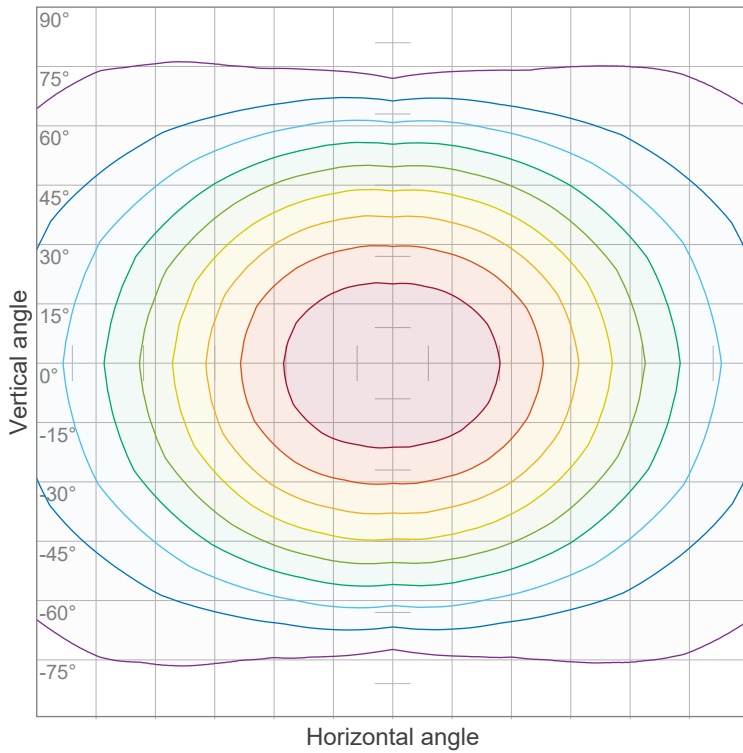
Beam intensities from 1-20m

m	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ft	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
lux	1628	407	181	102	65	45	33	25	20	16	13	11	10	8	7	6	6	5	5	4
fc	151.3	37.8	16.8	9.5	6.1	4.2	3.1	2.4	1.9	1.5	1.3	1.1	0.9	0.8	0.7	0.6	0.5	0.5	0.4	0.4

Beam angle 50%	Field angle 10%	Cutoff Angle 2.5%	Intensity Ratio in 120° cone	Intensity Ratio in 90° cone
126.7°	222.3°	286.8°	59.6%	39.4%



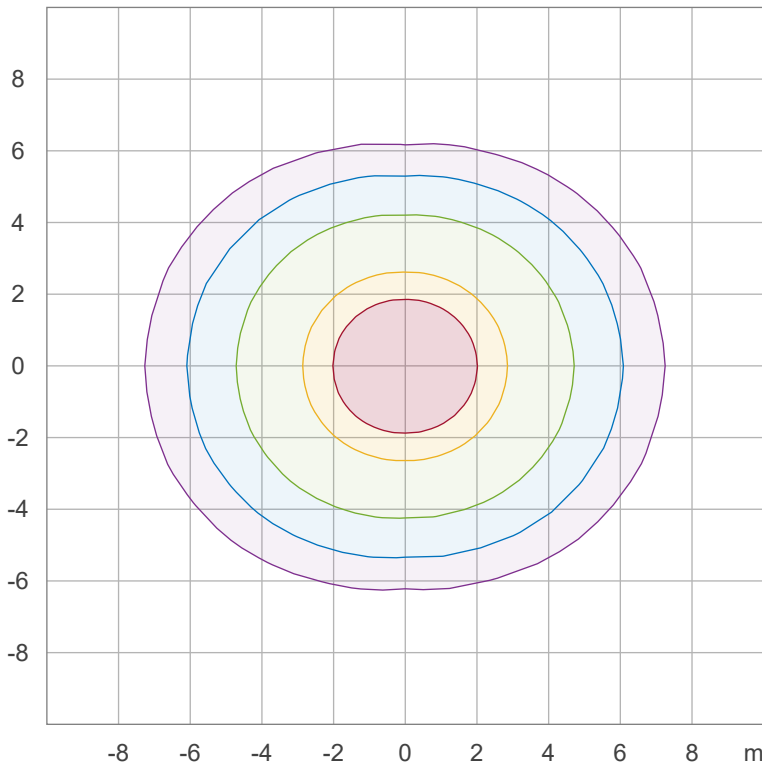
Iso-intensity Diagram (Iso-candela)



90 %	1467.9 cd
80 %	1304.8 cd
70 %	1141.7 cd
60 %	978.6 cd
50 %	815.5 cd
40 %	652.4 cd
30 %	489.3 cd
20 %	326.2 cd
10 %	163.1 cd

Peak intensity: 1630.9 cd
 Number of c-planes: 16

Iso-illuminance Diagram (Iso-lux)



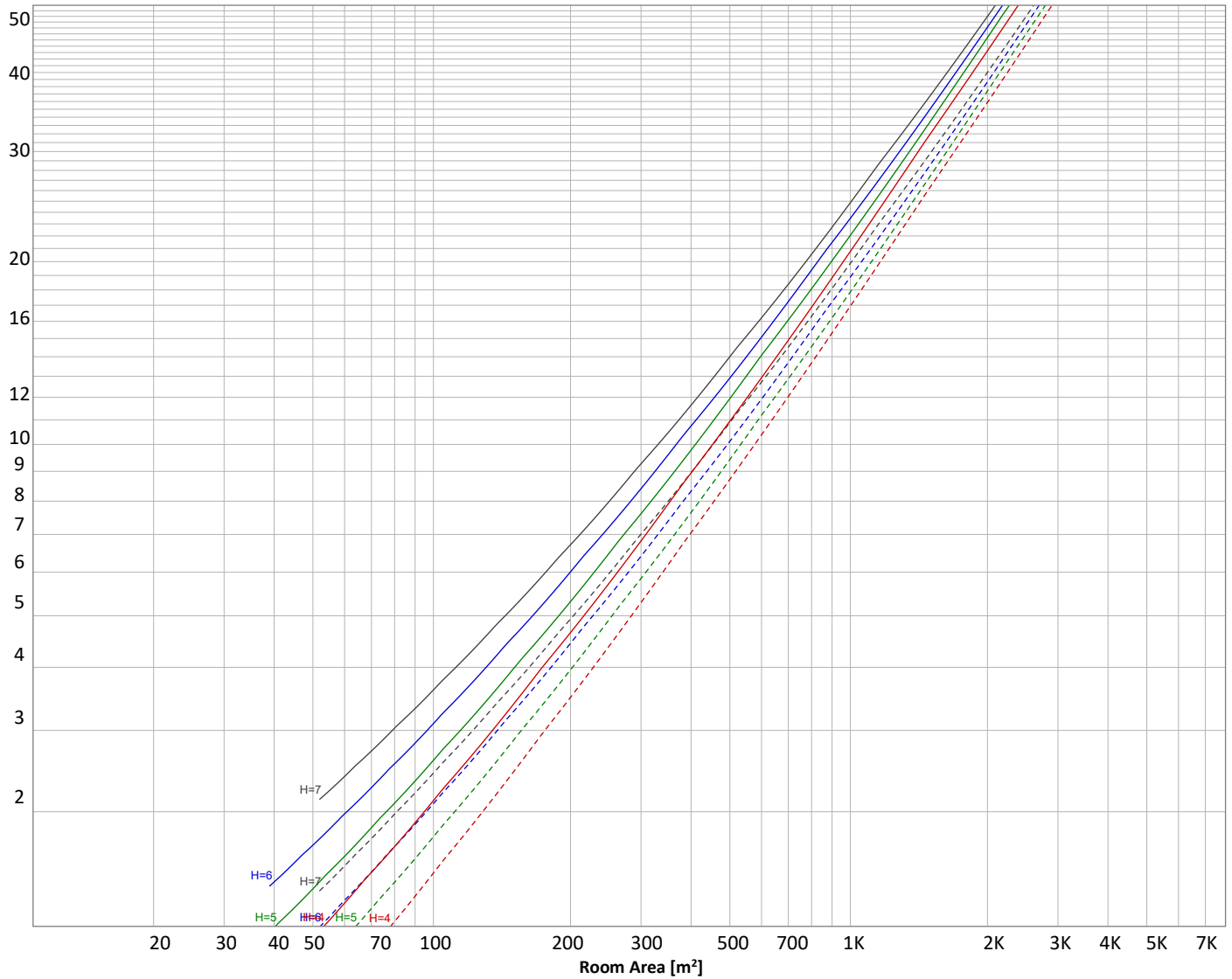
50.0 %	90.6 lx
30.0 %	54.3 lx
10.0 %	18.1 lx
5.0 %	9.1 lx
3.0 %	5.4 lx

Peak illuminance: 181.1 lx
 Mounting height: 3.0 m
 Number of c-planes: 16



Luminaire budgetary diagram

Uncorrected, comprehensive UGR table according to 117-1995
LAMPS (number of lamps)



Conditions

H = Room height	Flux = 6562 lm	ρ(%)			
H _{down} = Lamp distance from ceiling =	0.00 m	Line type	Ceiling reflectance	Wall reflectance	Floor reflectance
H _{work} = Work area height from floor =	0.00 m	-----	70	50	30
E _{work} = Average lux on work area =	100 lx	—————	50	30	20

Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
154 lm	446 lm	685 lm	845 lm	908 lm	873 lm	757 lm	585 lm	411 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
289 lm	209 lm	152 lm	108 lm	70.1 lm	40.3 lm	20.0 lm	7.18 lm	1.23 lm

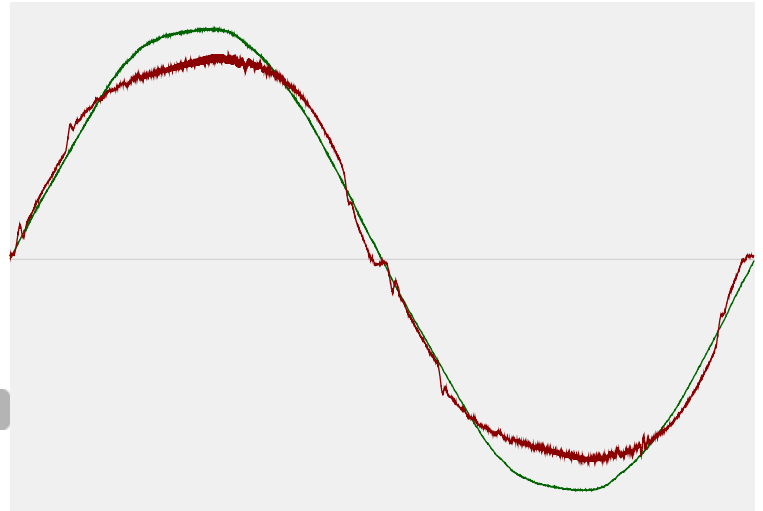


Power Details

Input Power

Power feed to light source	45.3 W
Frequency of input power	60 Hz
RMS Input voltage feed, V_{RMS}	117 V
RMS Input current feed, I_{RMS}	0.390 A
Volt-Ampere or apparent power = $V_{RMS} * I_{RMS}$	45.48 VA
Displacement factor of AC power feed	1.0
Power factor of AC current feed	1.0
Total harmonic distortion of the current	10.26%
Total harmonic distortion of the voltage	1.5%

Input Power Curve



Efficiency

Radiated power efficiency 44.3%



Lumen efficiency 145 lm/W



Stabilization Details

Warmup Conditions

Stable period	15 min
Stable change max	2.0%
Minimum time	15 min

Color Temperature Change

CCT start	4125 K
CCT shift	+27 K
CCT end	4152 K

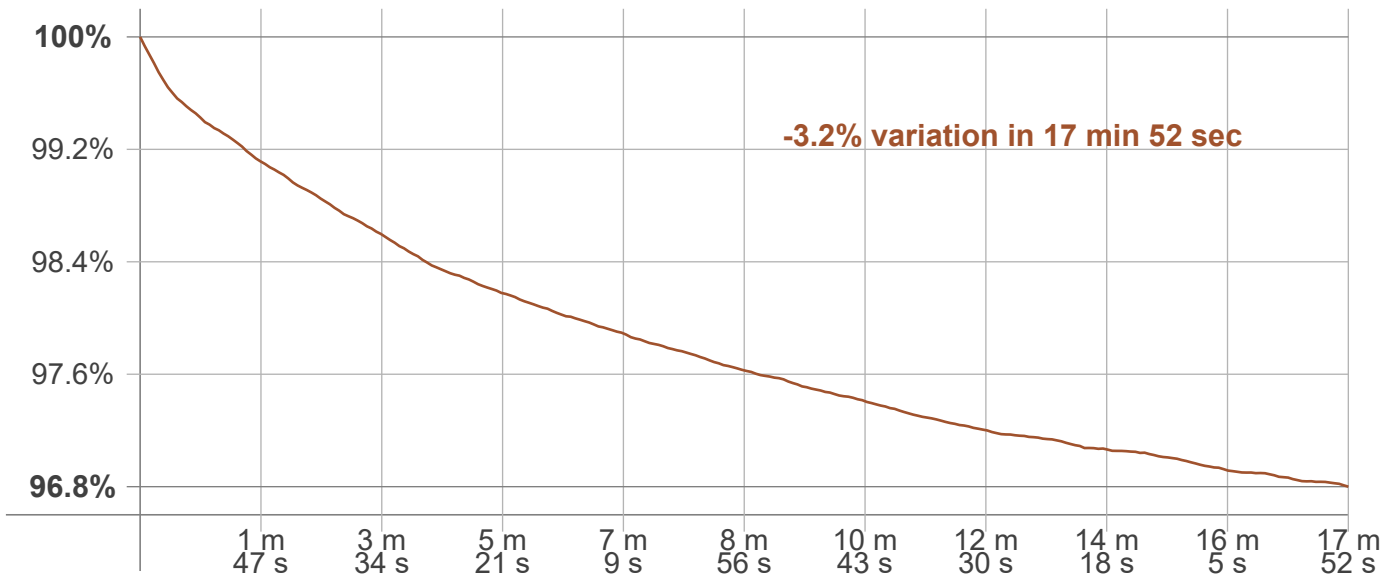
Warmup Result

Total warmup time	Lamp stabilized in 17 min 52 sec
Warmup variation	-3.2%

Output Change

Output start	6762 lm
Output change	-200 lm
Output end	6562 lm

Stabilization Curve



Flicker /TLA details



T 314.743.3067
 F 314.972.6202
 email: commercial-sales@superbrightleds.com
www.superbrightleds.com/

Flicker Meter Type Viso Systems LabFlicker
 Frequency of input power 60 Hz
 Flicker/TLA sample rate 20000 samples/s

Measurement time
 PstLM 180 sec
 All other indices 1.2 sec

Flicker indices according to Illuminating Engineering Society (IES)

Flicker frequency 120.48 Hz
 Percent Flicker 0.55 %
 Flicker index 0

Flicker indices per California Energy Commission (CEC) 2016b

JA8/10 40 Hz 0.1 %
 JA8/10 90 Hz 0.1 %
 JA8/10 200 Hz 0.53 %
 JA8/10 400 Hz 0.53 %
 JA8/10 1000 Hz 0.54 %

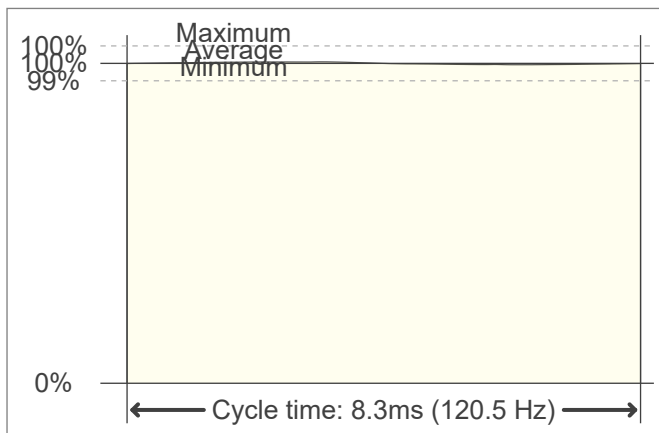
TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC 61000-4-15)

PstLM value (F < 80 Hz) 0.14
 SVM value (80 < F < 2000 Hz) 0.02

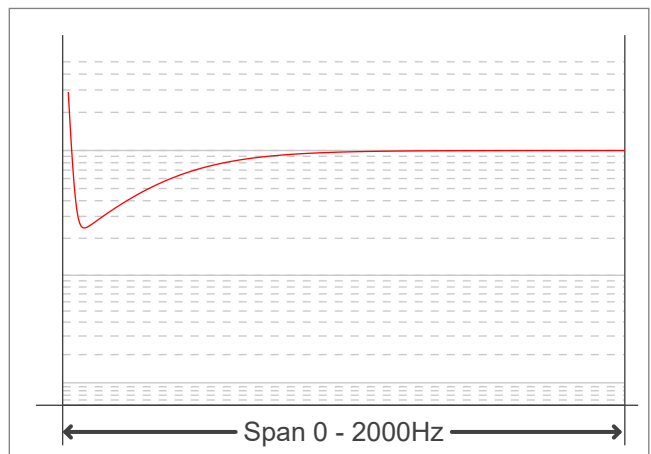
Flicker indices according to Lighting Research Center (2015)

Perception metric, Assist Mp 0.06

Flicker frame (frame of one flicker period in time domain)



Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/modulation plot

