

Light efficiency:

168 Lumens/Watt

Light quality:

CRI: 75.5

Color temperature:

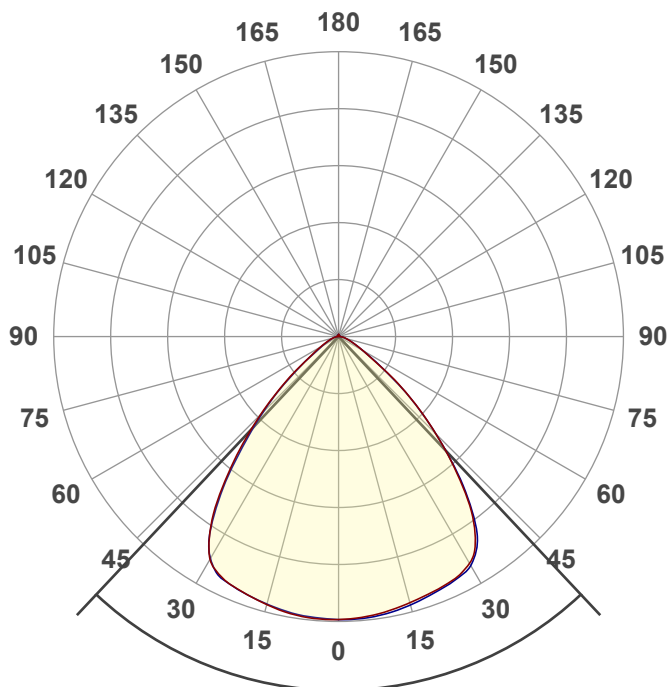
3783 K

Output: 37822 lm

Peak: 19974 cd

Power: 225.8 W

PF: 1.0



Product name:

HBUD3-SW3B300S-HDGLY 40K 240W
with Reflector

Date and time:

8/29/2024 1:50:55 PM

Beam angle

86.4°

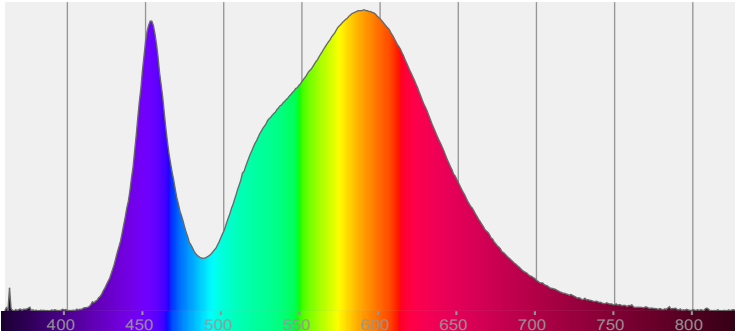


CIE 1931

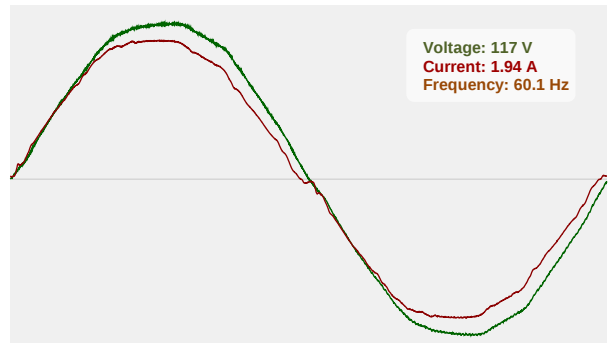
x: 0.390

y: 0.380

Spectra



Power



Voltage: 117 V
Current: 1.94 A
Frequency: 60.1 Hz



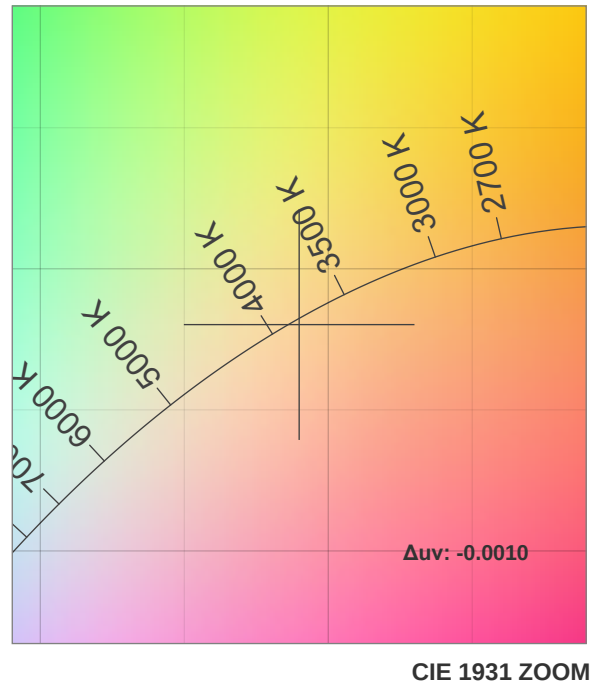
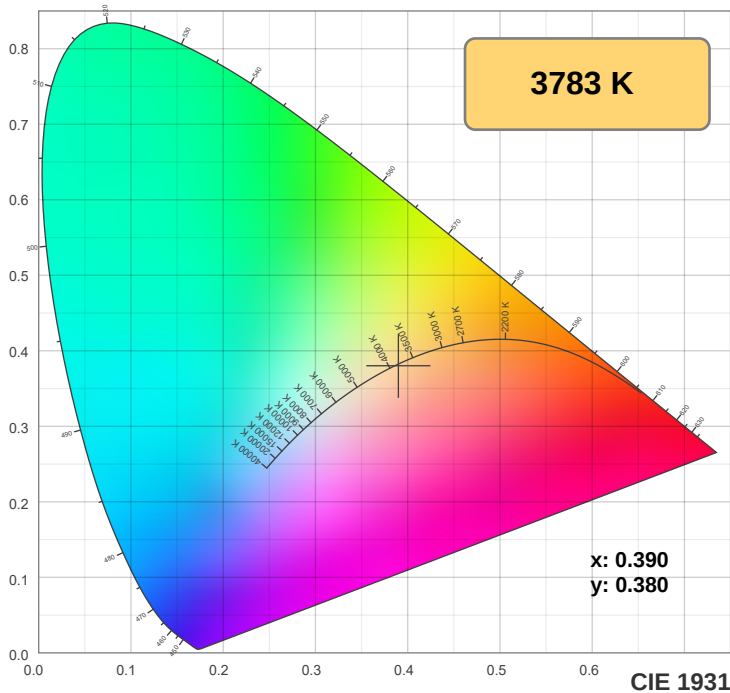
T 314.743.3067

F 314.972.6202

email: commercial-sales@superbrightleds.com

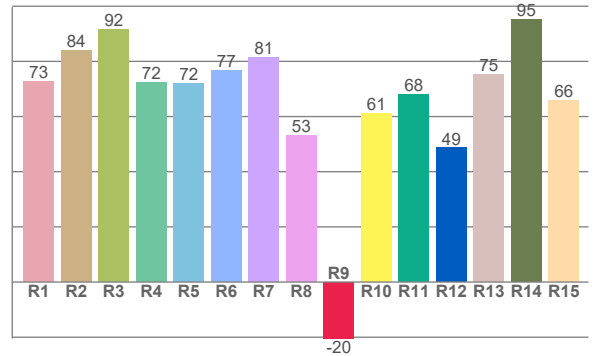
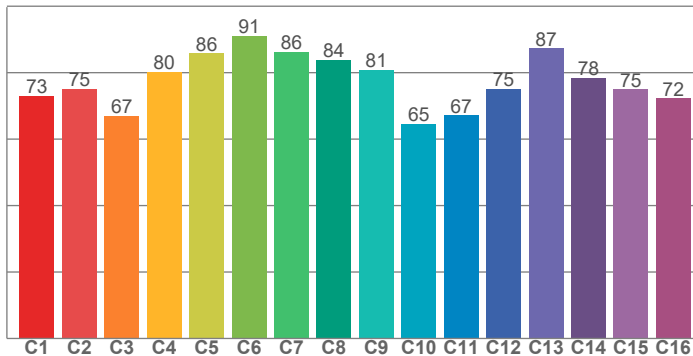
www.superbrightleds.com/

Color Specifications



TM30: 77.3

CRI: 75.5 (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
72.8	84.0	91.6	72.4	72.0	76.7	81.4	53.1	-20.5	61.1	67.9	48.6	75.4	95.3	65.8

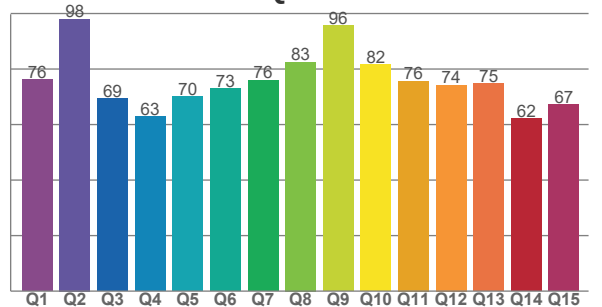
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
73.0	75.2	66.9	80.2	85.8	91.1	86.3	83.8	80.8	64.5	67.1	75.1	87.3	78.5	74.9	72.3

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
76.2	98.0	69.3	62.8	70.0	72.9	76.0	82.5	95.7	81.5	75.7	74.2	74.7	62.1	67.1

CQS: 73.9



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
3783 K	75.5	-20.5	77.3	93.2	73.9	0.390	0.380	0.230	0.336	-0.0010



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TM30 Report

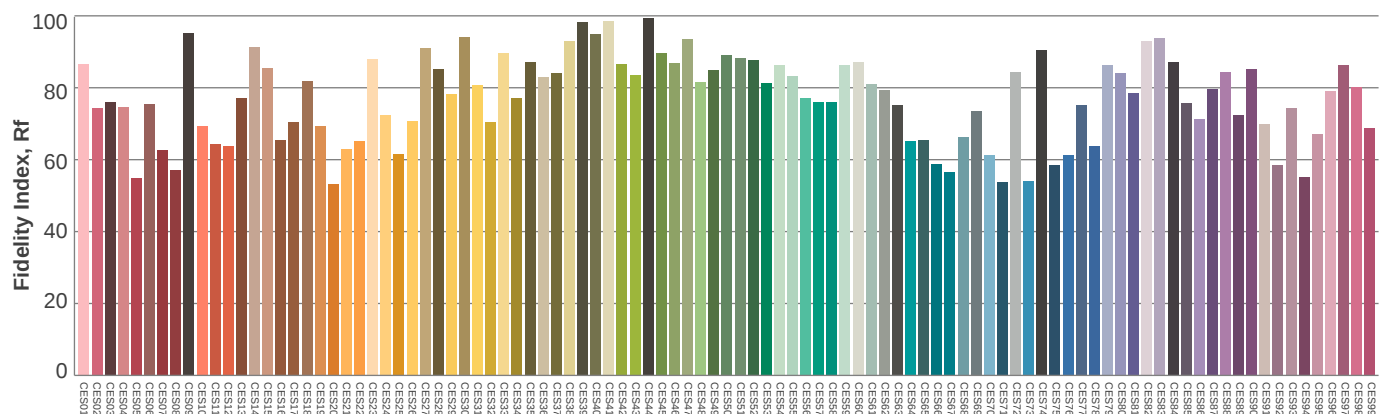
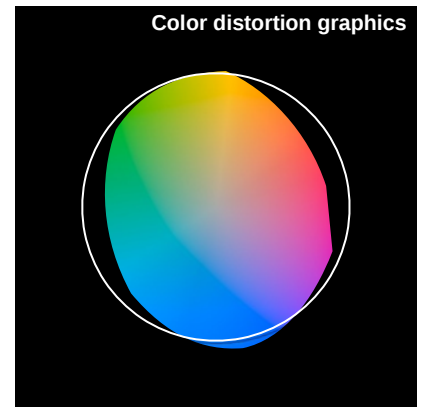
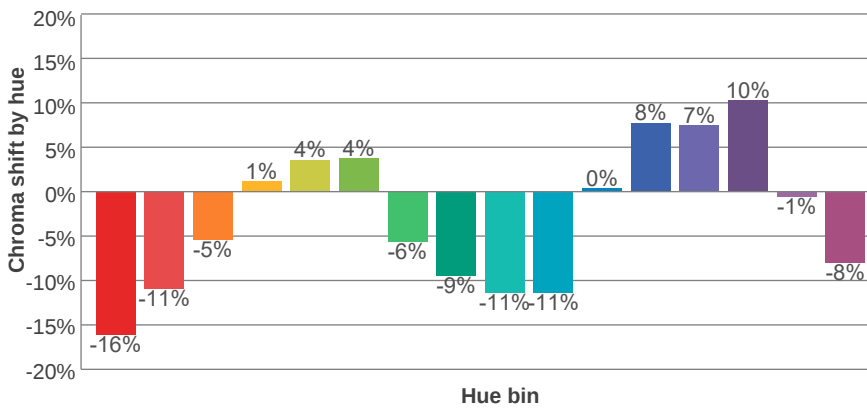
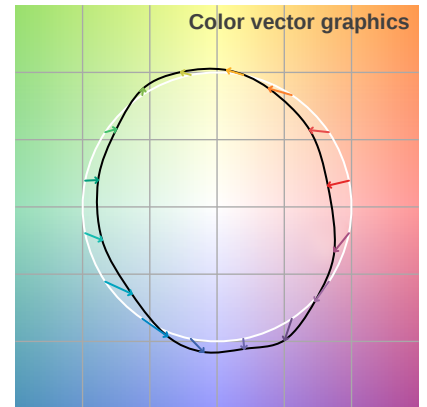
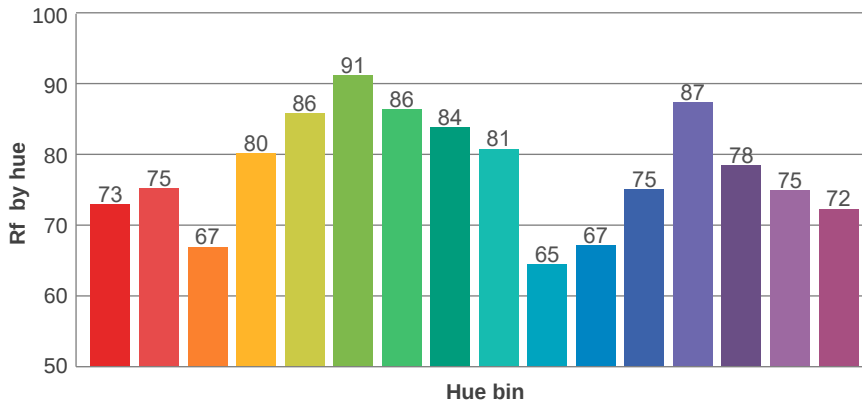
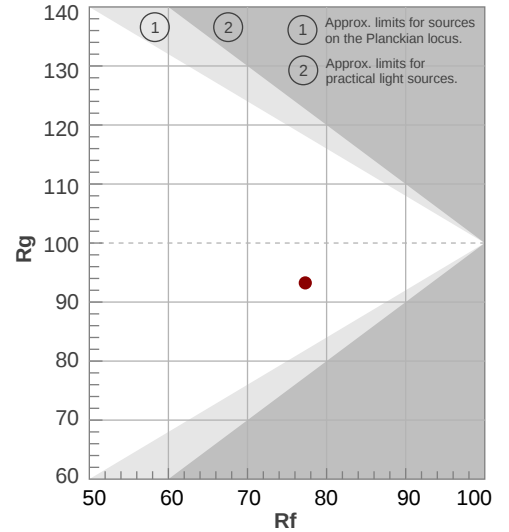
Rf 77.3

Fidelity index Rf

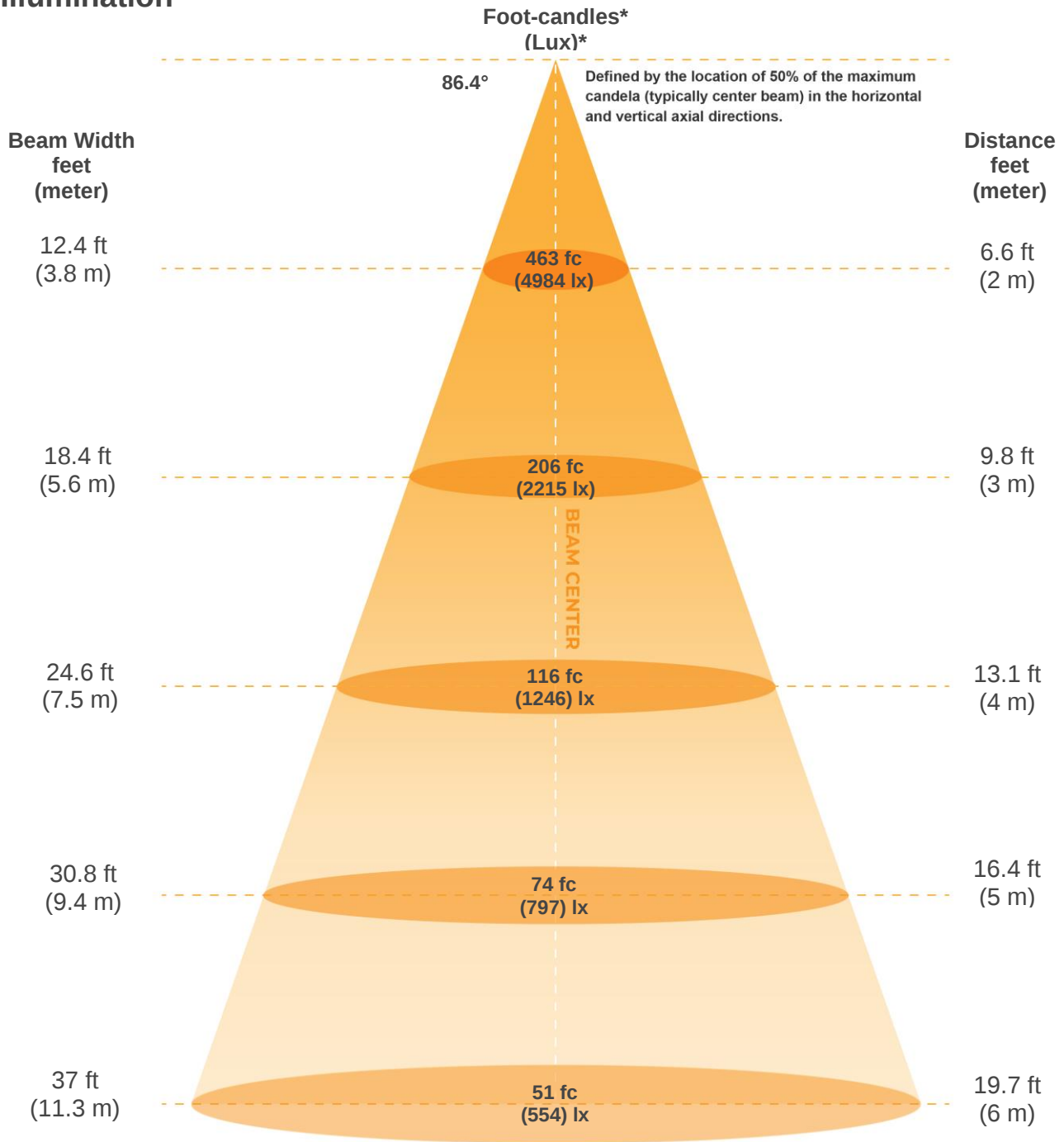
Rg 93.2

Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	73	-16%	-1%
2	75	-11%	9%
3	67	-5%	17%
4	80	1%	13%
5	86	4%	7%
6	91	4%	-3%
7	86	-6%	-7%
8	84	-9%	-2%
9	81	-11%	8%
10	65	-11%	19%
11	67	0%	23%
12	75	8%	11%
13	87	7%	-1%
14	78	10%	-13%
15	75	-1%	-18%
16	72	-8%	-15%



Illumination



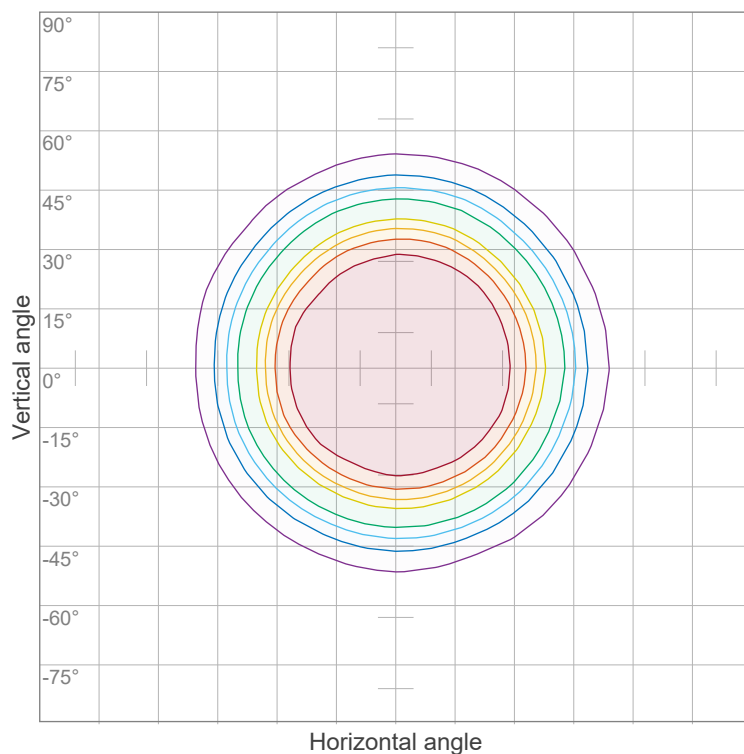
Beam intensities from 1-20m

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	19936	4984	2215	1246	797	554	407	311	246	199	165	138	118	102	89	78	69	62	55	50
fc	1852.1	463	205.8	115.8	74.1	51.4	37.8	28.9	22.9	18.5	15.3	12.9	11	9.4	8.2	7.2	6.4	5.7	5.1	4.6

Beam angle 50%	Field angle 10%	Cutoff Angle 2.5%	Intensity Ratio in 120° cone	Intensity Ratio in 90° cone
86.4°	116.5°	148.3°	94.0%	79.1%



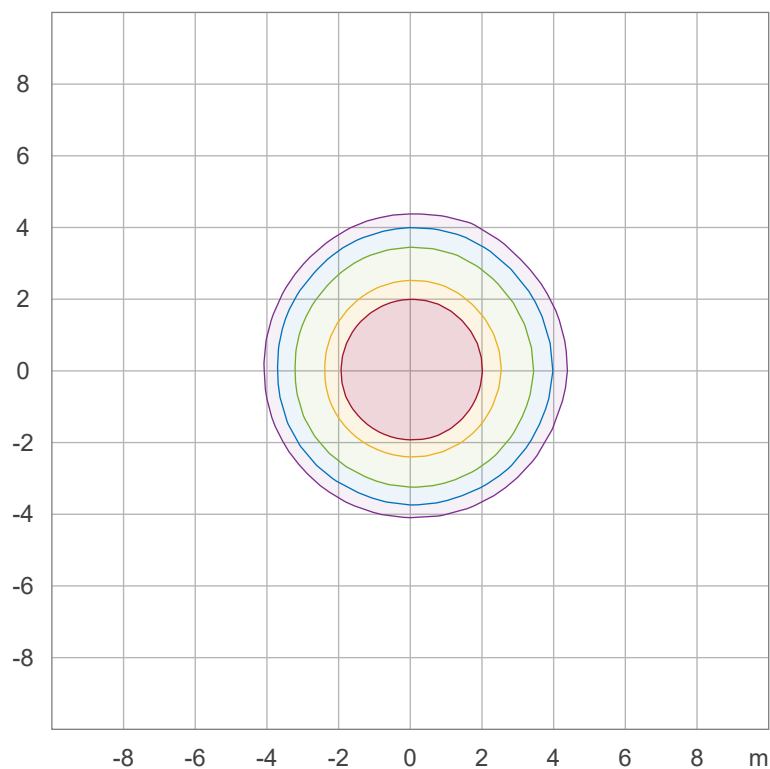
Iso-intensity Diagram (Iso-candela)



90 %	17975.0 cd
80 %	15977.7 cd
70 %	13980.5 cd
60 %	11983.3 cd
50 %	9986.1 cd
40 %	7988.9 cd
30 %	5991.6 cd
20 %	3994.4 cd
10 %	1997.2 cd

Peak intensity: 19972.2 cd
Number of c-planes: 16

Iso-illuminance Diagram (Iso-lux)



50.0 %	1108.2 lx
30.0 %	664.9 lx
10.0 %	221.6 lx
5.0 %	110.8 lx
3.0 %	66.5 lx

Peak illuminance: 2216.5 lx
Mounting height: 3.0 m
Number of c-planes: 16



Light Planning – UGR table

Uncorrected, comprehensive UGR table according to 117-1995

[illegible]

UGR data could not be calculated due to missing dimensions. Goto Edit->Photometric->Dimensions and set the fixture/lamp dimensions.

Coefficients of Utilization

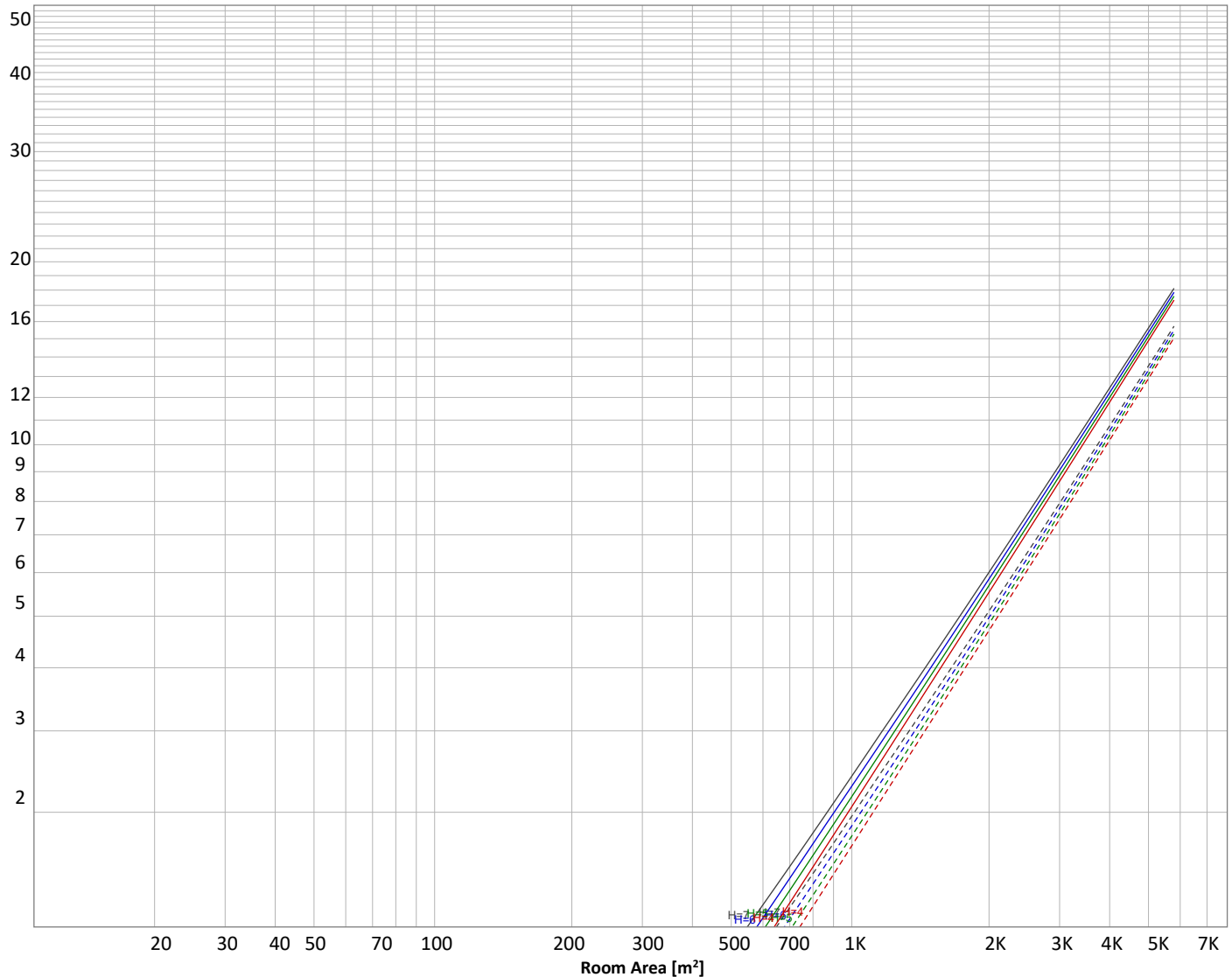
Ceiling reflectance	80			70			50			30			10			0		
Wall reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Floor reflectance	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	0
RCR	(RCR: Room Cavity Ratio)			Room Values are expressed as percentage of Lumen delivered to the task surface														
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101	99
1	111	108	105	102	109	106	103	100	101	99	97	97	95	94	93	92	91	89
2	104	98	93	88	101	96	91	87	92	88	85	89	86	83	86	83	81	79
3	97	89	82	77	94	87	81	76	84	79	75	81	77	74	79	75	72	70
4	90	81	74	68	88	79	73	68	77	71	67	74	70	66	72	68	65	63
5	84	74	66	61	82	72	66	60	70	64	60	68	63	59	67	62	58	56
6	79	67	60	54	77	66	59	54	65	58	54	63	57	53	61	57	53	51
7	73	62	54	49	72	61	54	49	60	53	49	58	52	48	57	52	48	46
8	69	57	50	45	67	56	49	45	55	49	44	54	48	44	53	47	44	42
9	65	53	46	41	63	52	45	41	51	45	40	50	44	40	49	44	40	38
10	61	49	42	37	60	49	42	37	48	41	37	47	41	37	46	40	37	35



Luminaire budgetary diagram

Uncorrected, comprehensive UGR table according to 117-1995

LAMPS (number of lamps)



Conditions

H = Room height	Flux = 37822 lm	p(%)		
H _{down} = Lamp distance from ceiling =	0.00 m	Line type	Ceiling reflectance	Wall reflectance
H _{work} = Work area height from floor =	0.00 m	-----	70	50
E _{work} = Average lux on work area =	100 lx	_____	50	30
				Floor reflectance
				20

Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
1895 lm	5525 lm	8743 lm	9880 lm	6701 lm	2793 lm	1102 lm	511 lm	178 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
59.2 lm	63.6 lm	83.0 lm	77.6 lm	67.6 lm	57.1 lm	44.5 lm	30.3 lm	11.3 lm

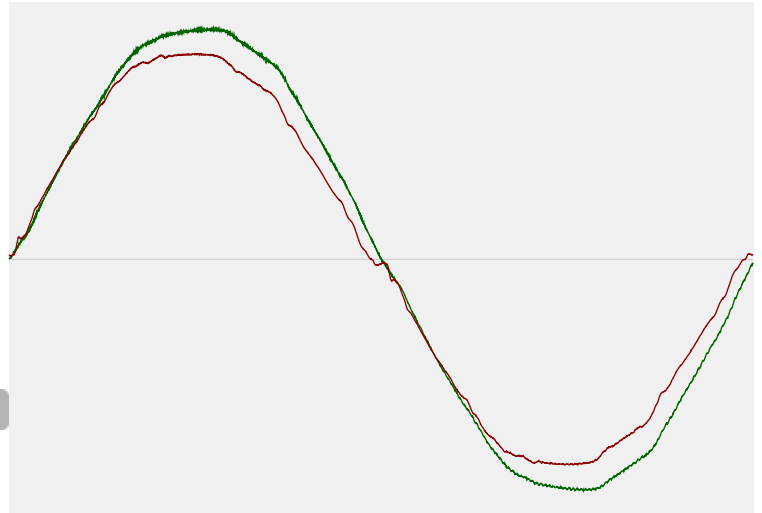


Power Details

Input Power

Power feed to light source	225.8 W
Frequency of input power	60.1 Hz
RMS Input voltage feed, V_{RMS}	117 V
RMS Input current feed, I_{RMS}	1.94 A
Volt-Ampere or apparent power = $V_{RMS} * I_{RMS}$	226.52 VA
Displacement factor of AC power feed	1.0
Power factor of AC current feed	1.0
Total harmonic distortion of the current	3.35%
Total harmonic distortion of the voltage	1.92%

Input Power Curve



Efficiency

Radiated power efficiency 48.6%



Lumen efficiency 168 lm/W



Stabilization Details

Warmup Conditions

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

Color Temperature Change

CCT start	3783 K
CCT shift	0 K
CCT end	3783 K

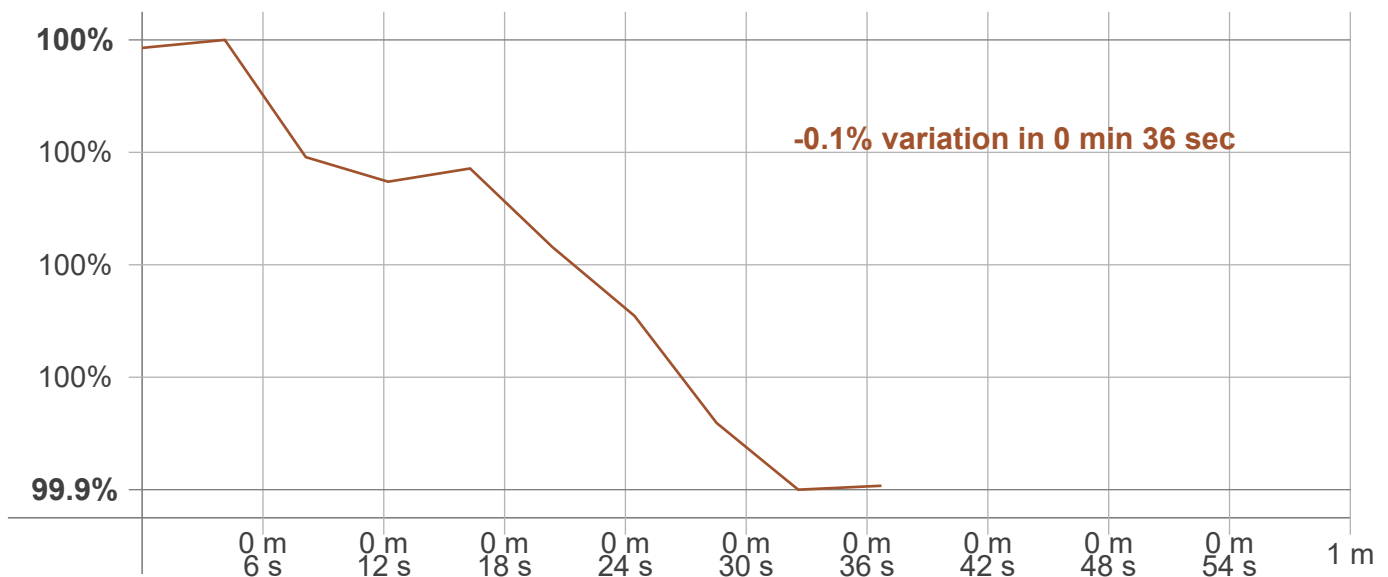
Warmup Result

Total warmup time	Not completed
Warmup variation	-0.1%

Output Change

Output start	37834 lm
Output change	-13 lm
Output end	37822 lm

Stabilization Curve



Flicker /TLA details



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Flicker Meter Type Viso Systems LabFlicker
Frequency of input power 60.1 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 119.76 Hz
Percent Flicker 0.08 %
Flicker index 0

Flicker indices per California Energy Commission (CEC) 2016b

JA8/10 40 Hz 0.01 %
JA8/10 90 Hz 0.01 %
JA8/10 200 Hz 0.07 %
JA8/10 400 Hz 0.07 %
JA8/10 1000 Hz 0.07 %

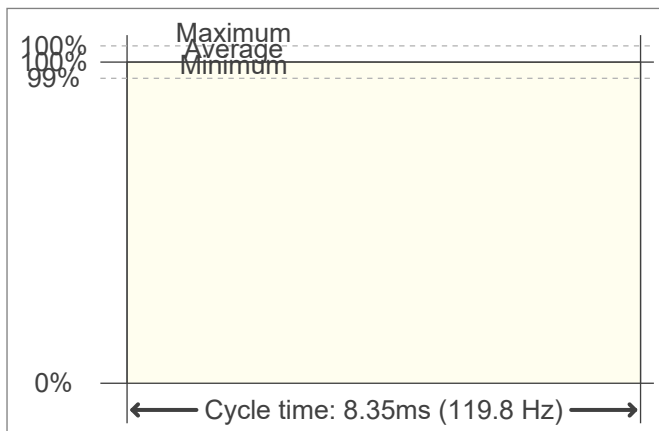
TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC 61000-4-15)

PstLM value ($F < 80$ Hz) 0
SVM value ($80 < F < 2000$ Hz) 0

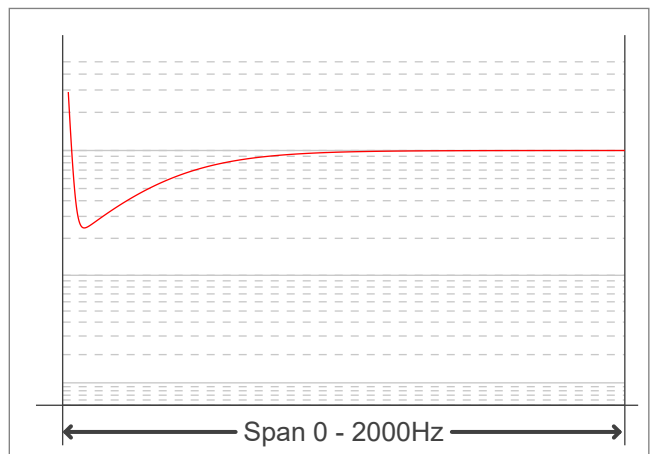
Flicker indices according to Lighting Research Center (2015)

Perception metric, Assist Mp 0

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



Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/modulation plot

