

Light efficiency:

147 Lumens/Watt

Light quality:

CRI: 82.9

Color temperature:

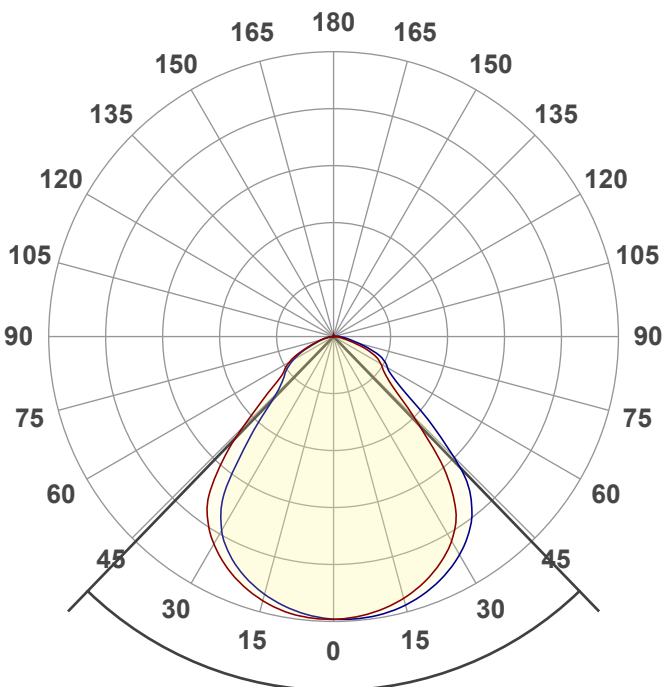
4063 K

Output: 57836 lm

Peak: 27826 cd

Power: 392.7 W

PF: 1.0



Product name:

LHBDP4-SW2B-SP400 40K 400W

Date and time:

4/17/2025 10:53:25 AM

Beam angle

88°

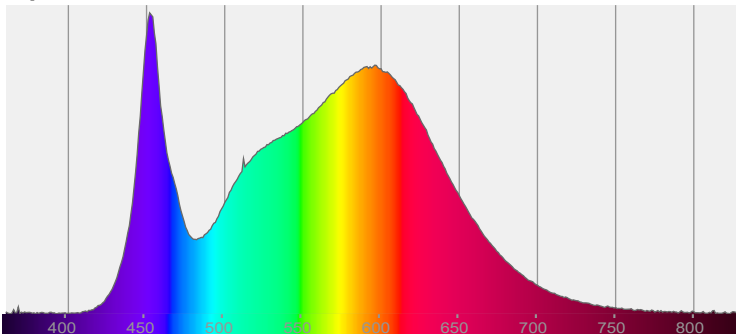


CIE 1931

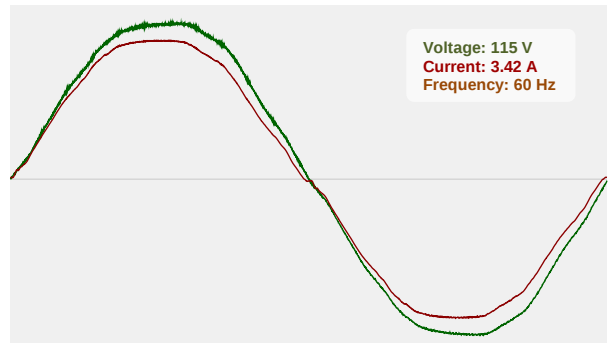
x: 0.377

y: 0.372

Spectra



Power



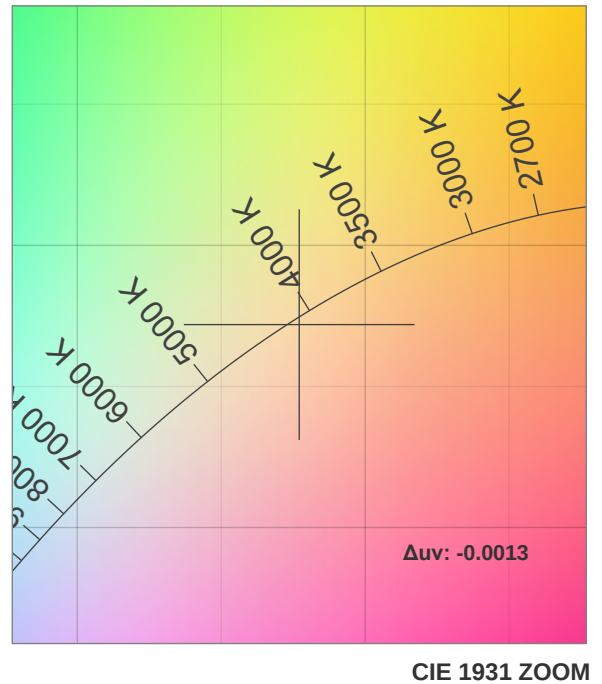
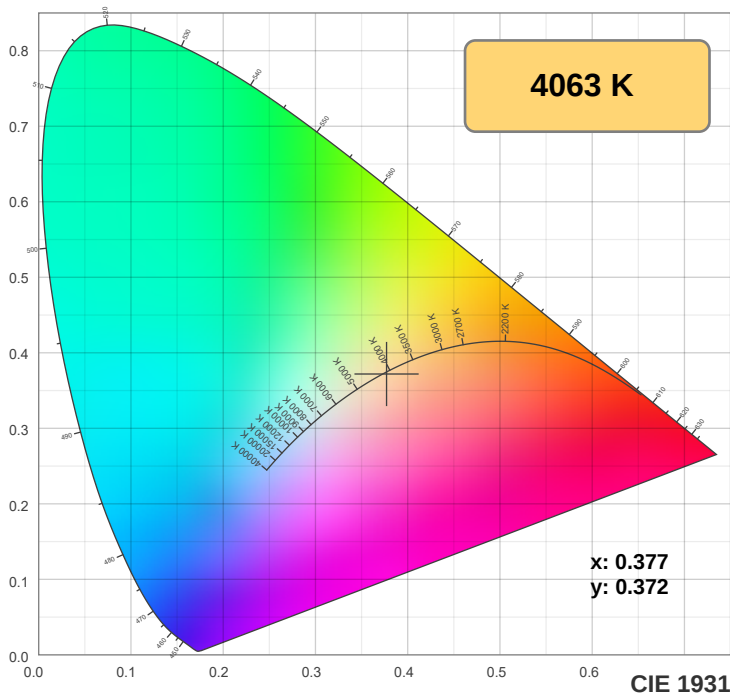
T 314.743.3067

F 314.972.6202

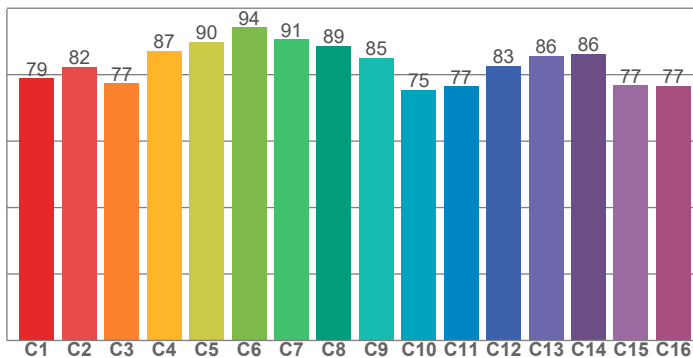
email: commercial-sales@superbrightleds.com

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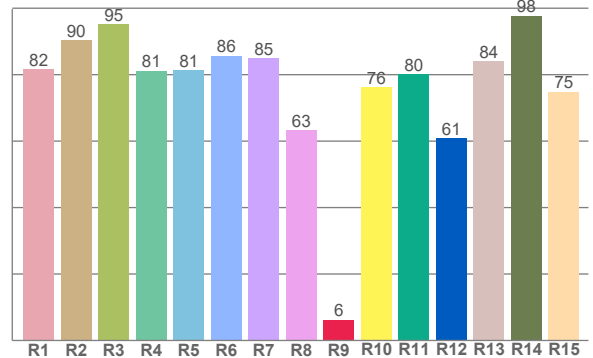
Color Specifications



TM30: 83.2



CRI: 82.9 (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
81.6	90.3	95.2	81.2	81.4	85.7	84.9	63.3	6.3	76.3	80.1	60.8	84.1	97.8	74.9

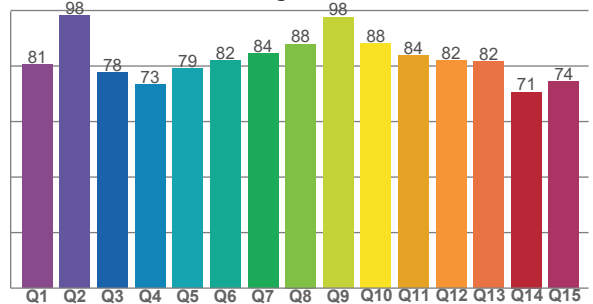
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
78.9	82.3	77.5	87.2	89.9	94.2	90.7	88.6	85.0	75.5	76.5	82.7	85.7	86.3	76.8	76.7

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80.6	98.2	77.8	73.4	79.1	81.9	84.5	87.9	97.6	88.2	83.8	82.0	81.6	70.7	74.3

CQS: 81.2



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
4063 K	82.9	6.3	83.2	94.7	81.2	0.377	0.372	0.225	0.333	-0.0013



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TM30 Report

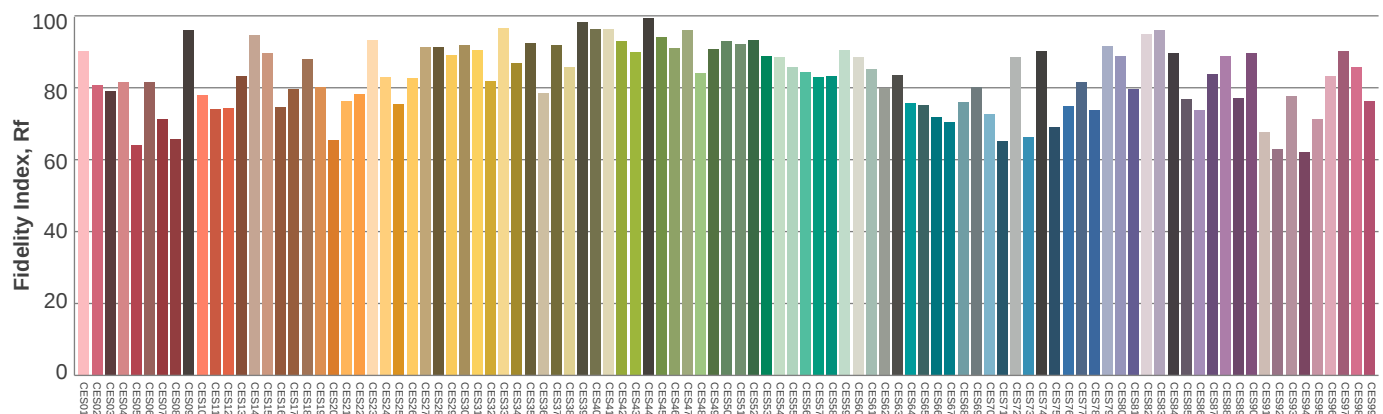
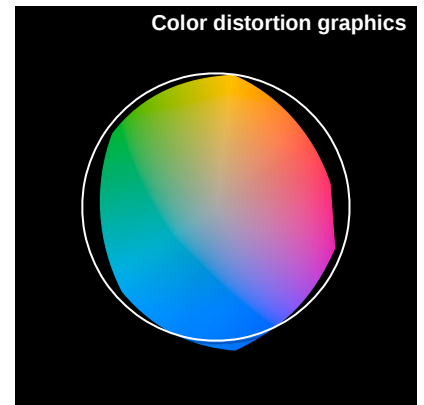
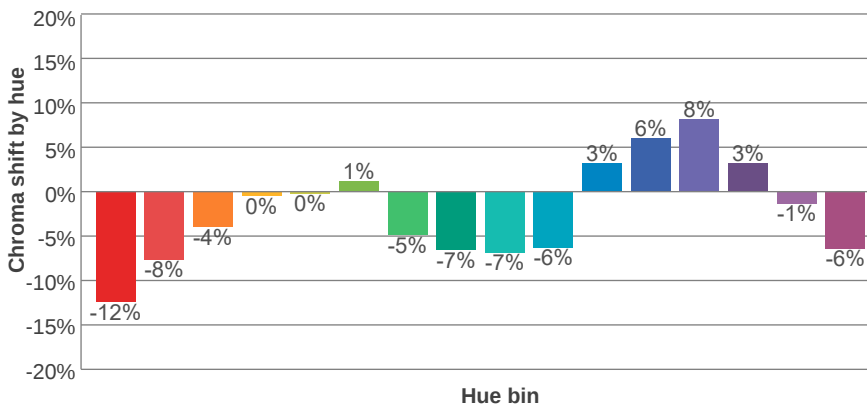
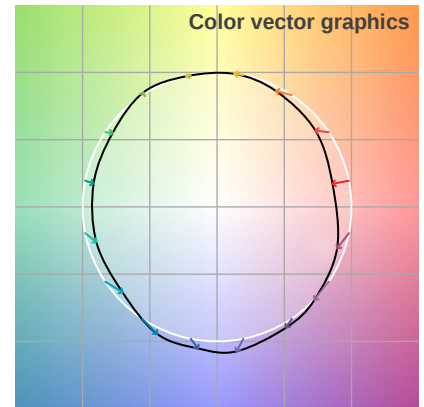
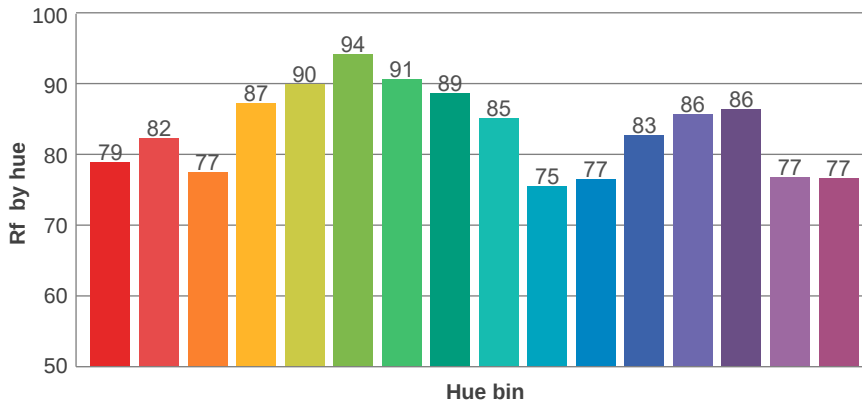
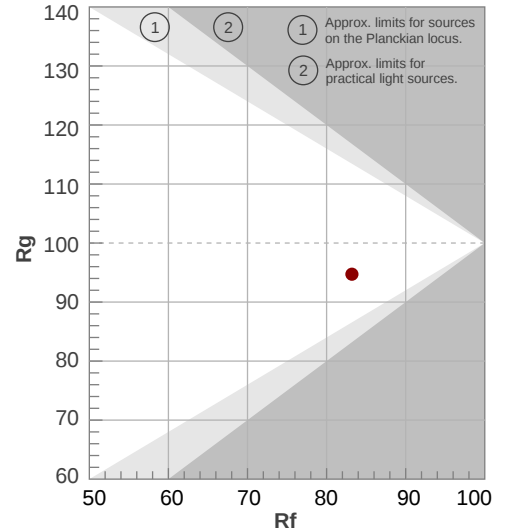
Rf 83.2

Fidelity index Rf

Rg 94.7

Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	79	-12%	0%
2	82	-8%	7%
3	77	-4%	11%
4	87	0%	7%
5	90	0%	4%
6	94	1%	-2%
7	91	-5%	-3%
8	89	-7%	1%
9	85	-7%	8%
10	75	-6%	14%
11	77	3%	15%
12	83	6%	7%
13	86	8%	-7%
14	86	3%	-7%
15	77	-1%	-17%
16	77	-6%	-13%



Color Evaluation Sample



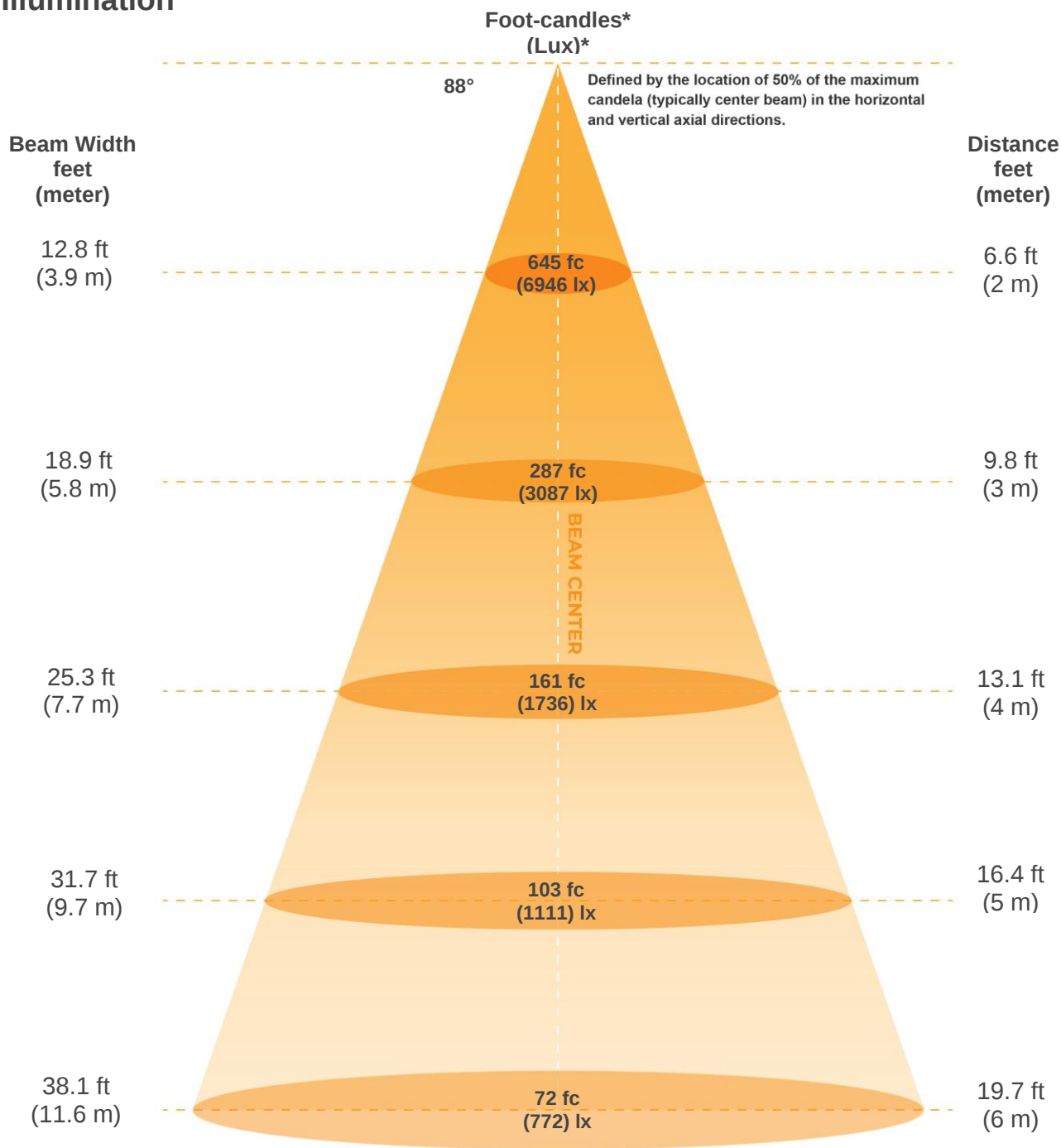
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Illumination



*measured at center of beam

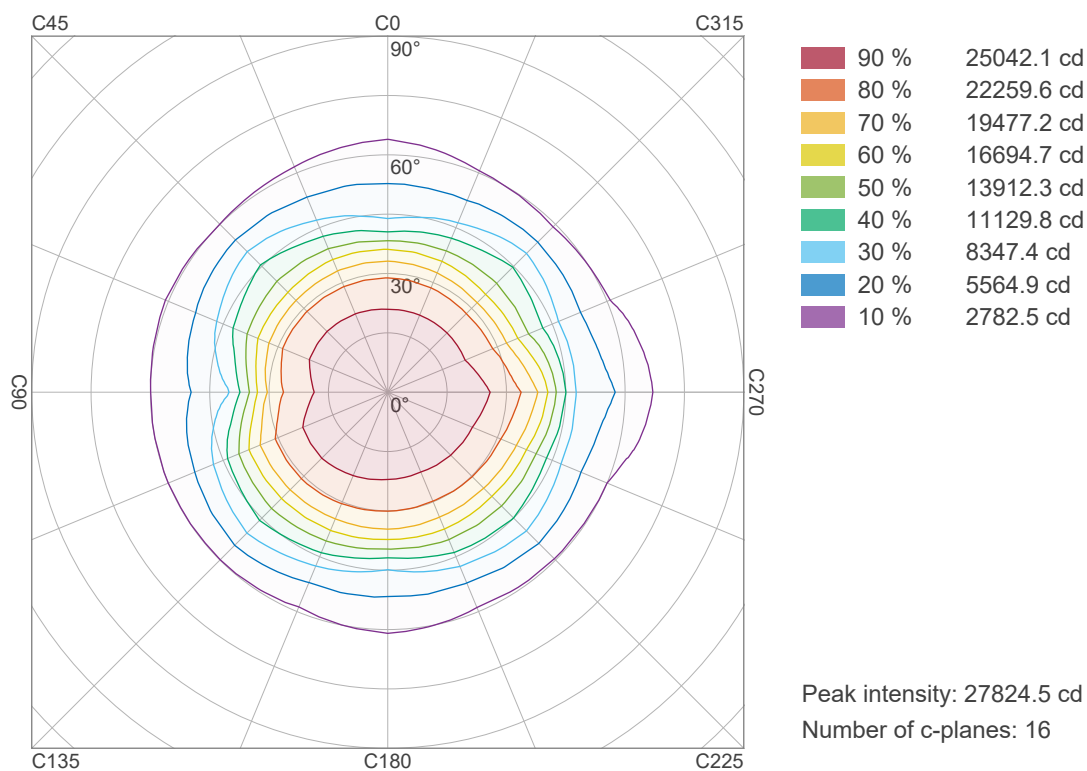
Beam intensities from 1-20m

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	27784	6946	3087	1736	1111	772	567	434	343	278	230	193	164	142	123	109	96	86	77	69
fc	2581.2	645.3	286.8	161.3	103.2	71.7	52.7	40.3	31.9	25.8	21.3	17.9	15.3	13.2	11.5	10.1	8.9	8	7.2	6.5

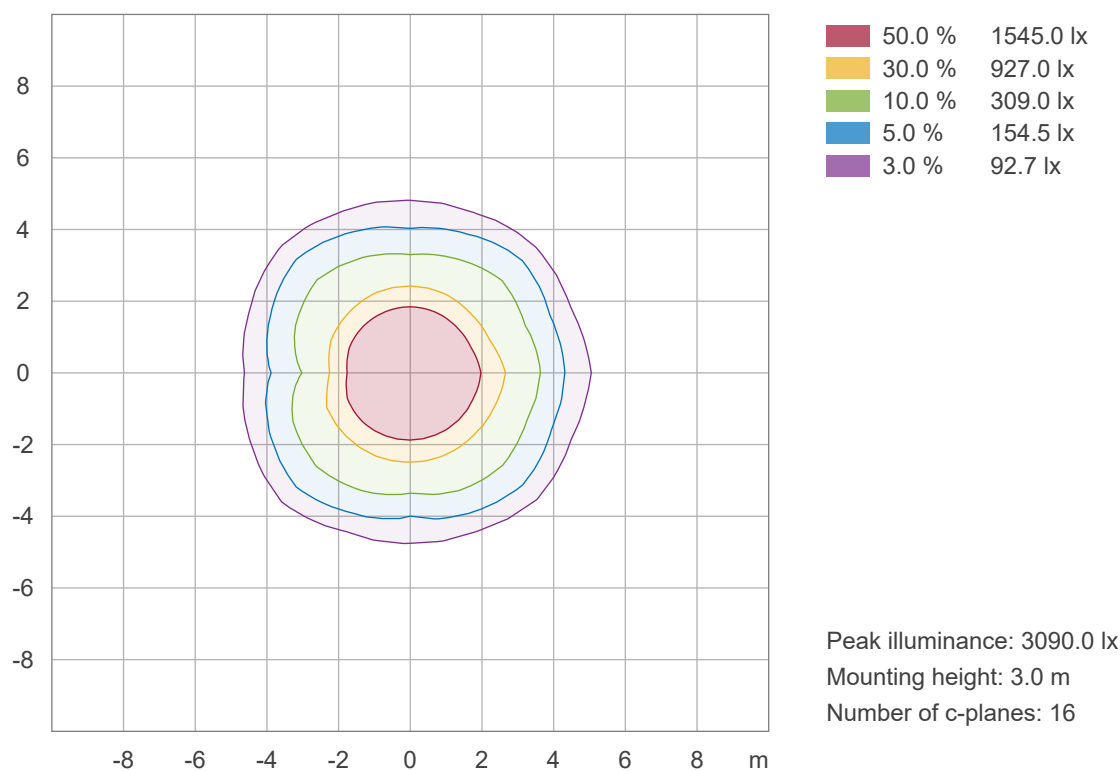
Beam angle 50%	Field angle 10%	Cutoff Angle 2.5%	Intensity Ratio in 120° cone	Intensity Ratio in 90° cone
88°	135°	169.6°	88.8%	69.6%



Iso-intensity Diagram (Iso-candela)



Iso-illuminance Diagram (Iso-lux)



Light Planning – UGR table

Uncorrected, comprehensive UGR table according to 117-1995

[illegible]

UGR data could not be calculated due to missing/wrong symmetry. Go to Edit -> Photometric -> Corrections and select Correct asymmetry (UGR not defined for asymmetrical distributions)..

Coefficients of Utilization

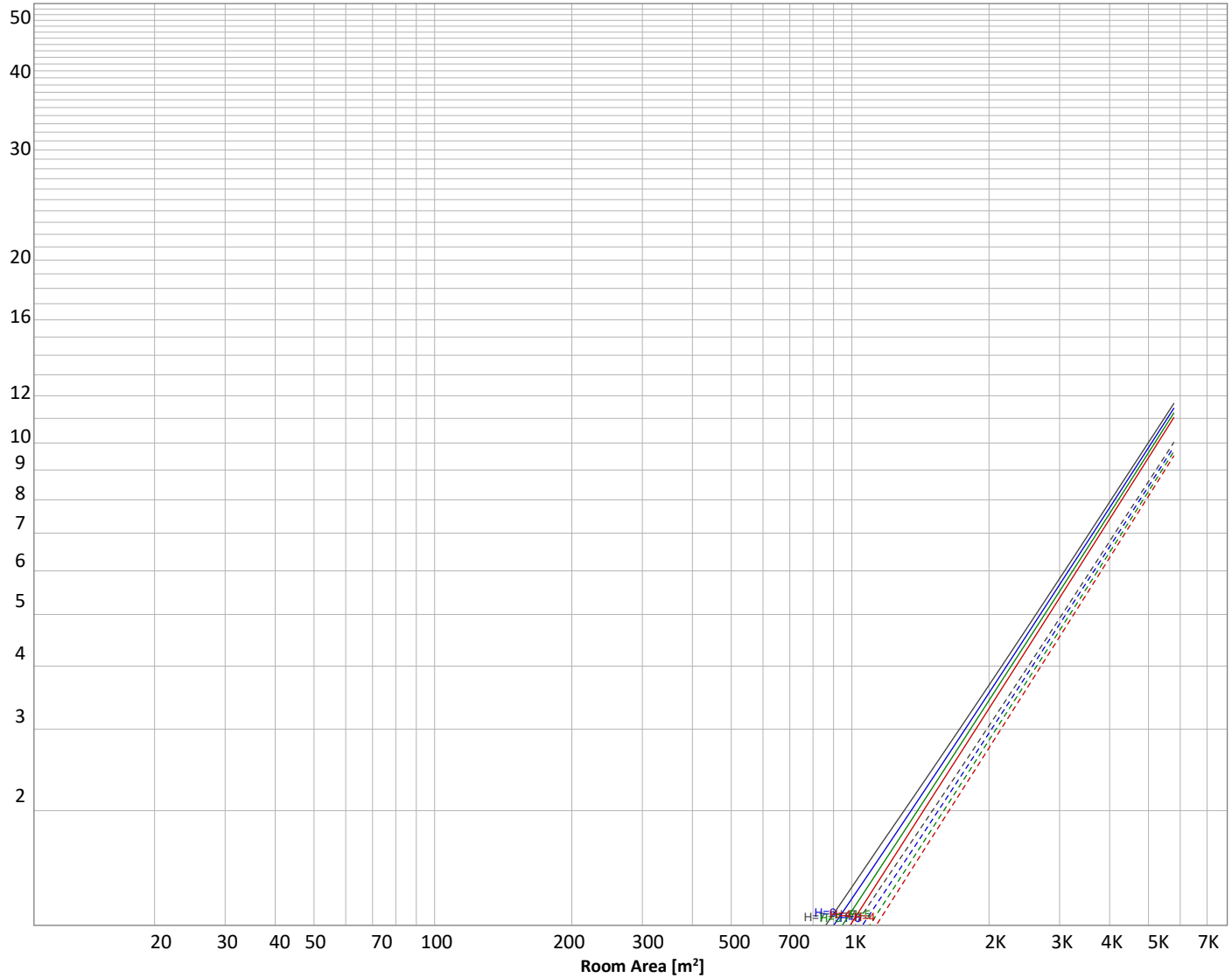
Ceiling reflectance	80			70			50			30			10			0		
Wall reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Floor reflectance	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	0
RCR			(RCR: Room Cavity Ratio)															
Room Values are expressed as percentage of Lumen delivered to the task surface																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	101	101	101	99
1	110	106	103	100	108	104	101	98	100	97	95	96	94	92	92	90	89	87
2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	83	80	78	76
3	94	85	78	73	92	84	77	72	81	75	71	78	73	69	75	72	68	66
4	87	77	69	63	85	76	68	63	73	67	62	71	65	61	69	64	60	58
5	81	70	62	56	79	69	61	56	66	60	55	65	59	54	63	58	54	52
6	75	63	55	50	74	63	55	49	61	54	49	59	53	49	58	52	48	46
7	70	58	50	45	69	57	50	44	56	49	44	54	48	44	53	48	43	42
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	43	39	38
9	62	49	42	37	60	49	41	37	48	41	36	47	40	36	45	40	36	34
10	58	46	38	34	57	45	38	33	44	38	33	43	37	33	42	37	33	31



Luminaire budgetary diagram

Uncorrected, comprehensive UGR table according to 117-1995

LAMPS (number of lamps)



Conditions

H = Room height	Flux = 57836 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
				30
				20

Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
2630 lm	7553 lm	11460 lm	13009 lm	10199 lm	6523 lm	3519 lm	1740 lm	775 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
59.3 lm	45.2 lm	51.8 lm	58.9 lm	60.8 lm	57.6 lm	48.7 lm	32.9 lm	11.7 lm

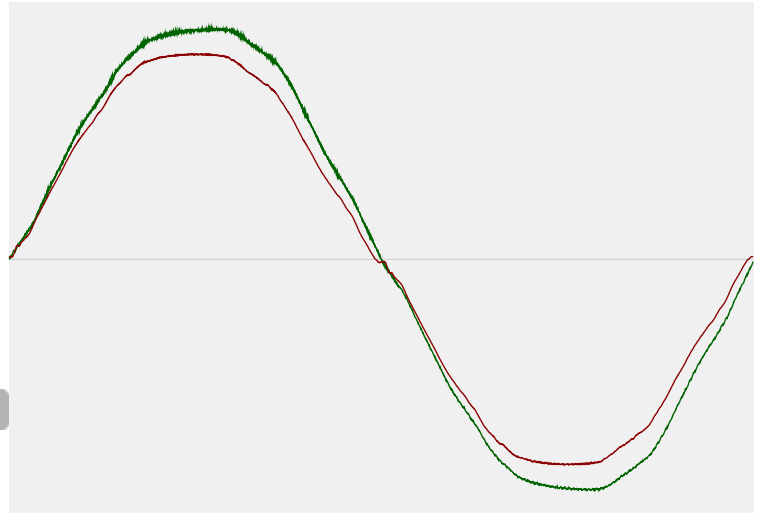


Power Details

Input Power

Power feed to light source	392.7 W
Frequency of input power	60 Hz
RMS Input voltage feed, V_{RMS}	115 V
RMS Input current feed, I_{RMS}	3.42 A
Volt-Ampere or apparent power = $V_{RMS} * I_{RMS}$	393.21 VA
Displacement factor of AC power feed	1.0
Power factor of AC current feed	1.0
Total harmonic distortion of the current	3.65%
Total harmonic distortion of the voltage	2.63%

Input Power Curve



Efficiency

Radiated power efficiency 44.7%



Lumen efficiency 147 lm/W



Stabilization Details

Warmup Conditions

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

Color Temperature Change

CCT start	4014 K
CCT shift	+50 K
CCT end	4063 K

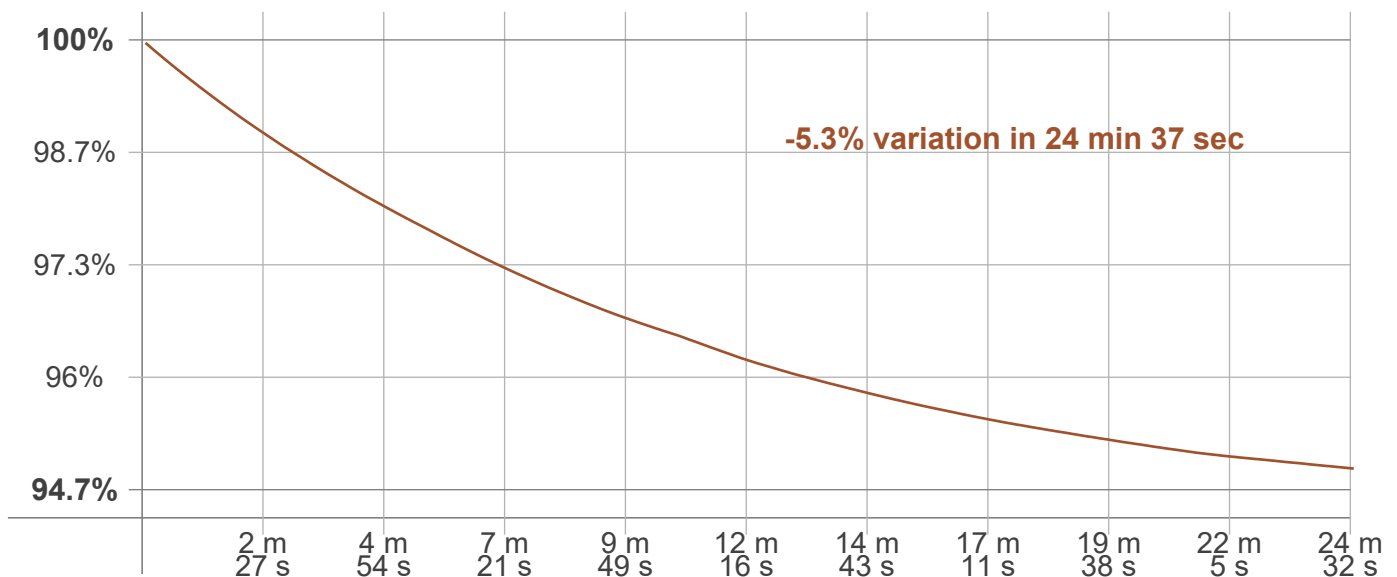
Warmup Result

Total warmup time	Lamp stabilized in 24 min 37 sec
Warmup variation	-5.3%

Output Change

Output start	61045 lm
Output change	-3209 lm
Output end	57836 lm

Stabilization Curve



Flicker /TLA details



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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 121.21 Hz
Percent Flicker 0.34 %
Flicker index 0

Flicker indices per California Energy Commission (CEC) 2016b

JA8/10 40 Hz 0.03 %
JA8/10 90 Hz 0.05 %
JA8/10 200 Hz 0.19 %
JA8/10 400 Hz 0.26 %
JA8/10 1000 Hz 0.32 %

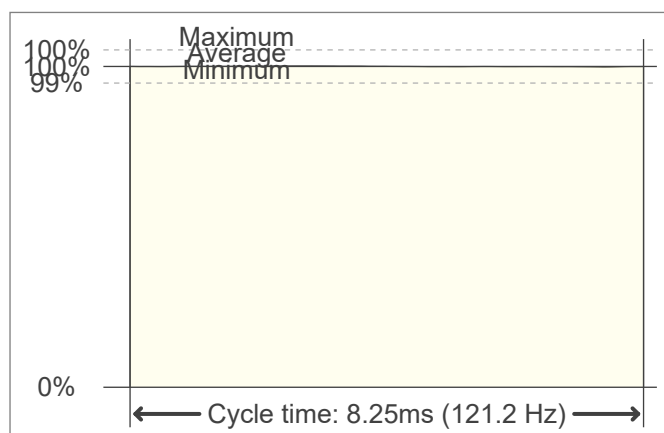
TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC 61000-4-15)

PstLM value ($F < 80$ Hz) 0.02
SVM value ($80 < F < 2000$ Hz) 0

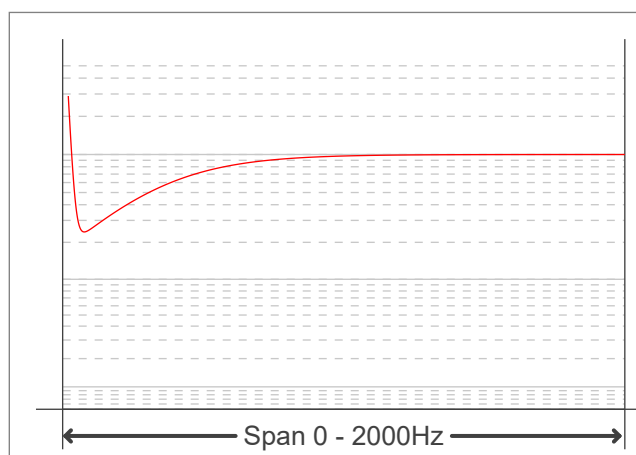
Flicker indices according to Lighting Research Center (2015)

Perception metric, Assist Mp 0.02

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



Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/modulation plot

