

Output: 24915 lm

Peak: 8777 cd

Light quality:

CRI: 78.9

Color temperature:

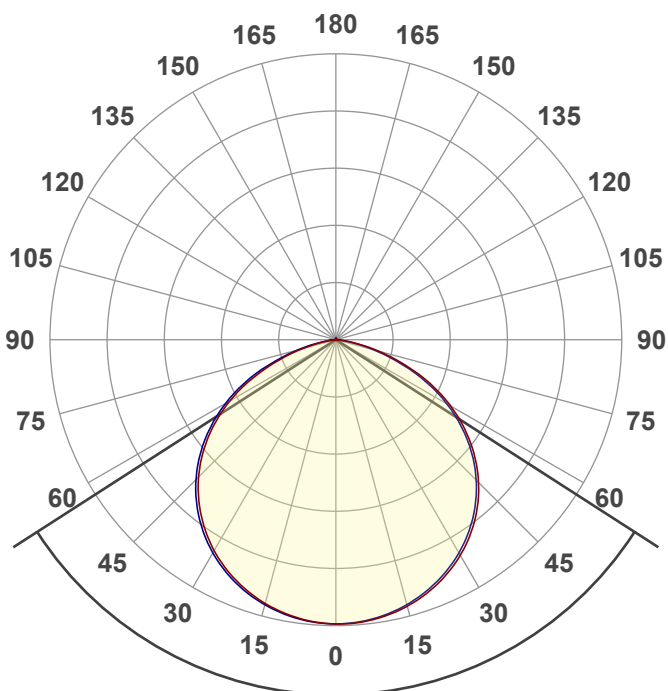
5119 K

Product name:

HBUD2-50K150HSD-HV

Date and time:

9/28/2022 2:34:28 PM



Beam angle

114.5°

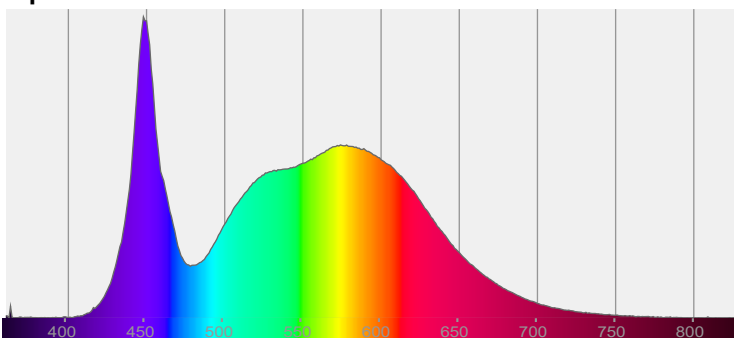


CIE 1931

x: 0.342

y: 0.353

Spectra



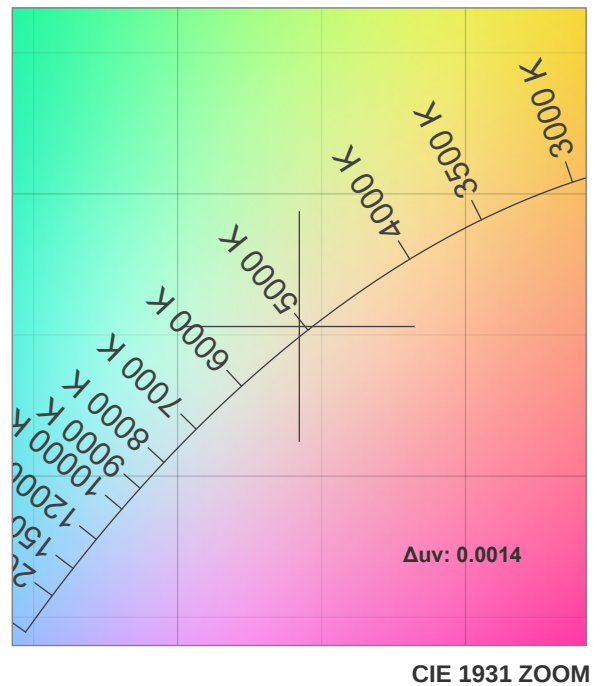
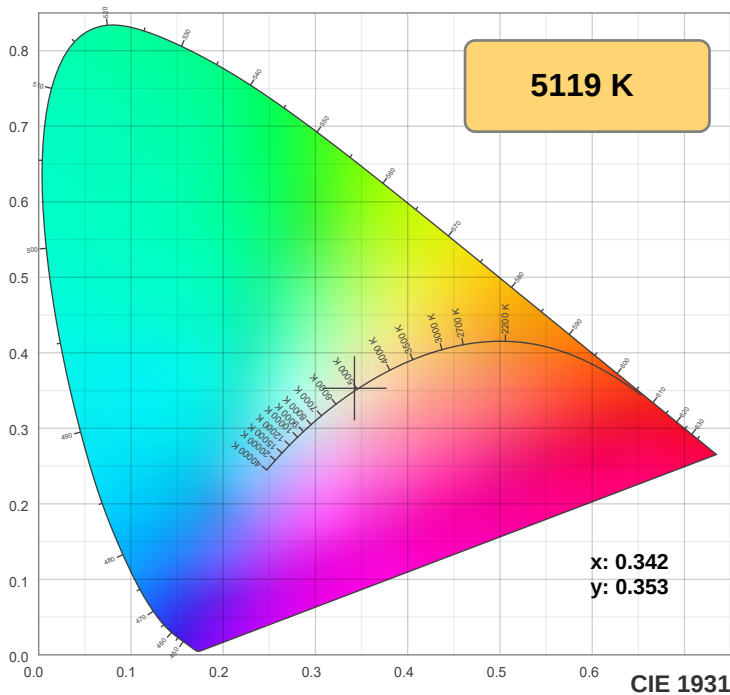
T 314.743.3067

F 314.972.6202

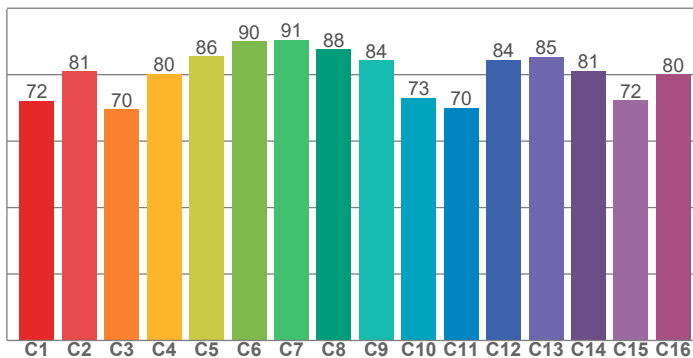
email: commercial-sales@superbrightleds.com

www.superbrightleds.com/

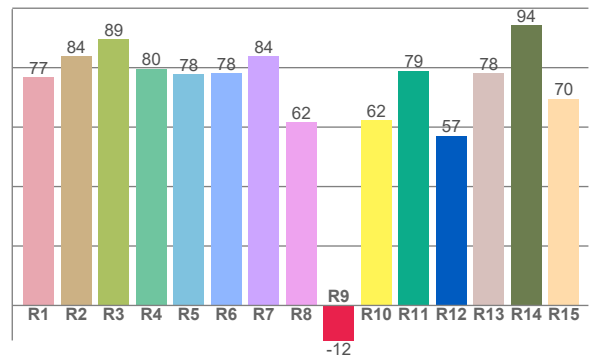
Color Specifications



TM30: 80.0



CRI: 78.9 (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
76.7	83.9	89.5	79.6	77.9	78.2	83.9	61.7	-11.8	62.3	78.9	57.1	78.2	94.3	69.6

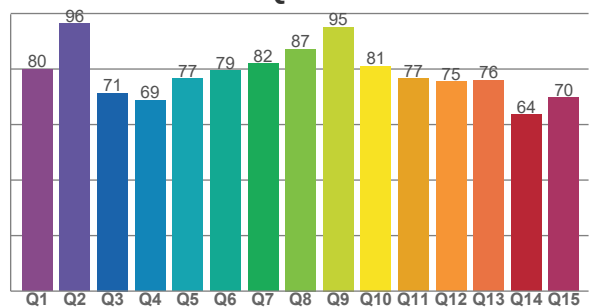
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
72.2	81.0	69.6	80.3	85.6	90.1	90.6	87.6	84.3	73.1	69.9	84.5	85.4	81.1	72.3	80.1

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
79.9	96.4	71.4	68.8	76.6	79.4	82.0	87.2	95.1	81.1	76.6	75.4	76.0	63.5	69.7

CQS: 76.9



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
5119 K	78.9	-11.8	80.0	95.9	76.9	0.342	0.353	0.209	0.323	0.0014



TM30 Report

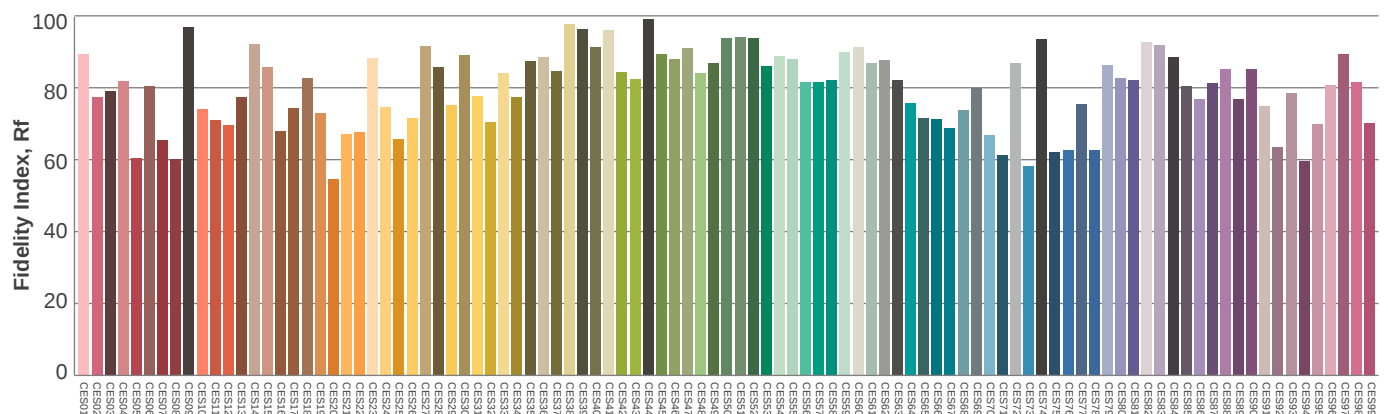
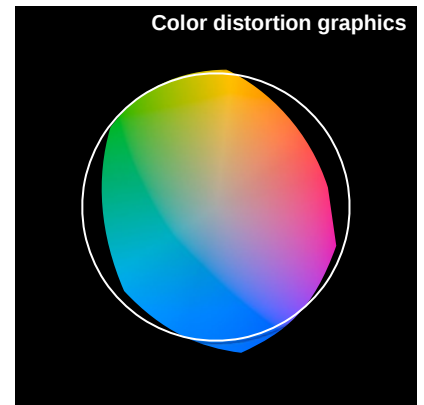
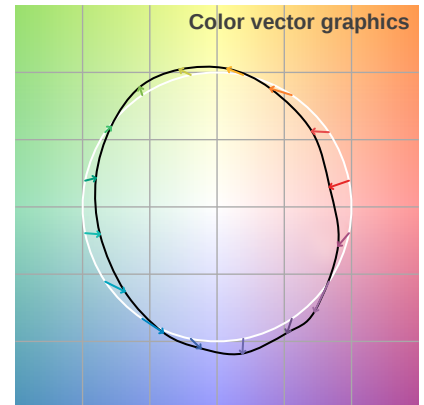
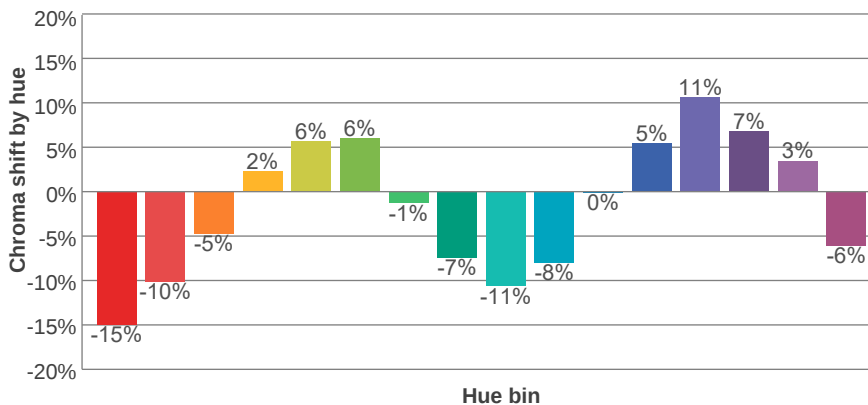
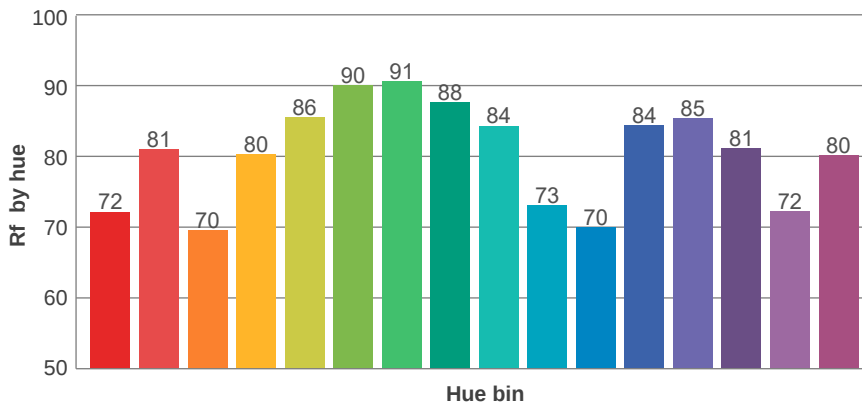
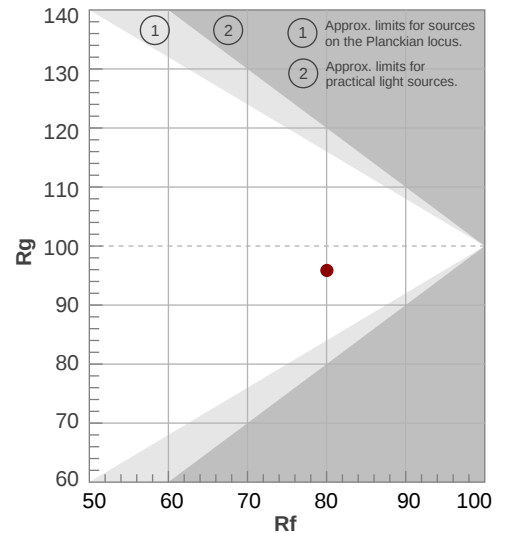
Rf 80.0

Fidelity index R_f

Rg 95.9

Gammut index Rg

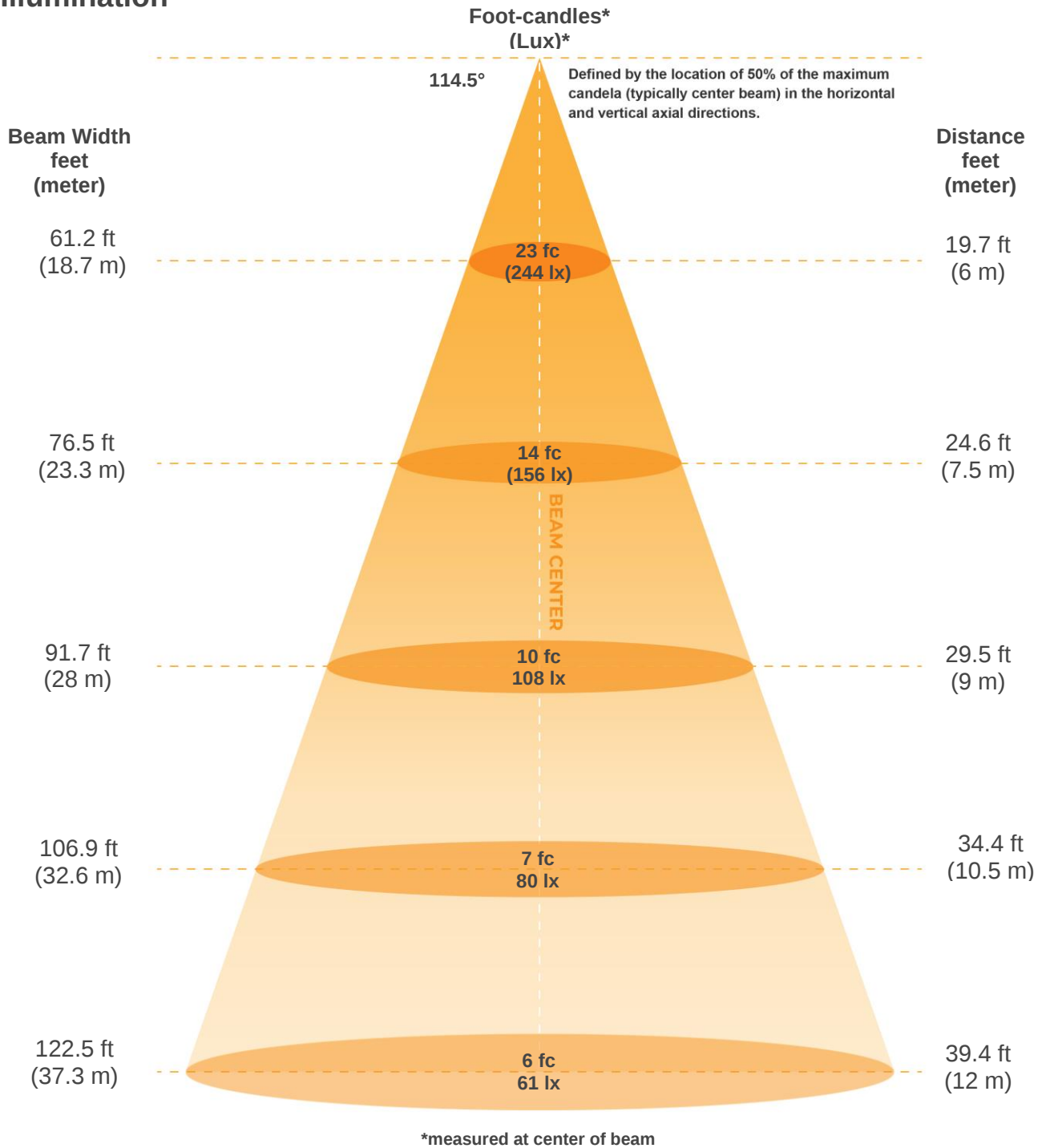
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	72	-15%	-2%
2	81	-10%	8%
3	70	-5%	16%
4	80	2%	12%
5	86	6%	7%
6	90	6%	-2%
7	91	-1%	-6%
8	88	-7%	-3%
9	84	-11%	3%
10	73	-8%	14%
11	70	0%	19%
12	84	5%	8%
13	85	11%	-3%
14	81	7%	-9%
15	72	3%	-24%
16	80	-6%	-11%



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Color Evaluation Sample

Illumination



Beam intensities from 1-20m

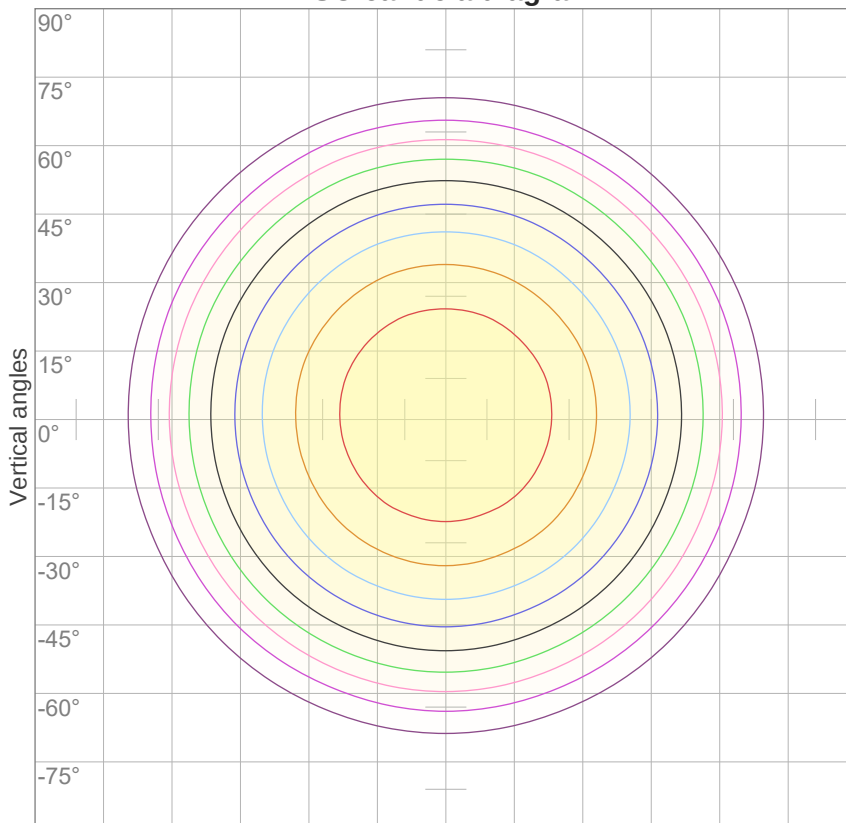
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
3.3ft	6.6ft	9.8ft	13.1ft	16.4ft	19.7ft	23ft	26.2ft	29.5ft	32.8ft	36.1ft	39.4ft	42.7ft	45.9ft	49.2ft	52.5ft	55.8ft	59.1ft	62.3ft	65.6ft
8769lx	2192lx	974lx	548lx	351lx	244lx	179lx	137lx	108lx	88lx	72lx	61lx	52lx	45lx	39lx	34lx	30lx	27lx	24lx	22lx
814.6fc	203.7fc	90.5fcd	50.9fcd	32.6fcd	22.6fcd	16.6fcd	12.7fcd	10.1fcd	8.1fcd	6.7fcd	5.7fcd	4.8fcd	4.2fcd	3.6fcd	3.2fcd	2.8fcd	2.5fcd	2.3fcd	2fcd

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
114.5°	154.7°	167°	81.6%	55.2%



ISO Diagrams

ISO candela diagram



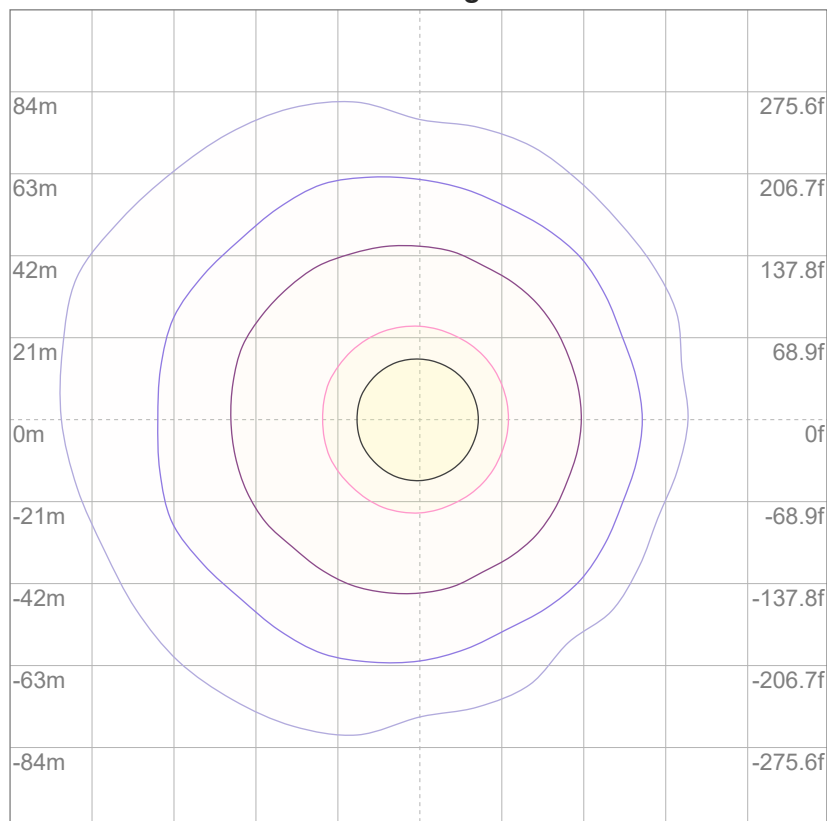
10%	877 cd
20%	1754 cd
30%	2631 cd
40%	3507 cd
50%	4384 cd
60%	5261 cd
70%	6138 cd
80%	7015 cd
90%	7892 cd

Conditions:

Number of c-planes: 16

Candela at center: 8769 cd

ISO lux diagram



3%	2.63 lx
5%	4.38 lx
10%	8.77 lx
30%	26.3 lx
50%	43.8 lx

Conditions:

Number of c-planes: 16

Lux at center: 87.7 lx

Lux distribution on a surface when lamp is mounted at 10 meters from the surface.



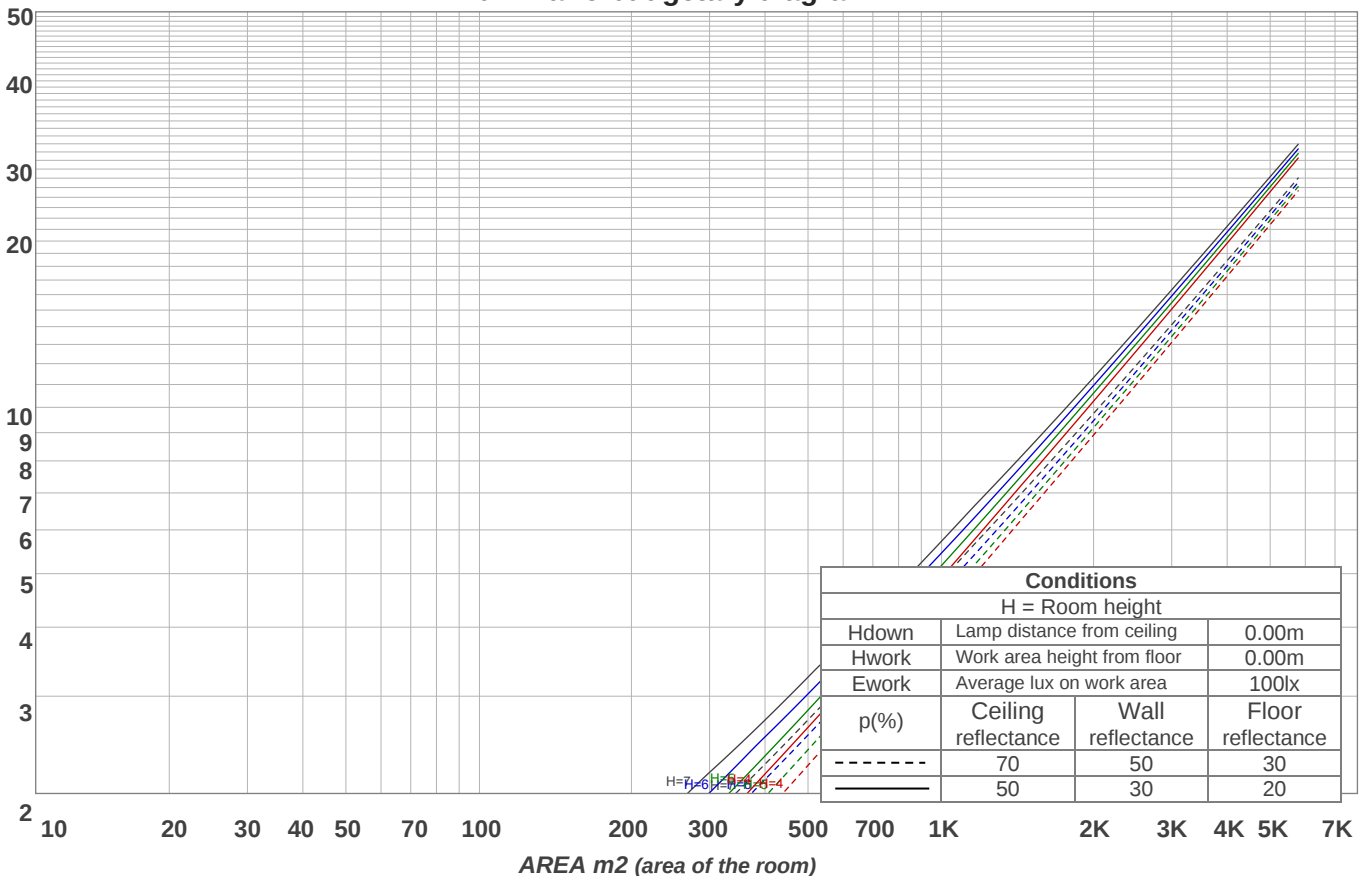
Light Planning

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 Lumens delivered to the task surface																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	103	99	96	98	95	92	94	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	76	73	71
3	91	81	73	66	88	79	72	66	76	70	64	73	68	63	71	66	62	60
4	83	71	63	56	81	70	62	56	67	60	55	65	59	54	63	58	53	51
5	76	64	55	48	74	63	54	48	60	53	47	58	52	47	57	51	46	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	32	43	37	32	30
9	57	43	35	30	55	43	35	30	42	34	29	41	34	29	39	33	29	27
10	53	40	32	27	52	39	32	27	38	31	27	37	31	27	37	31	26	25

LAMPS (number of lamps)

Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
830 lm	2391 lm	3666 lm	4489 lm	4713 lm	4230 lm	3004 lm	1318 lm	177 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
8.31 lm	10.5 lm	13.3 lm	14.8 lm	15.0 lm	13.9 lm	11.3 lm	7.31 lm	2.56 lm

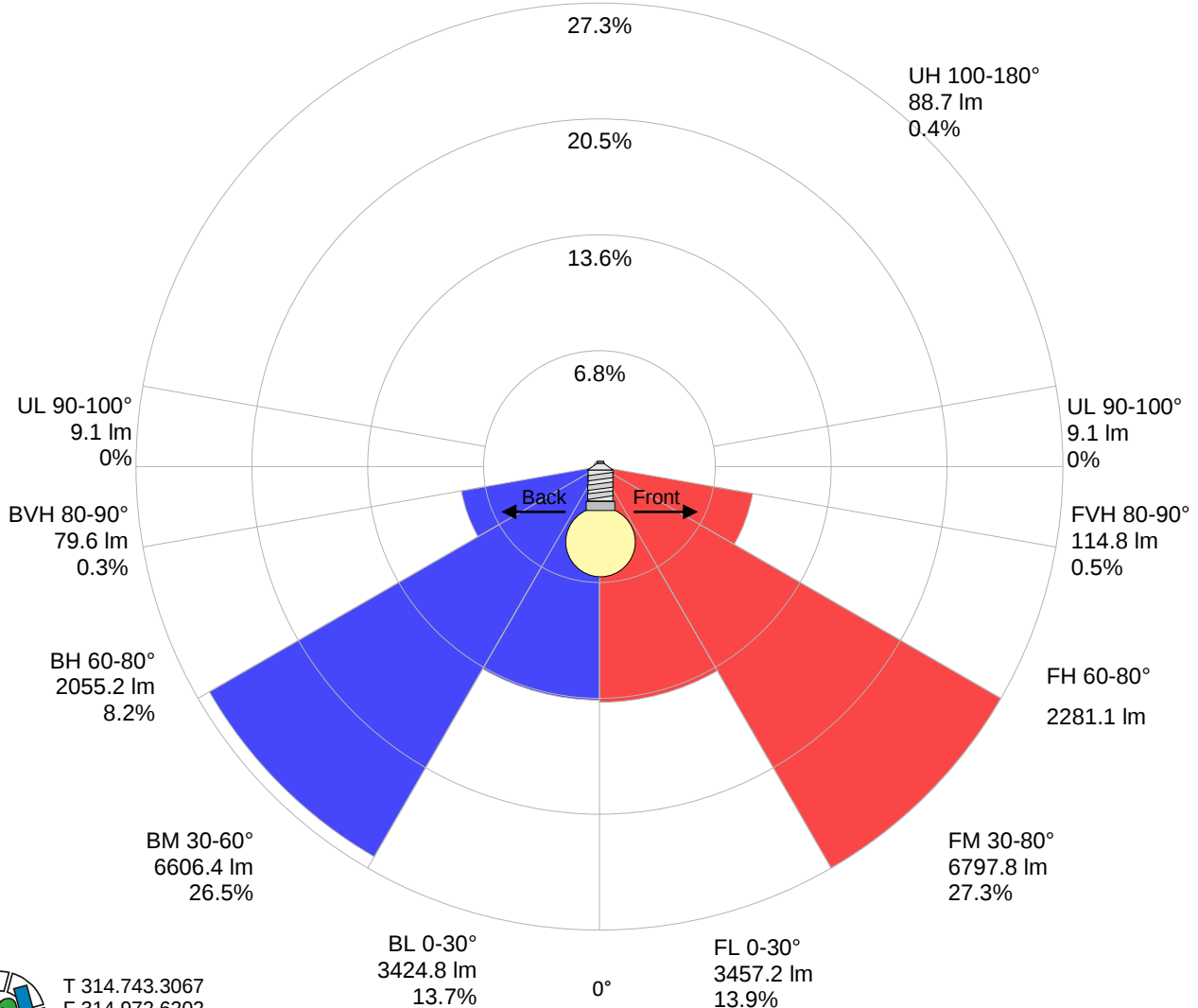


Road Report

LCS table

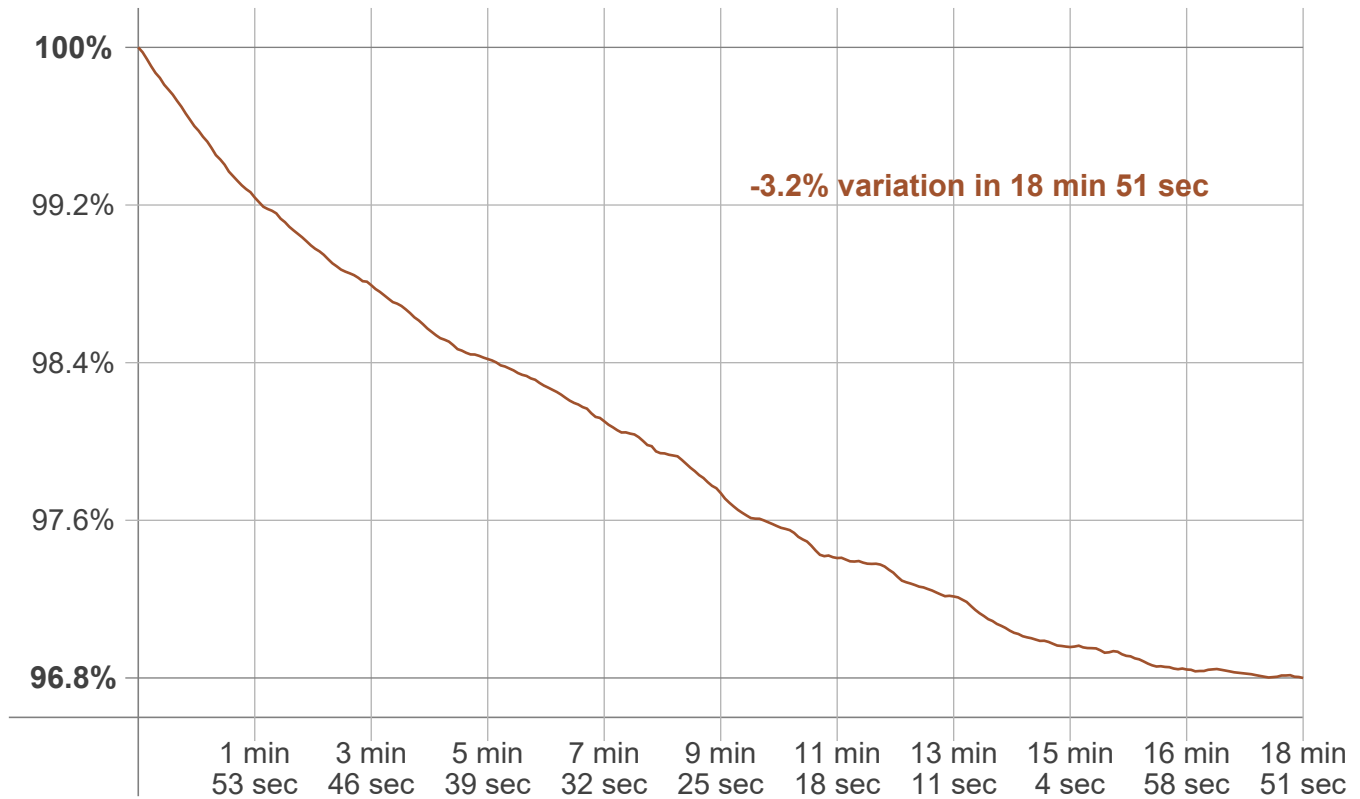
BUG rating:	B4 U3 G3	
Forward light	Lumens	Lumens %
Low(0-30):	3457.2	13.9%
Medium(30-60):	6797.8	27.3%
High(60-80):	2281.1	9.2%
Very high(80-90):	114.8	0.5%
Back light		
Low(0-30):	3424.8	13.7%
Medium(30-60):	6606.4	26.5%
High(60-80):	2055.2	8.2%
Very high(80-90):	79.6	0.3%
Uplight		
Low(90-100):	9.1	0%
High(100-180):	88.7	0.4%

LCS graph



Stabilization

Warmup curve



Warmup result

Warmup time:	Lamp stabilized in 18 min 51 sec
Warmup variation	-3.2%

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
5047 K	+72 K	5119 K

Output change

Output start	Output change	Output end
25700 lm	-785 lm	24915 lm

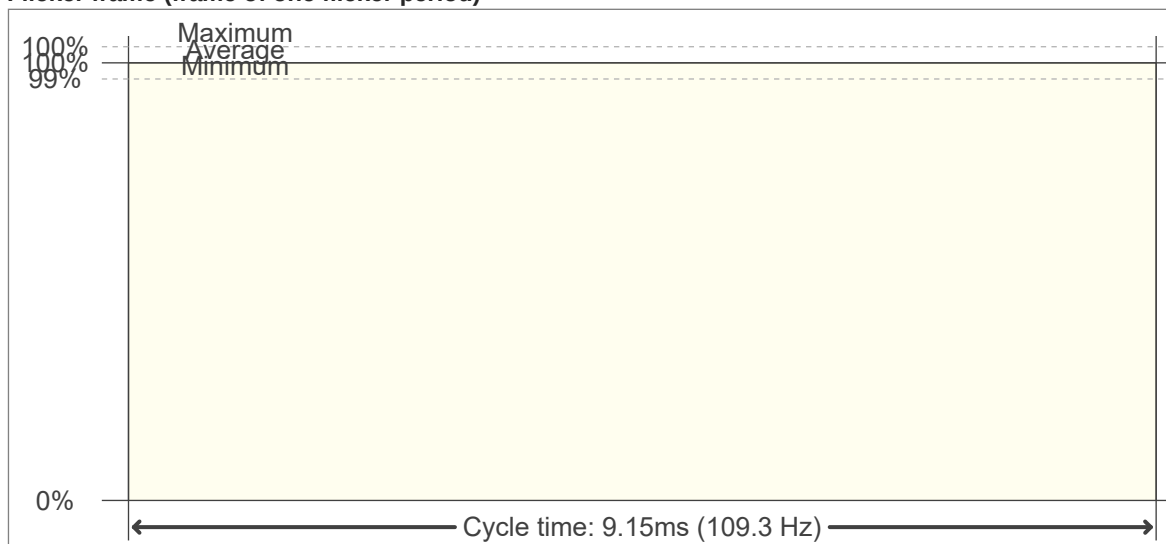


Flicker Specifications

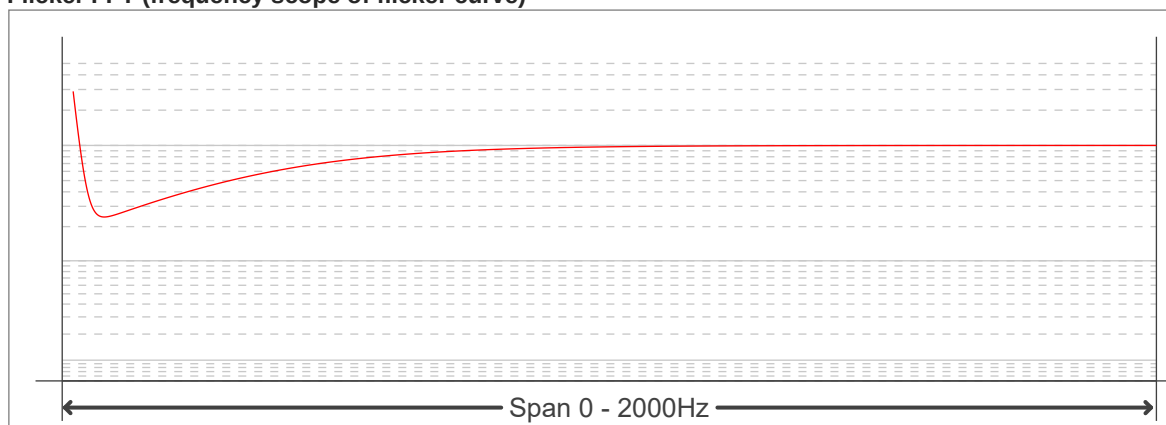
Flicker curve (complete sampled flicker signal)



Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



Flicker results:

Flicker frequency:	109.29 Hz
Flicker index:	0
Flicker percentage:	0.04 %
SVM: (Visual flicker)	0

Flicker conditions:

Sample rate:	20000 samples/second
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