Light efficiency:

149 Lumen/Watt

Light quality:

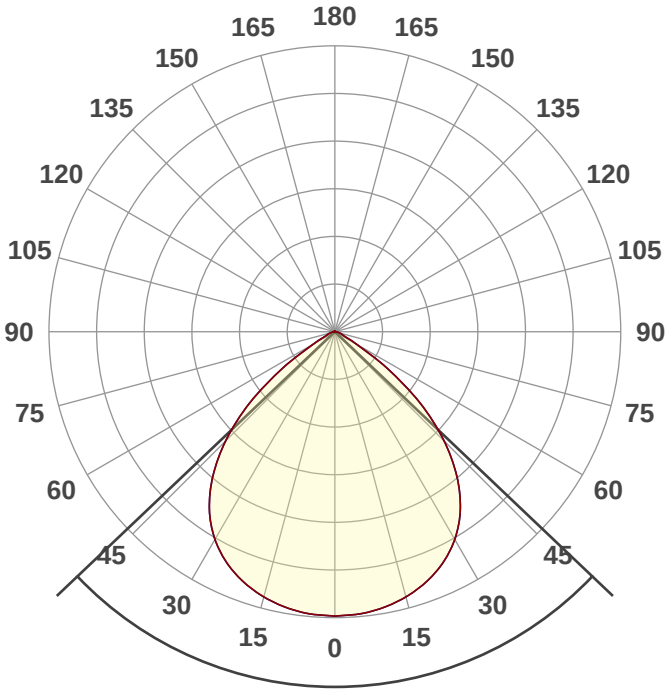
CRI: 74.5

Color temperature:

5327 K

Output: 30801 lm
Peak: 15759 cd

Power: 207.3 W
PF: 1.0



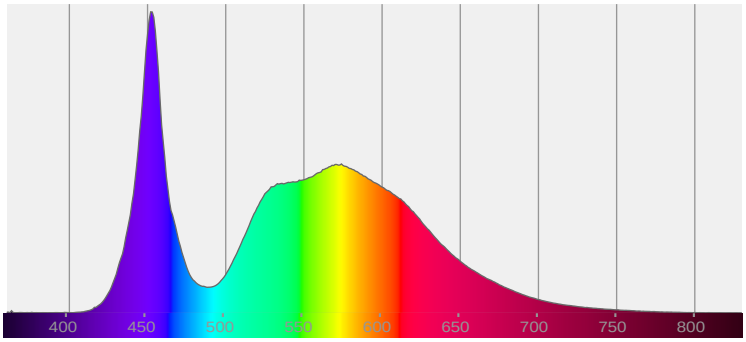
Beam angle **92.9°**

CIE 1931
x: 0.336
y: 0.338

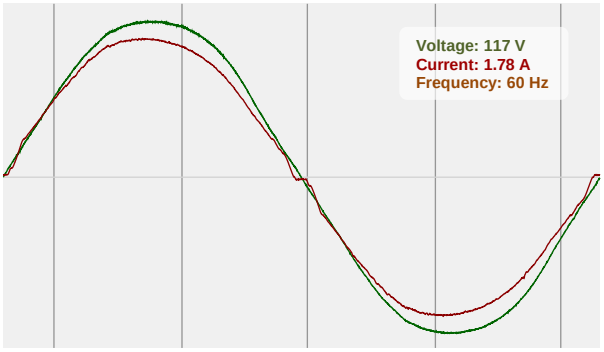
Product name:
HPAL2-50K200-90

Date and time:
3/3/2021 11:09:51 AM

Spectra



Power



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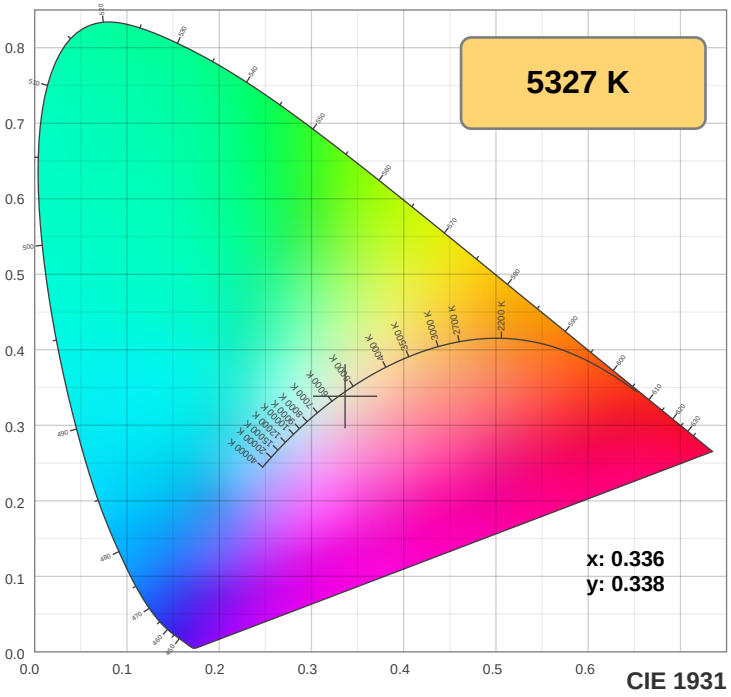
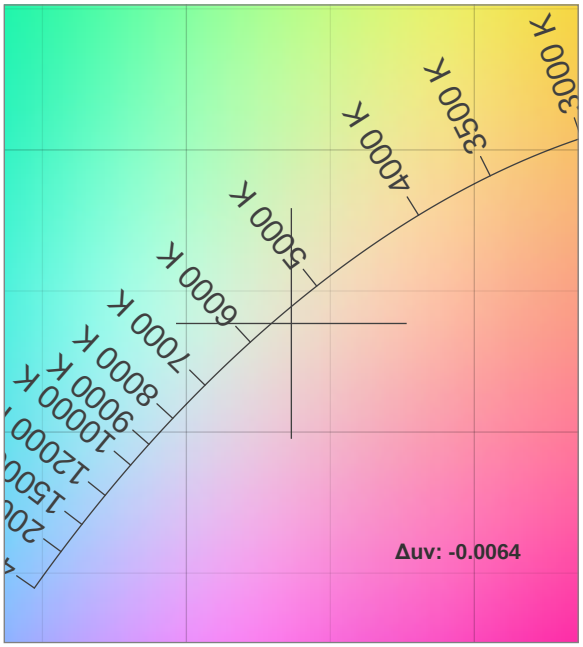
Color Specifications

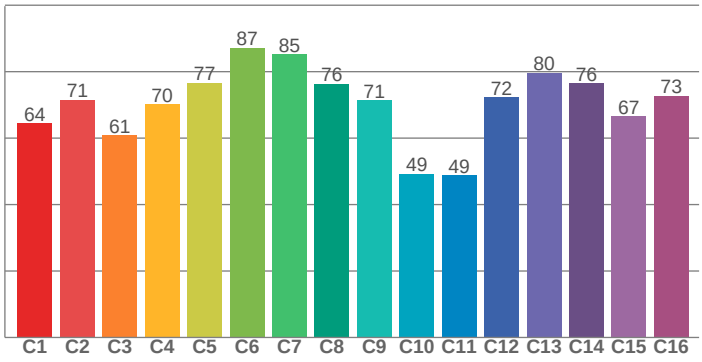


CIE 1931

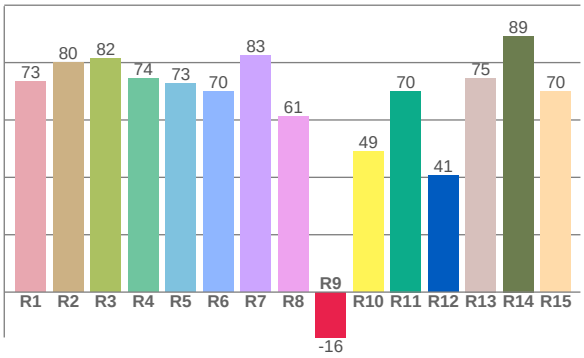


CIE 1931 ZOOM

TM30: 70.1



CRI: 74.5 (R1-R8)



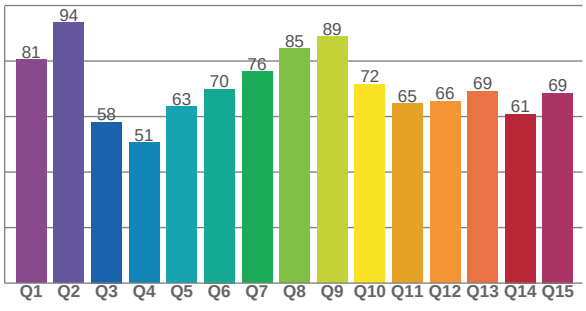
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
73.5	79.9	81.6	74.5	72.8	69.9	82.5	61.3	-15.8	49.0	70.1	40.7	74.6	89.3	69.8

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
64.5	71.5	60.8	70.2	76.7	87.2	85.2	76.4	71.4	49.3	48.7	72.2	79.7	76.4	66.6	72.8

CQS: 68.9



CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80.5	93.8	58.1	50.7	63.5	69.9	76.2	84.5	88.8	71.6	64.7	65.5	69.1	60.9	68.5

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 diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
5327 K	74.5	-15.8	70.1	93.3	68.9	0.336	0.338	0.211	0.318	-0.0064

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TM30 Report

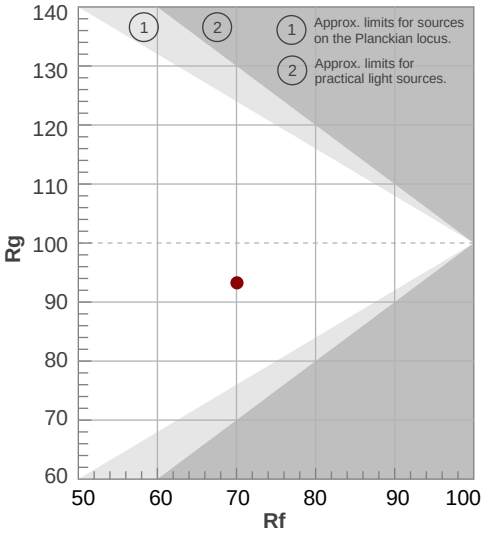
Rf 70.1

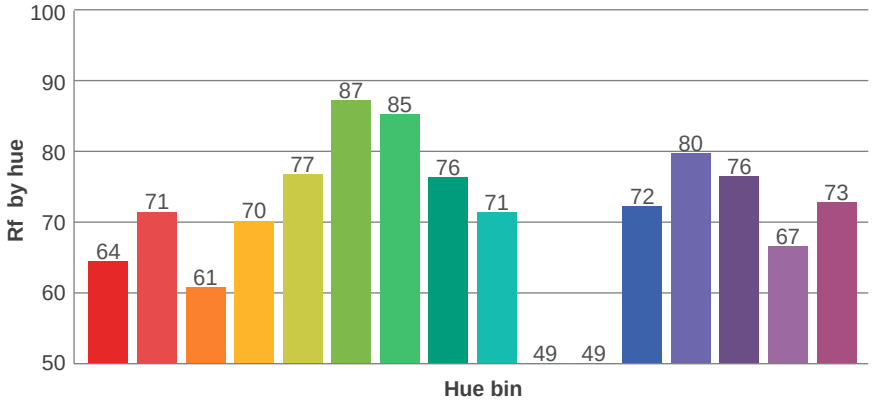
Fidelity index Rf

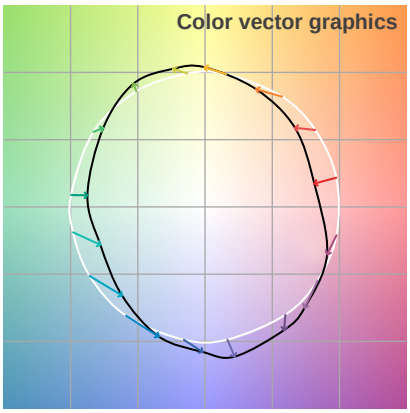
Rg 93.3

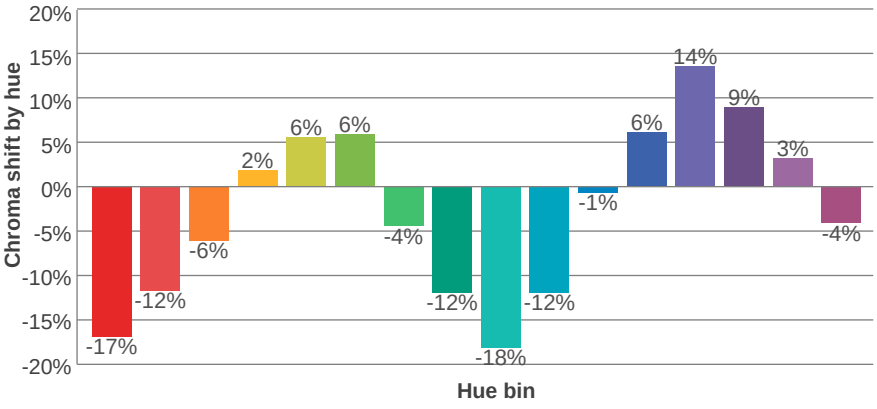
Gammut index Rg

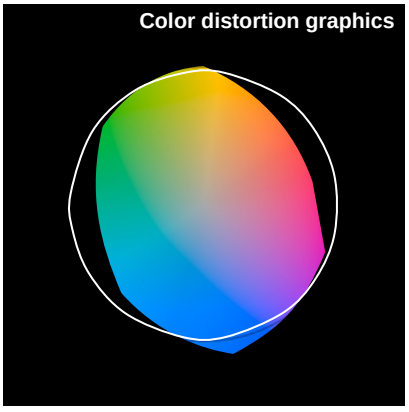
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	64	-17%	-1%
2	71	-12%	10%
3	61	-6%	19%
4	70	2%	17%
5	77	6%	10%
6	87	6%	-1%
7	85	-4%	-7%
8	76	-12%	-2%
9	71	-18%	13%
10	49	-12%	25%
11	49	-1%	29%
12	72	6%	15%
13	80	14%	3%
14	76	9%	-7%
15	67	3%	-22%
16	73	-4%	-15%

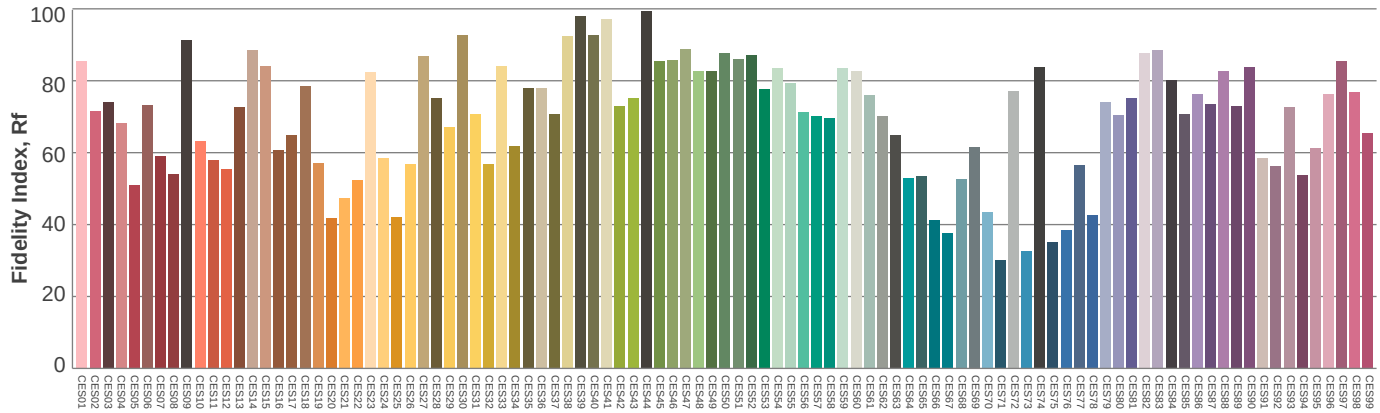












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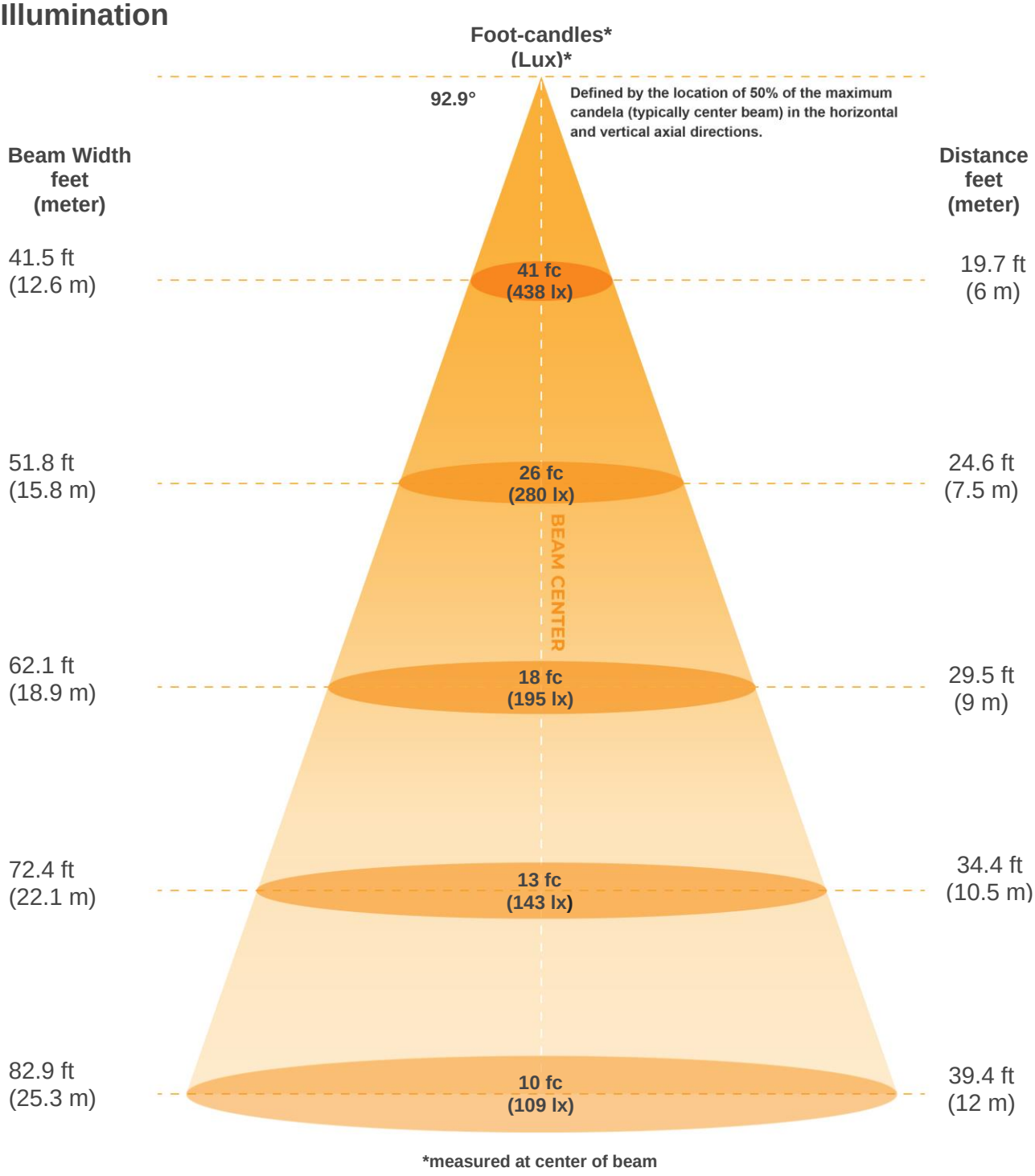
Illumination



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
15759lx	3940lx	1751lx	985lx	630lx	438lx	322lx	246lx	195lx	158lx	130lx	109lx	93lx	80lx	70lx	62lx	55lx	49lx	44lx	39lx
1464fcd	366fcd	162.7fc	91.5fcd	58.6fcd	40.7fcd	29.9fcd	22.9fcd	18.1fcd	14.6fcd	12.1fcd	10.2fcd	8.7fcd	7.5fcd	6.5fcd	5.7fcd	5.1fcd	4.5fcd	4.1fcd	3.7fcd

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
92.9°	**119.1°**	**140.2°**	**96.0%**	**75.7%**

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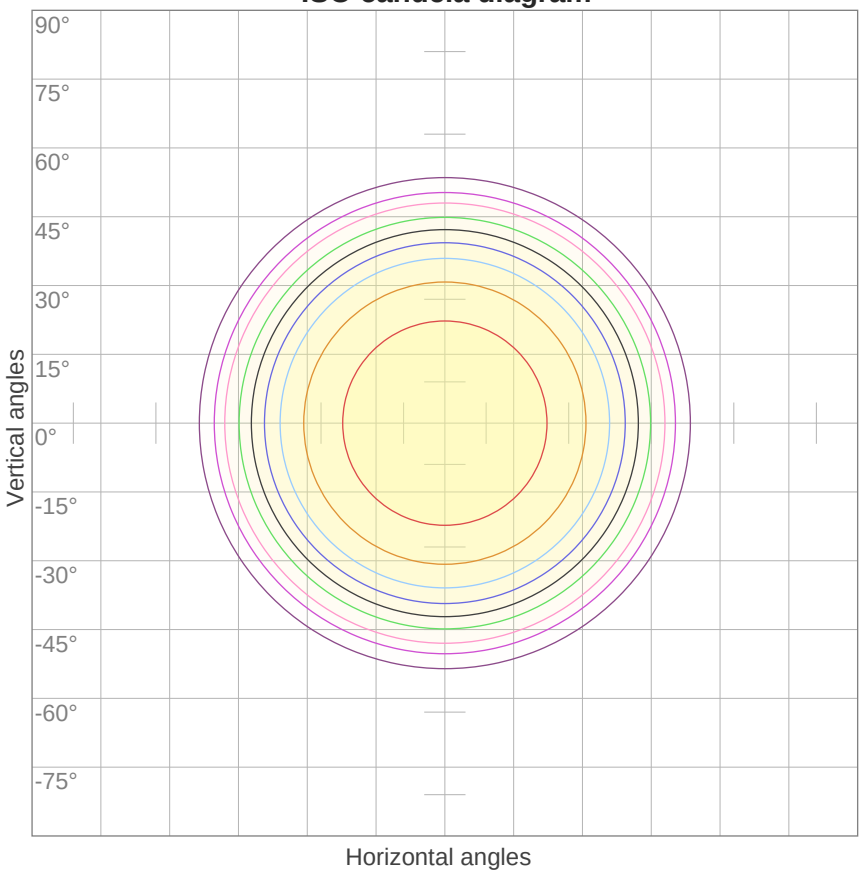
ISO Diagrams

ISO candela diagram



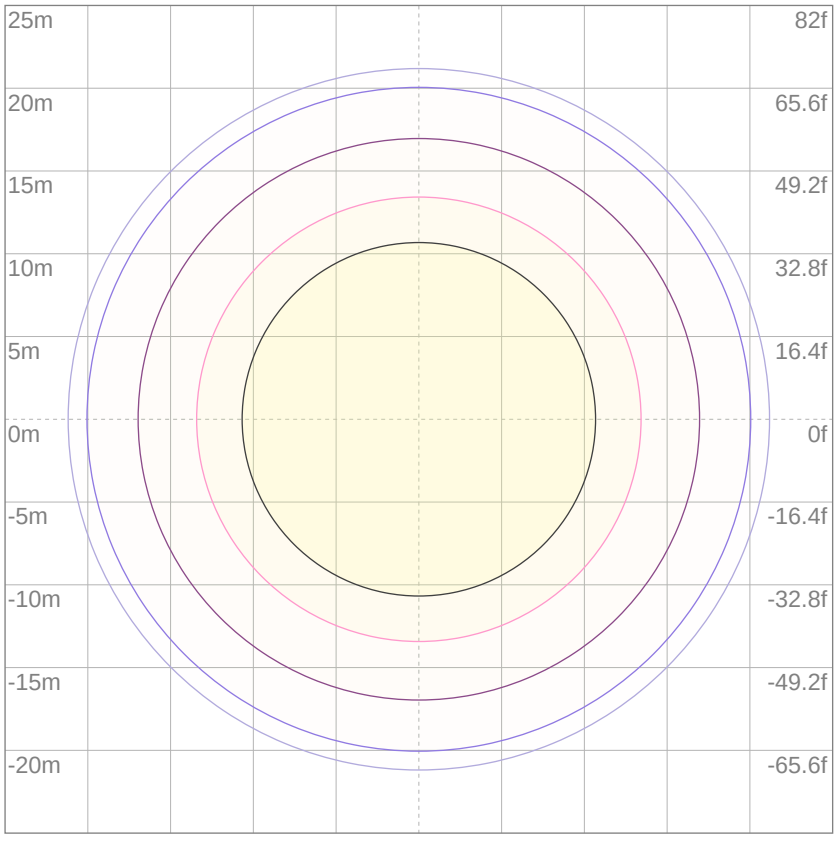
10%	1576 cd
20%	3152 cd
30%	4728 cd
40%	6304 cd
50%	7879 cd
60%	9455 cd
70%	11031 cd
80%	12607 cd
90%	14183 cd

Conditions:

Number of c-planes: 16

Candela at center: 15759 cd

ISO lux diagram



3%	4.73 lx
5%	7.88 lx
10%	15.8 lx
30%	47.3 lx
50%	78.8 lx

Conditions:

Number of c-planes: 16

Lux at center: 158 lx

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

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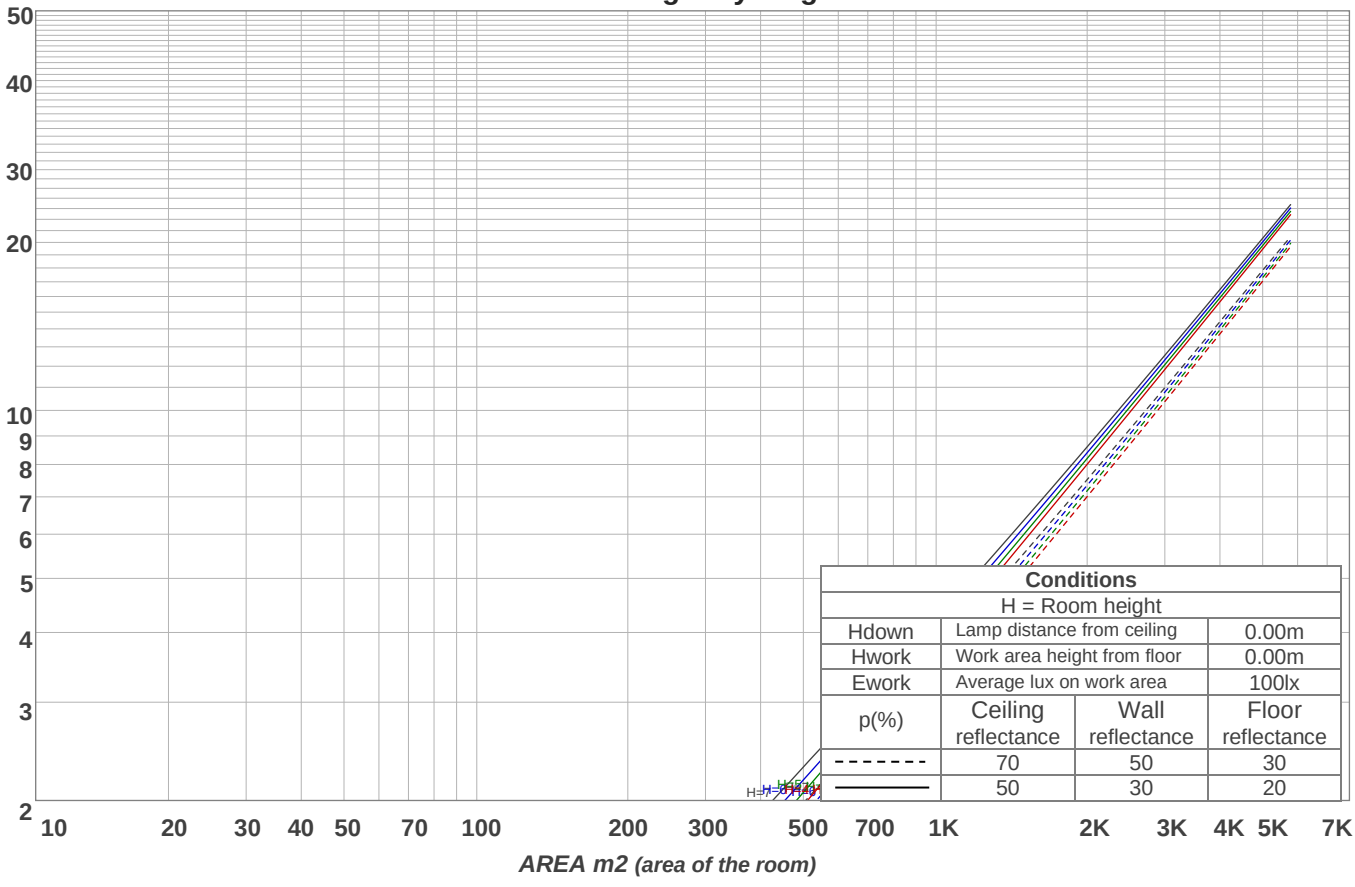
Light Planning

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	112	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89
2	104	98	92	88	101	96	91	87	92	88	85	89	86	83	86	84	81	79
3	97	88	82	77	94	87	81	76	84	79	75	81	77	73	79	75	72	70
4	90	80	73	67	88	79	72	67	76	70	66	74	69	65	72	68	64	62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	57	56
6	78	66	59	53	76	65	58	53	64	57	52	62	56	52	61	56	52	50
7	73	61	53	48	71	60	53	48	58	52	47	57	51	47	56	51	47	45
8	68	56	48	43	66	55	48	43	54	47	43	53	47	43	52	46	42	41
9	64	52	44	39	62	51	44	39	50	43	39	49	43	39	48	42	39	37
10	60	48	41	36	59	47	40	36	46	40	36	45	40	35	45	39	35	34

Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
1493 lm	4293 lm	6501 lm	7514 lm	6507 lm	3251 lm	715 lm	294 lm	86.6 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
11.4 lm	13.0 lm	17.3 lm	21.9 lm	23.6 lm	22.7 lm	19.2 lm	13.2 lm	4.79 lm

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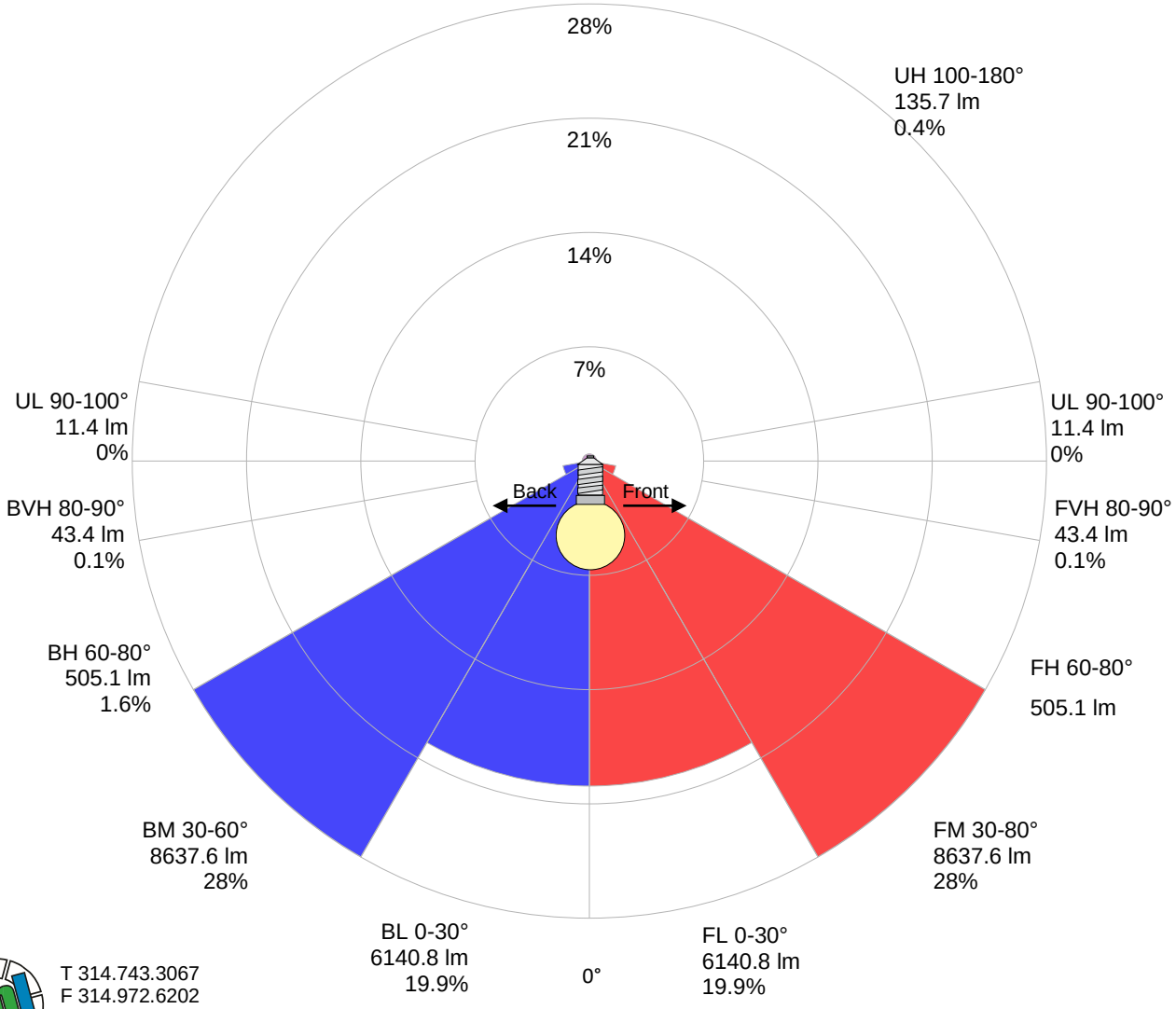
Road Report

LCS table

BUG rating:	B5 U3 G1	
Forward light	Lumens	Lumens %
Low(0-30):	6140.8	19.9%
Medium(30-60):	8637.6	28%
High(60-80):	505.1	1.6%
Very high(80-90):	43.4	0.1%
Back light		
Low(0-30):	6140.8	19.9%
Medium(30-60):	8637.6	28%
High(60-80):	505.1	1.6%
Very high(80-90):	43.4	0.1%
Uplight		
Low(90-100):	11.4	0%
High(100-180):	135.7	0.4%

LCS graph



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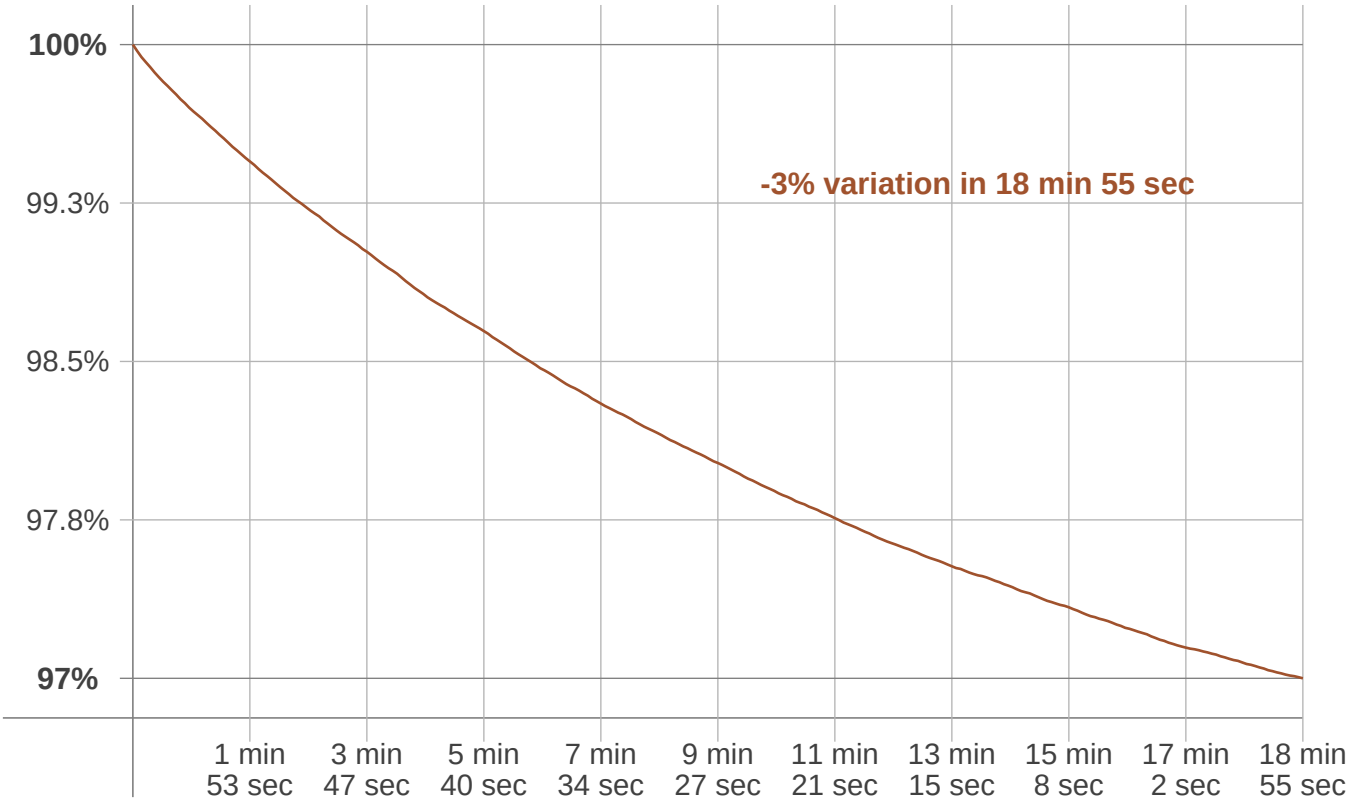
Stabilization

Warmup curve



Warmup result

Warmup time:	**18 min 55 sec**
Warmup variation	**-3.0%**

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
5287 K	+40 K	5327 K

Output change

Output start	Output change	Output end
31717 lm	-916 lm	30801 lm

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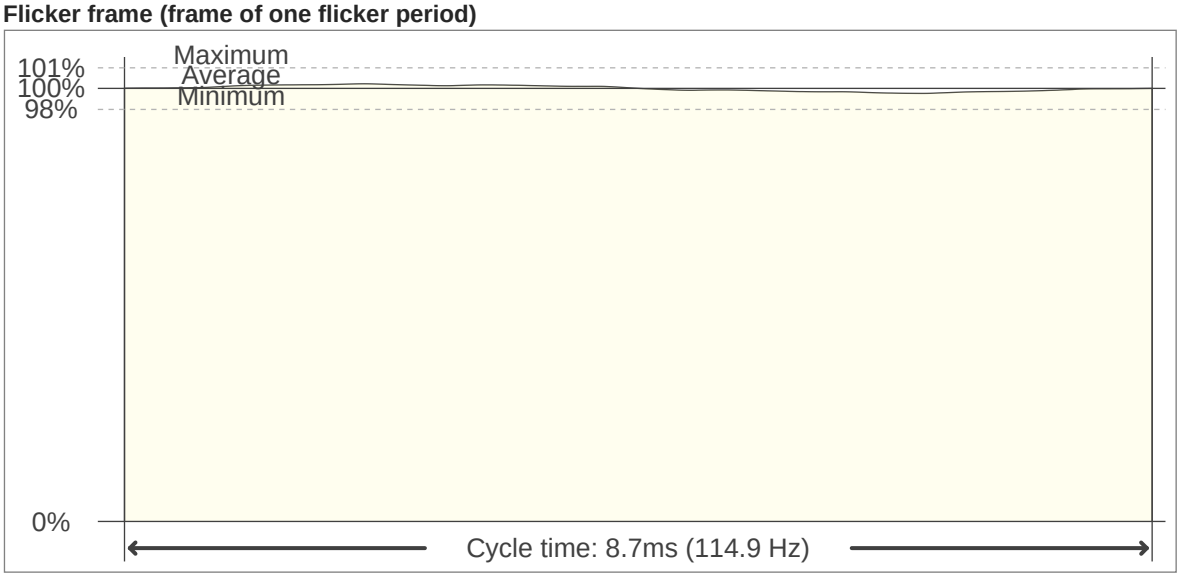
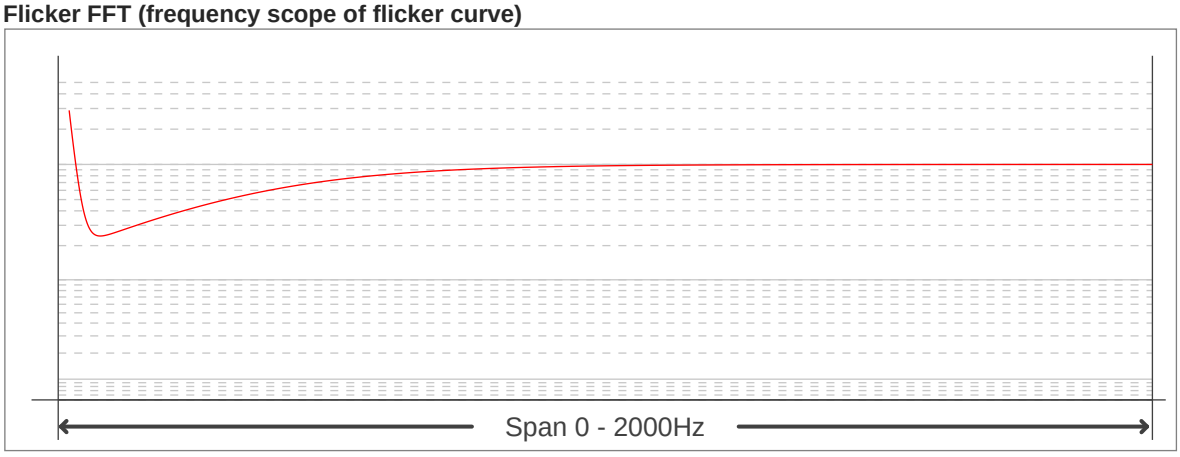
Flicker

Flicker curve (complete sampled flicker signal)

Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



Flicker results:

Flicker frequency:	**114.94 Hz**
Flicker index:	**0**
Flicker percentage:	**1.14 %**
SVM: (Visual flicker)	**0.03**

Flicker conditions:

Sample rate:	**40000 samples/second**

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