

Light efficiency:



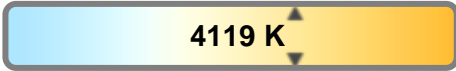
Output: 6310 lm

Light quality:



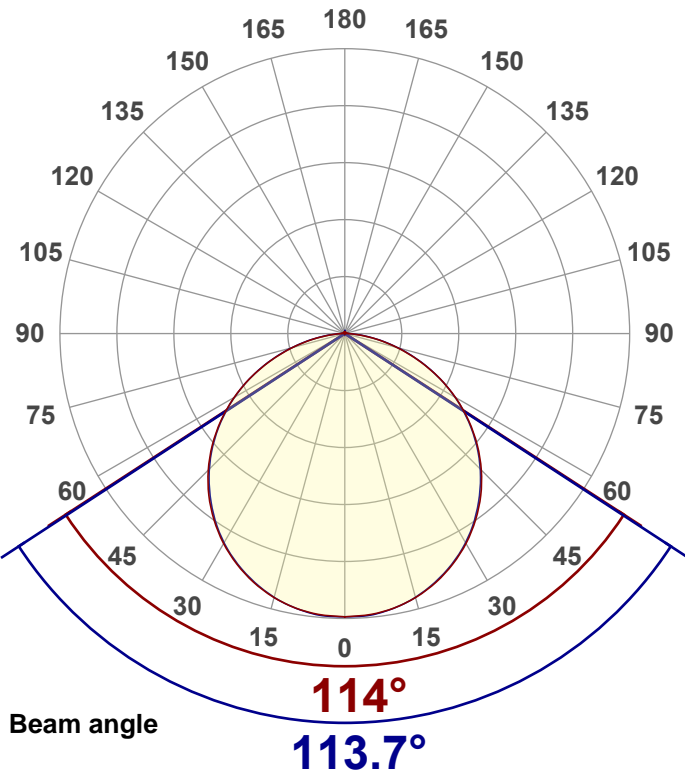
Peak: 2158 cd

Color temperature:



Power: 50.0 W

PF: 0.99

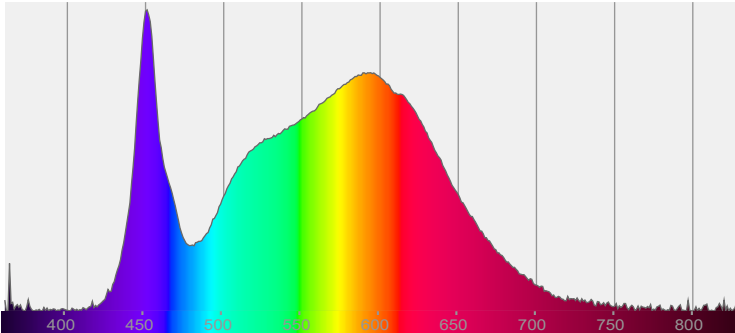


Product name:
LPD-TWR24-50 (100%)
Date and time:
3/8/2024 10:59:03 AM

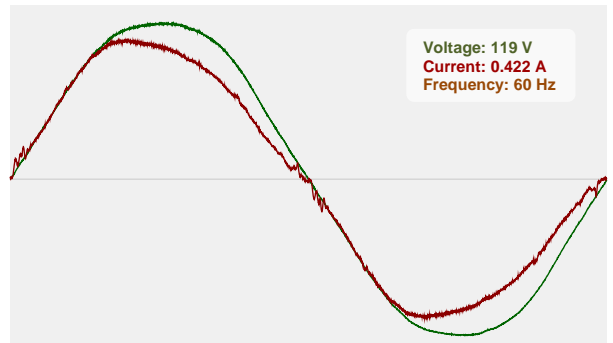


CIE 1931
x: 0.376
y: 0.375

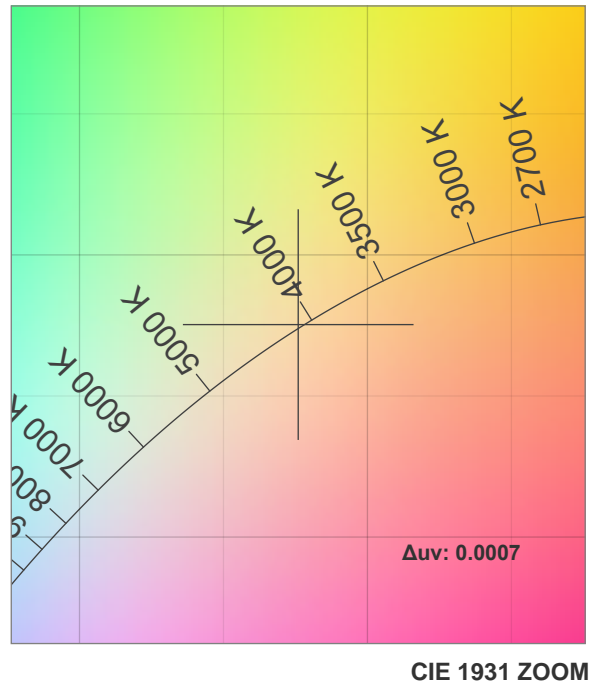
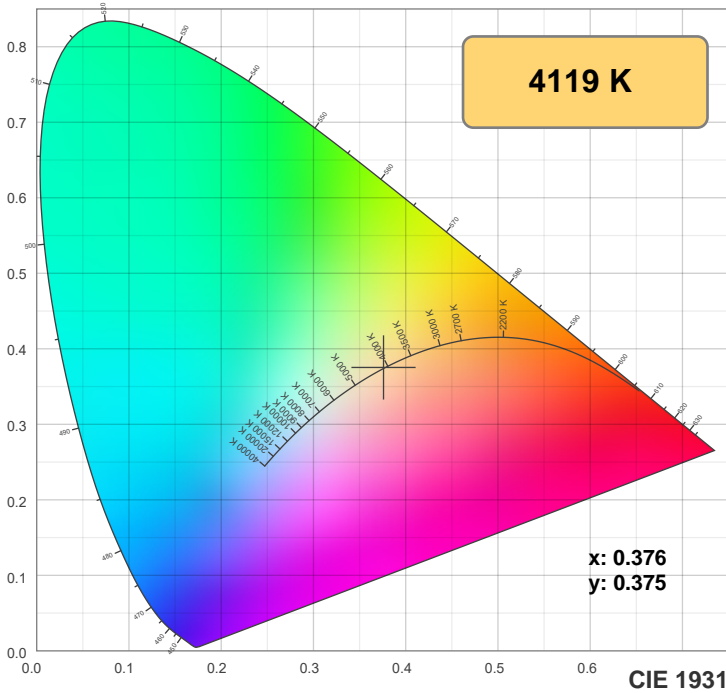
Spectra



Power

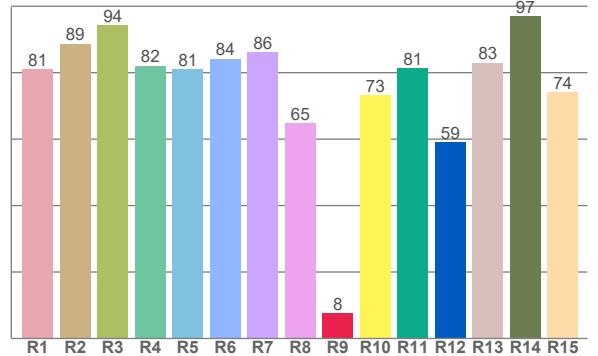
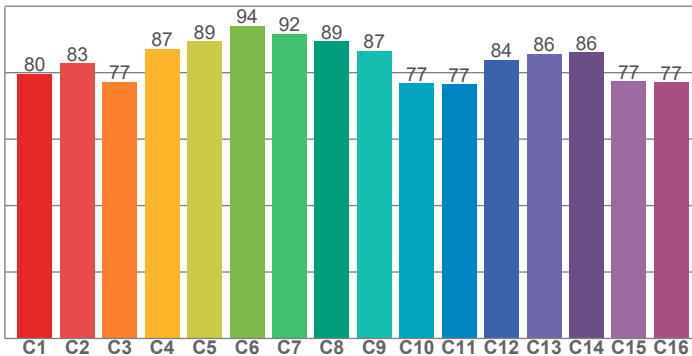


Color Specifications



TM30: 83.5

CRI: 82.8 (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
81.1	88.7	94.3	82.1	81.0	84.1	86.2	64.8	7.5	73.2	81.3	59.1	83.0	97.0	74.2

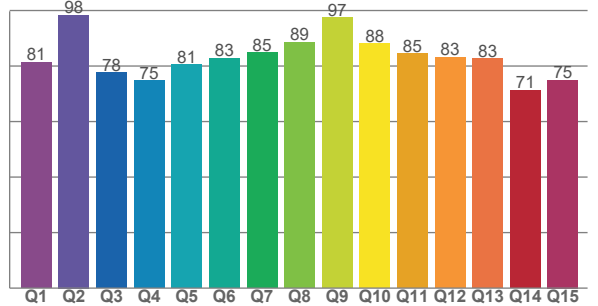
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
79.7	82.8	77.2	87.1	89.4	94.1	91.7	89.4	86.5	76.8	76.5	83.9	85.7	86.2	77.3	77.1

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
81.3	98.4	77.7	74.7	80.5	82.8	84.8	88.5	97.5	88.0	84.6	83.2	82.7	71.3	74.9

CQS: 81.8



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 division from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
4119 K	82.8	7.5	83.5	95.5	81.8	0.376	0.375	0.223	0.334	0.0007

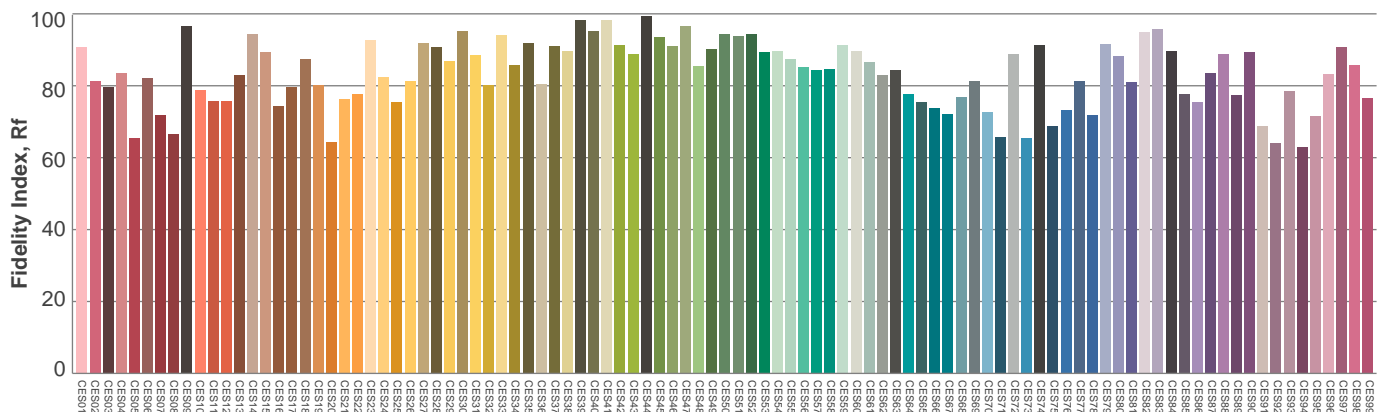
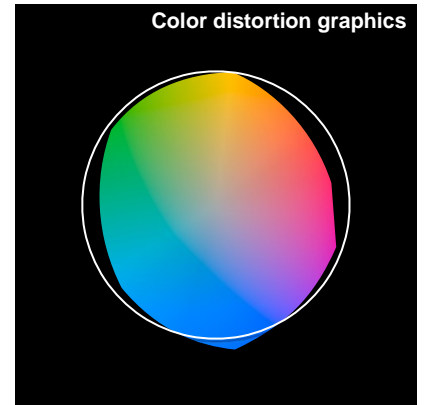
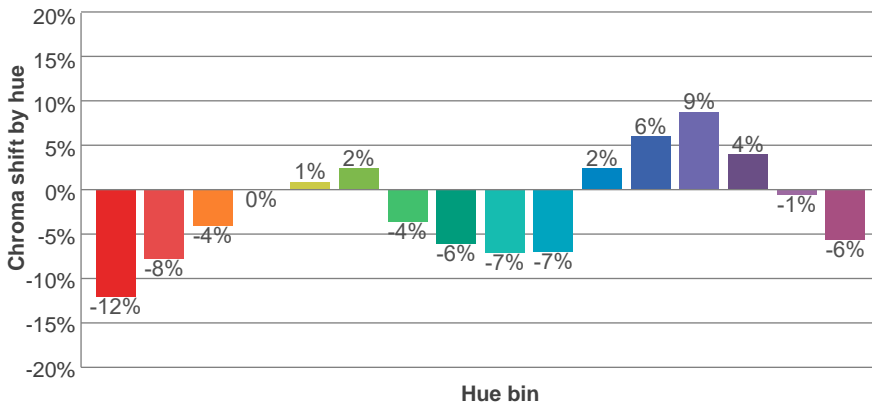
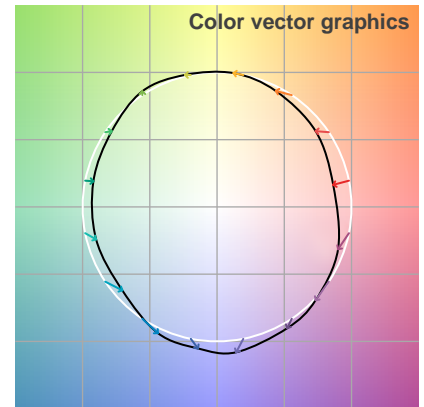
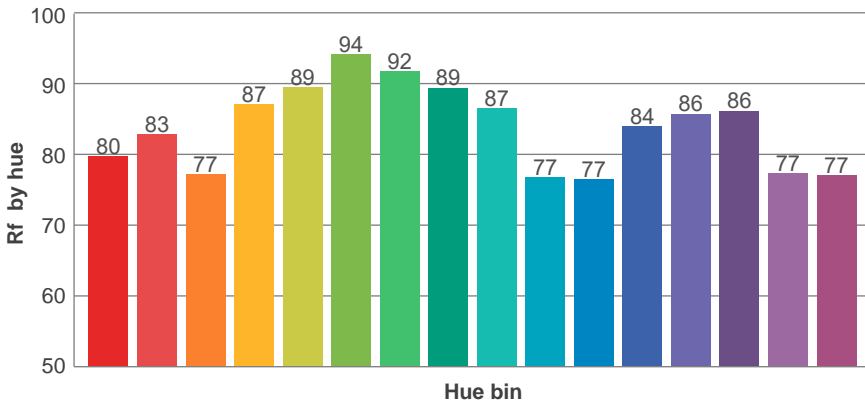
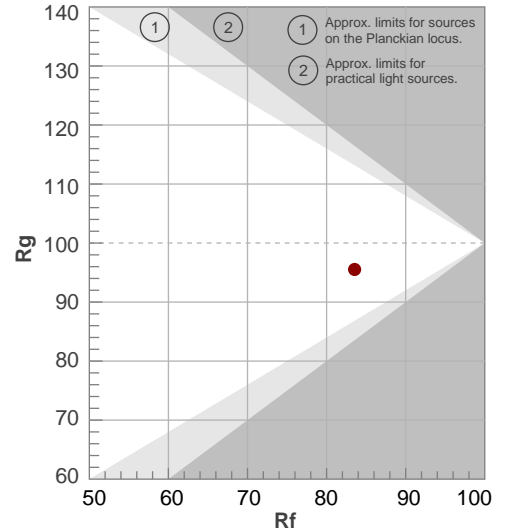


TM30 Report

Rf 83.5
Fidelity index Rf

Rg 95.5
Gammut index Rg

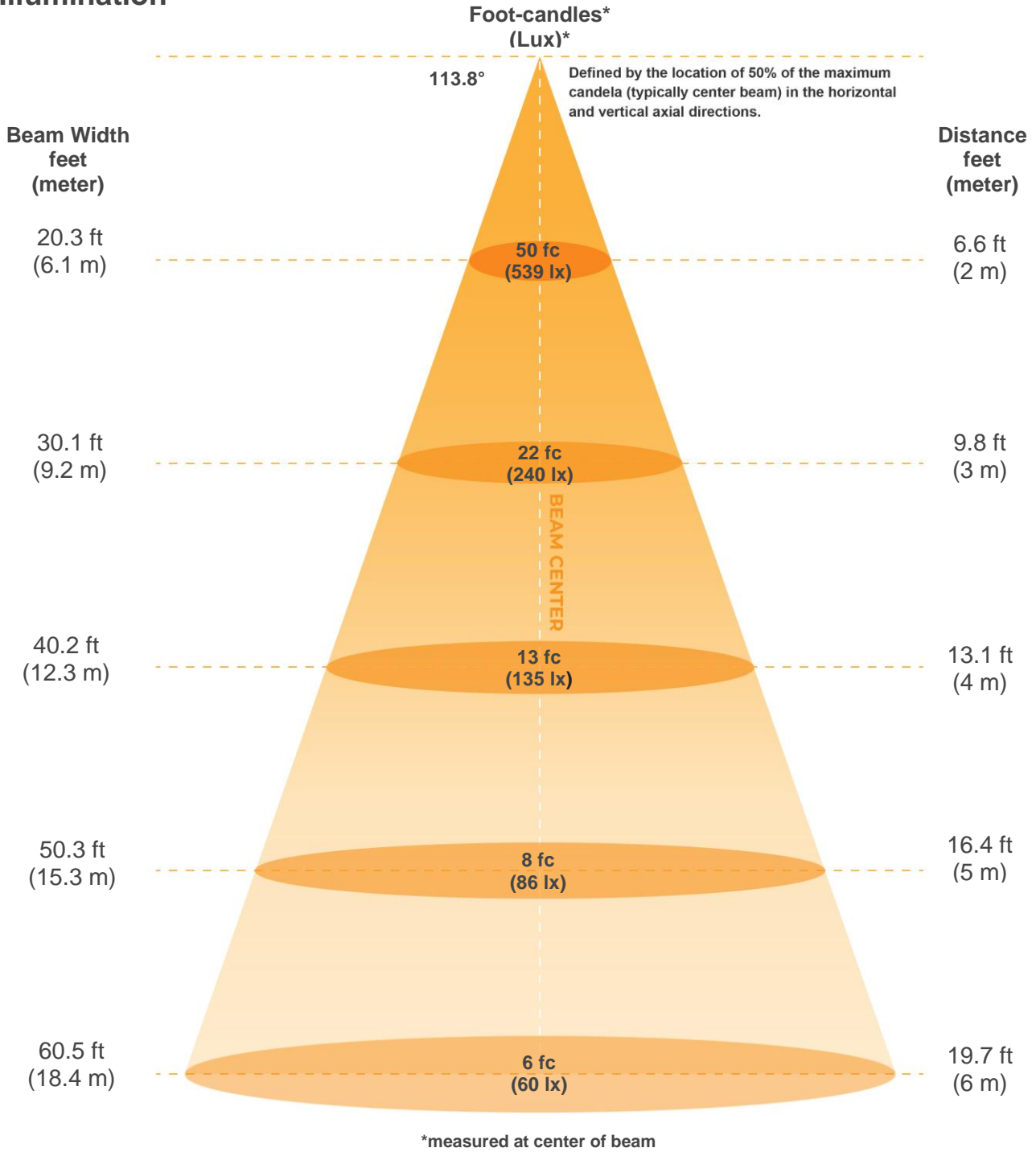
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	80	-12%	-1%
2	83	-8%	6%
3	77	-4%	12%
4	87	0%	7%
5	89	1%	4%
6	94	2%	-2%
7	92	-4%	-3%
8	89	-6%	-1%
9	87	-7%	6%
10	77	-7%	12%
11	77	2%	16%
12	84	6%	7%
13	86	9%	-7%
14	86	4%	-7%
15	77	-1%	-17%
16	77	-6%	-13%



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
2156lx	539lx	240lx	135lx	86lx	60lx	44lx	34lx	27lx	22lx	18lx	15lx	13lx	11lx	10lx	8lx	7lx	7lx	6lx	5lx
200.3fcd	50.1fcd	22.3fcd	12.5fcd	8fcd	5.6fcd	4.1fcd	3.1fcd	2.5fcd	2fcd	1.7fcd	1.4fcd	1.2fcd	1fcd	0.9fcd	0.8fcd	0.7fcd	0.6fcd	0.6fcd	0.5fcd

Beam angle X	Beam Angle Y	Field angle X	Field Angle Y	Cutoff angle 2,5%	Intensity ratio in 120°	Intensity ratio in 90°
114°	113.7°	162°	162.4°	175.5°	77.8%	52.8%



ISO Diagrams

ISO candela diagram



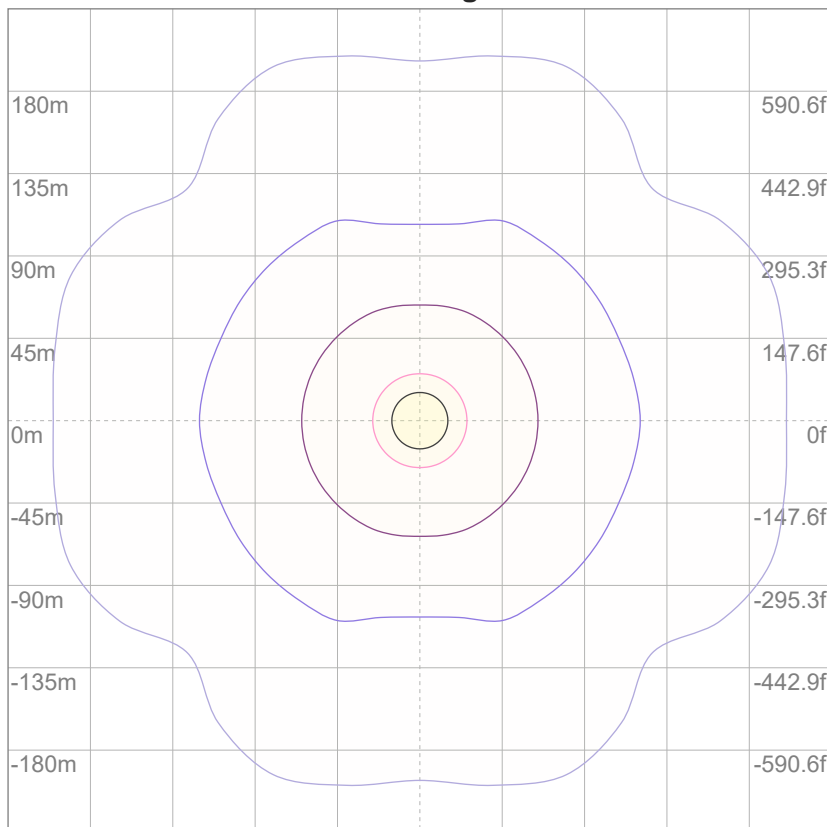
10%	216 cd
20%	431 cd
30%	647 cd
40%	862 cd
50%	1078 cd
60%	1294 cd
70%	1509 cd
80%	1725 cd
90%	1940 cd

Conditions:

Number of c-planes: 16

Candela at center: 2156 cd

ISO lux diagram



3%	0.647 lx
5%	1.08 lx
10%	2.16 lx
30%	6.47 lx
50%	10.8 lx

Conditions:

Number of c-planes: 16

Lux at center: 21.6 lx

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

Mounting height: 10 meters (33 feet)



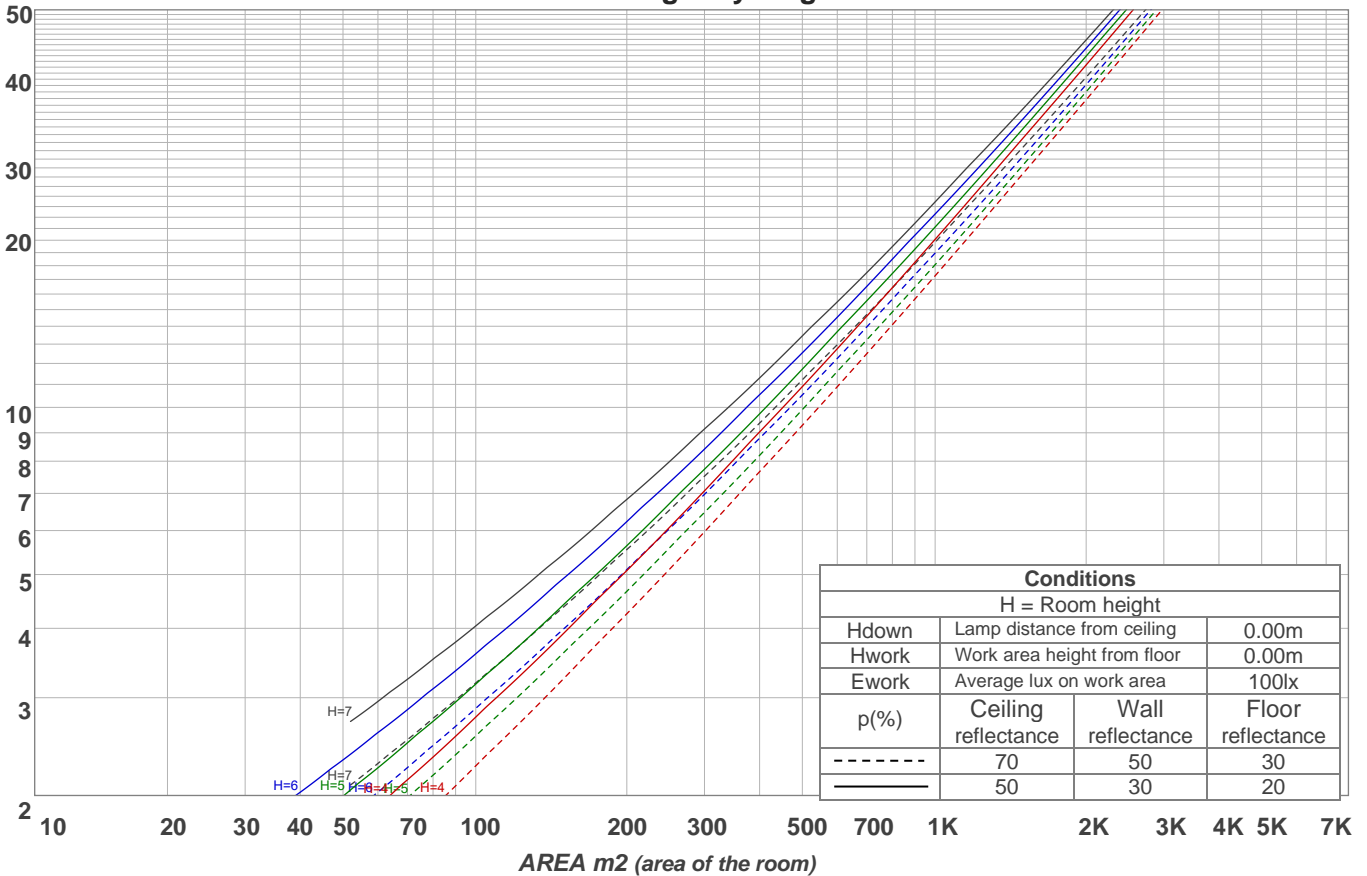
Light Planning

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	101	101	101	99
1	108	104	99	95	106	101	97	94	97	94	91	93	90	88	89	87	85	83
2	98	90	83	77	96	88	82	76	84	79	74	81	77	73	78	74	71	69
3	90	79	71	64	87	77	70	64	74	68	62	71	66	61	69	64	60	58
4	82	70	61	54	80	69	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	47	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	41	68	55	47	40	53	46	40	51	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	45	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	33	28	40	33	28	38	32	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	25	24

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°
204 lm	586 lm	892 lm	1080 lm	1127 lm	1021 lm	777 lm	443 lm	128 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
9.74 lm	7.18 lm	7.21 lm	7.17 lm	6.66 lm	5.80 lm	4.61 lm	2.81 lm	0.953 lm

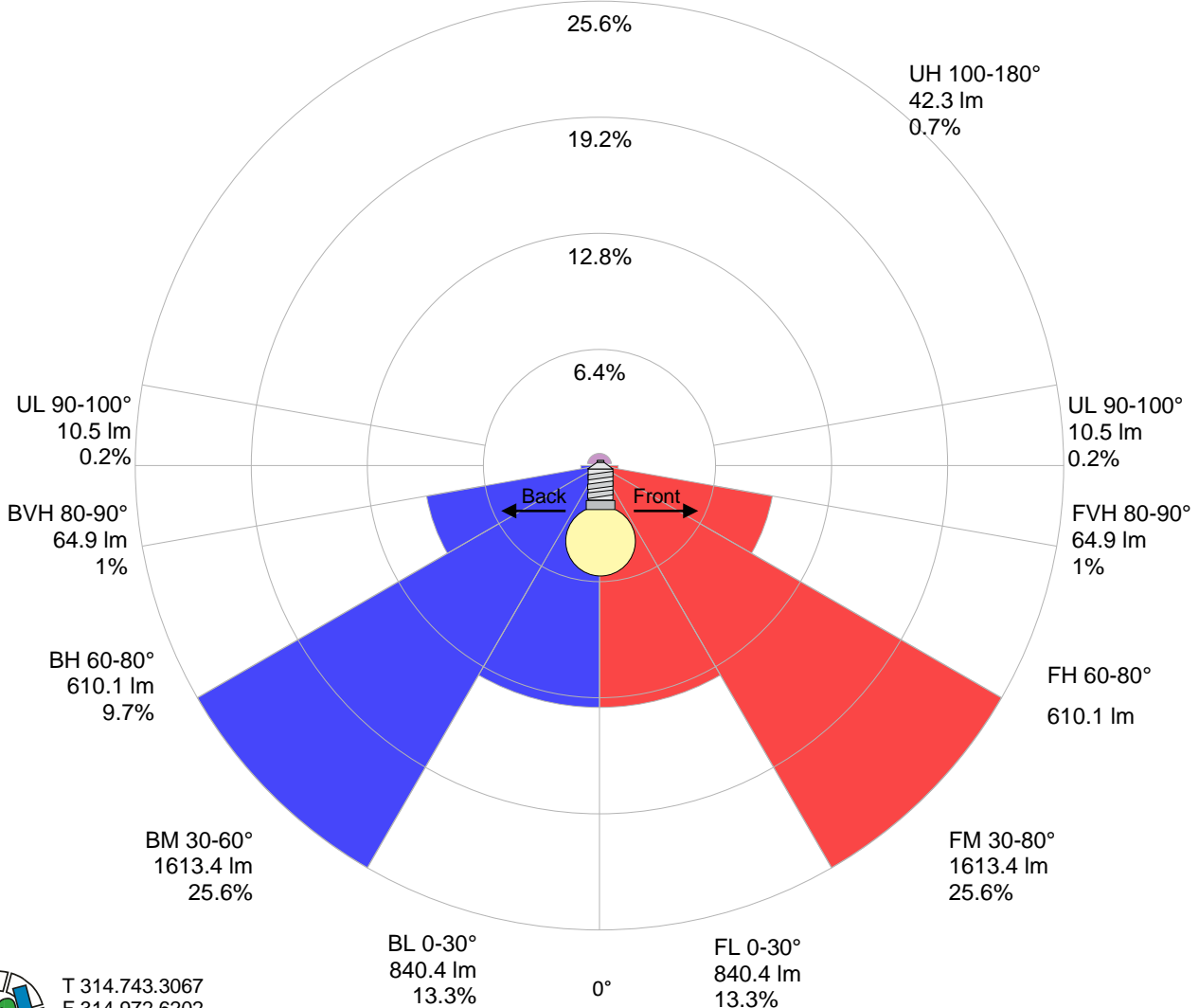


Road Report

LCS table

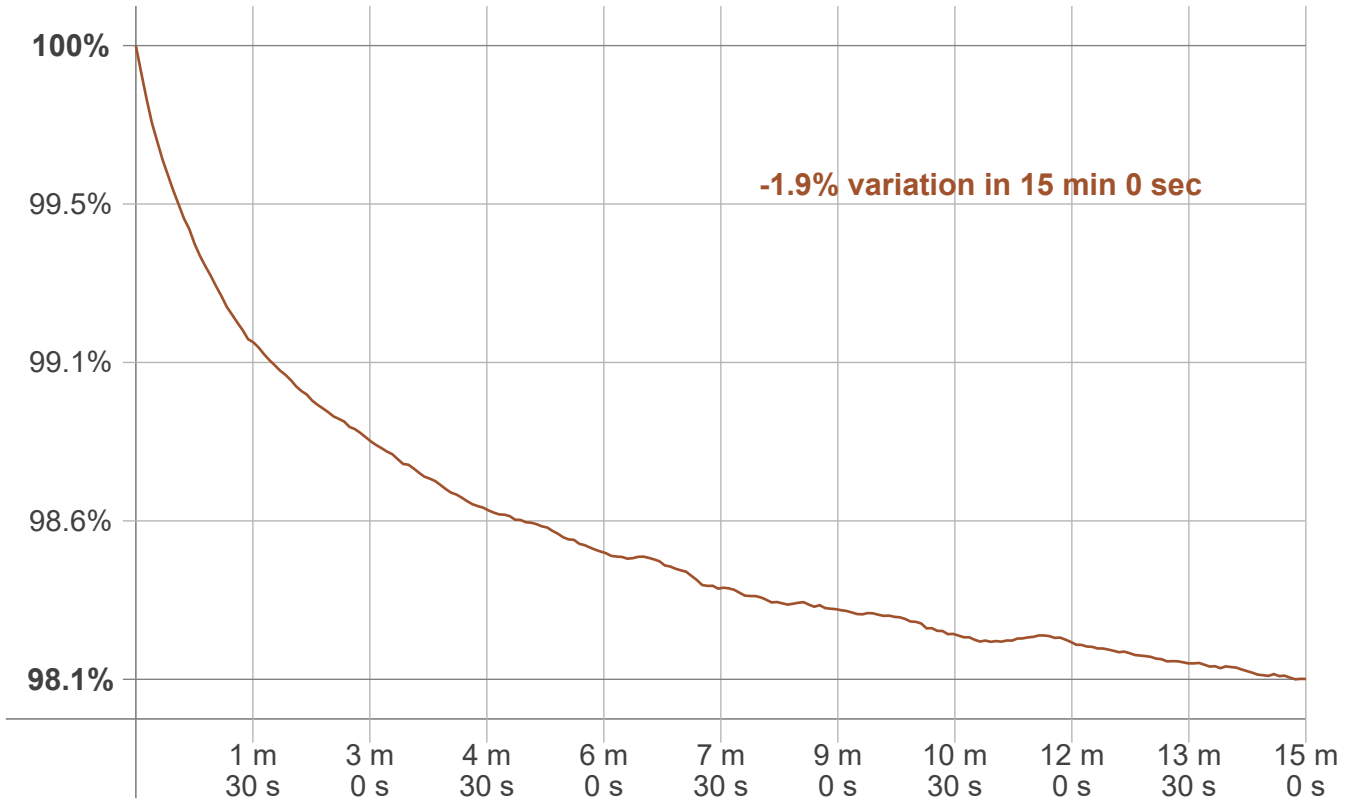
BUG rating:	B2 U2 G1	
Forward light	Lumens	Lumens %
Low(0-30):	840.4	13.3%
Medium(30-60):	1613.4	25.6%
High(60-80):	610.1	9.7%
Very high(80-90):	64.9	1%
Back light		
Low(0-30):	840.4	13.3%
Medium(30-60):	1613.4	25.6%
High(60-80):	610.1	9.7%
Very high(80-90):	64.9	1%
Uplight		
Low(90-100):	10.5	0.2%
High(100-180):	42.3	0.7%

LCS graph



Stabilization

Warmup curve



Warmup result

Warmup time:	Lamp stabilized in 15 min 0 sec
Warmup variation	-1.9%

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
4103 K	+16 K	4119 K

Output change

Output start	Output change	Output end
6418 lm	-107 lm	6310 lm

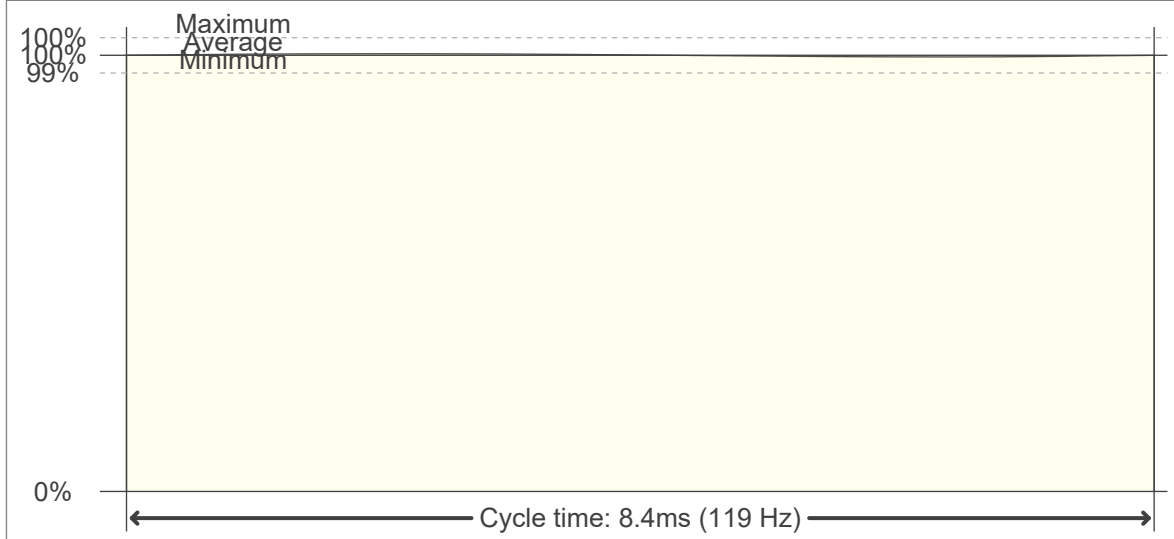


Flicker Specifications

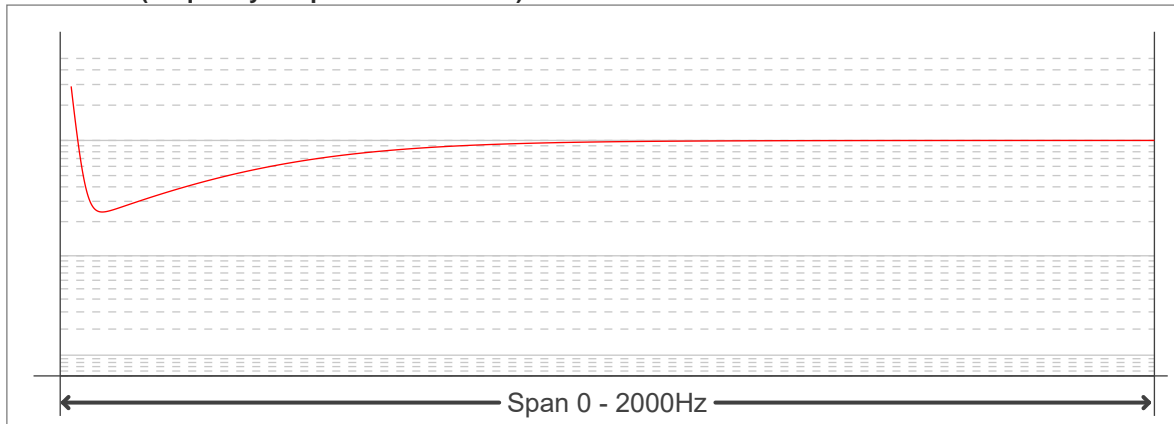
Flicker curve (complete sampled flicker signal)



Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



Flicker results:

Flicker frequency:	119.05 Hz
Flicker index:	0
Flicker percentage:	0.4 %
SVM: (Visual flicker)	0.01

Flicker conditions:

Sample rate:	20000 samples/second
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