

Light efficiency:



Output: 1975 lm

Light quality:



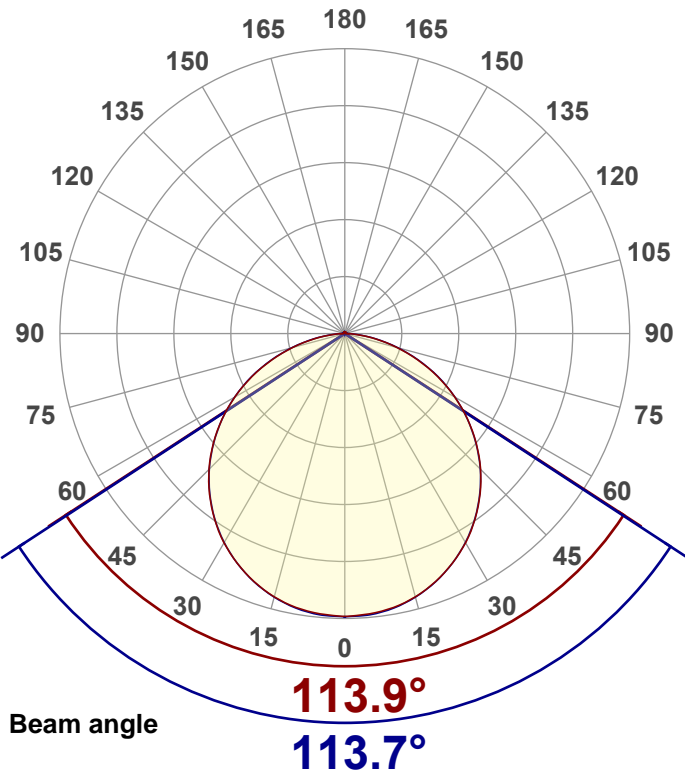
Peak: 675 cd

Color temperature:

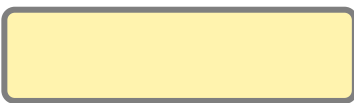


Power: 14.4 W

PF: 0.96

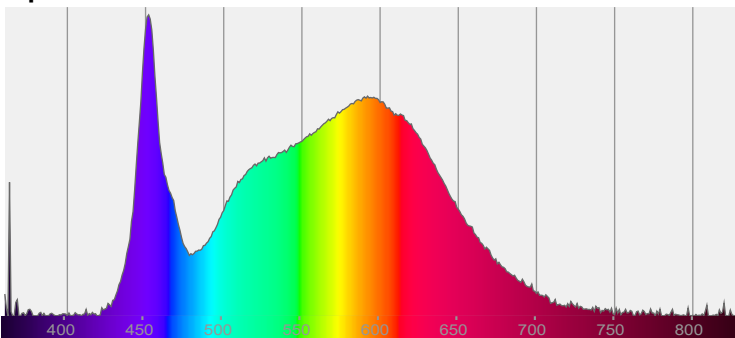


Product name:
LPD-TWR24-50 (25%)
Date and time:
3/8/2024 11:59:37 AM

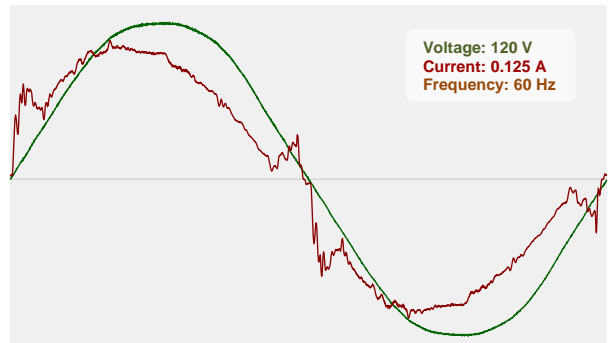


CIE 1931
x: 0.376
y: 0.375

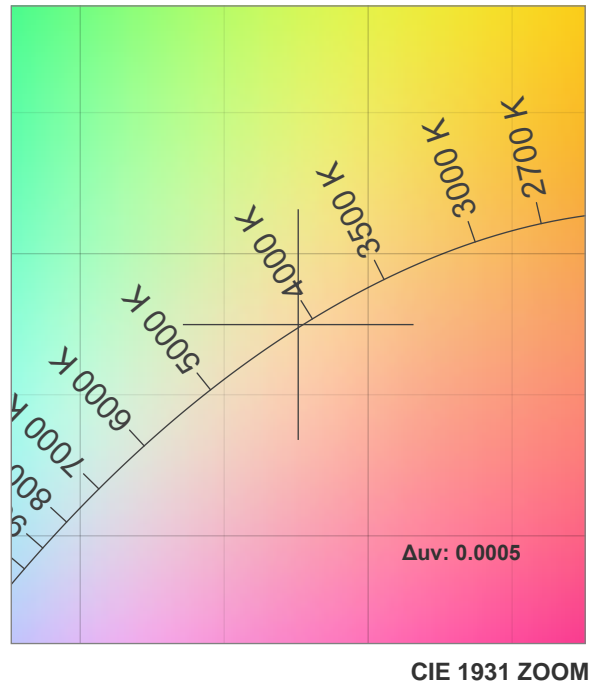
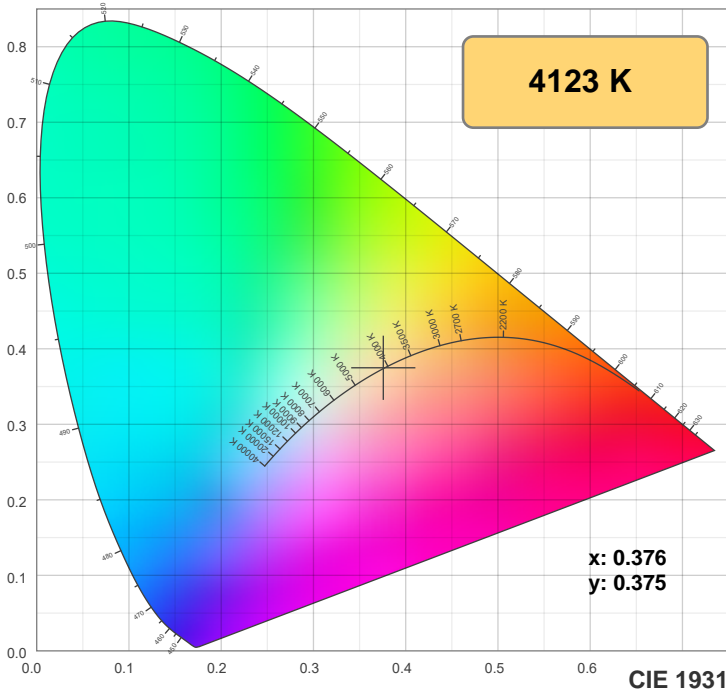
Spectra



Power

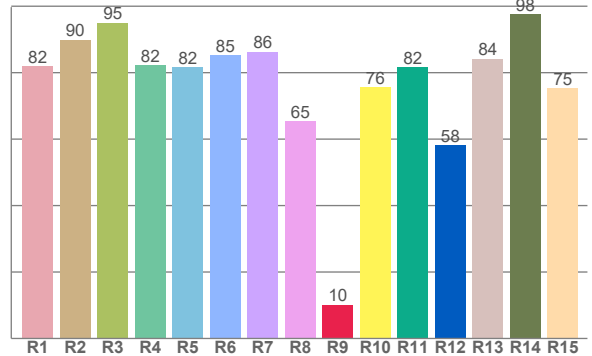
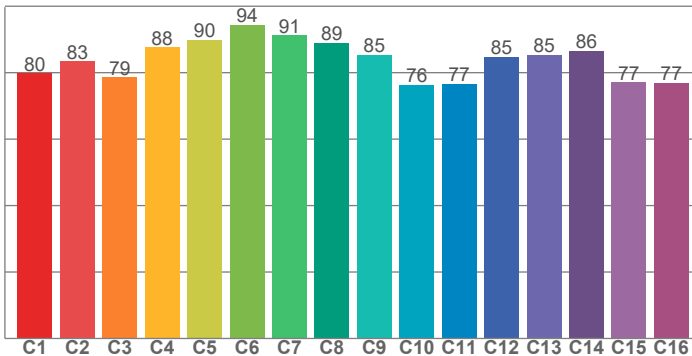


Color Specifications



TM30: 83.6

CRI: 83.5 (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
82.0	89.9	95.1	82.3	81.7	85.3	86.3	65.4	10.2	75.6	81.6	58.2	84.2	97.6	75.2

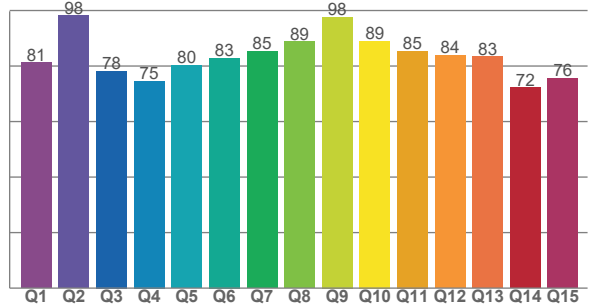
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
79.8	83.4	78.6	87.7	89.9	94.4	91.2	89.0	85.4	76.2	76.6	84.8	85.4	86.5	77.1	76.9

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
81.3	98.1	78.2	74.6	80.3	82.9	85.3	88.7	97.7	89.0	85.4	83.9	83.4	72.2	75.6

CQS: 82.2



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 division from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
4123 K	83.5	10.2	83.6	95.0	82.2	0.376	0.375	0.223	0.333	0.0005

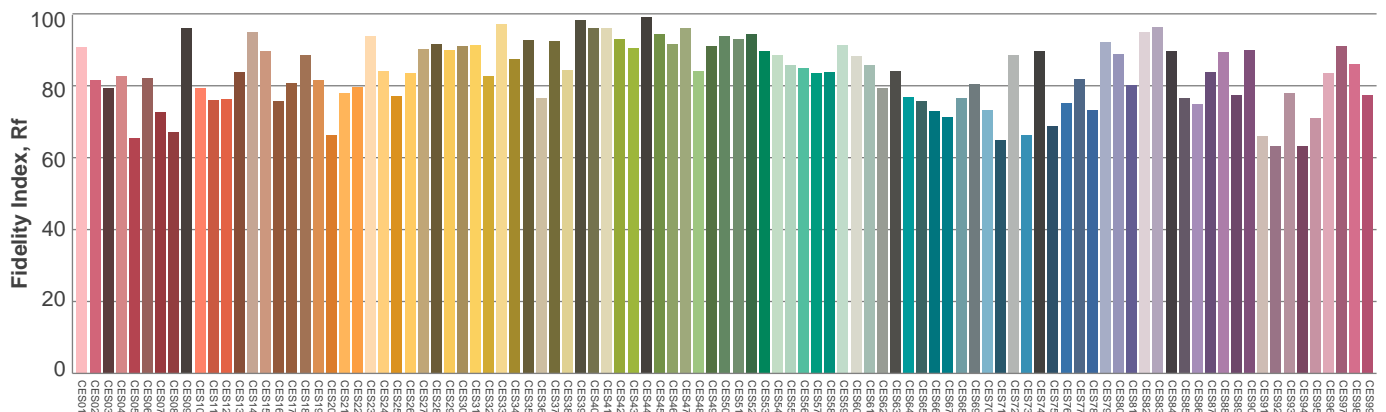
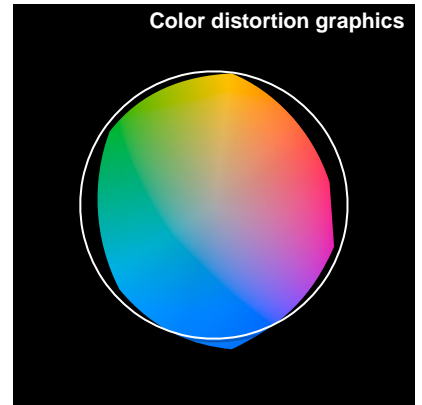
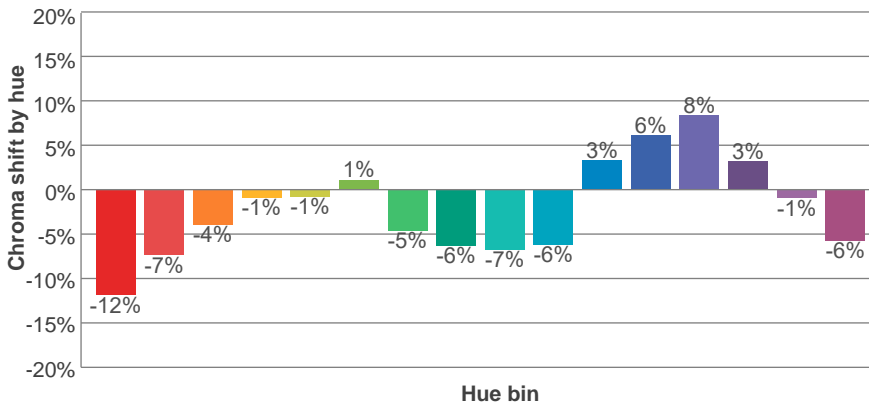
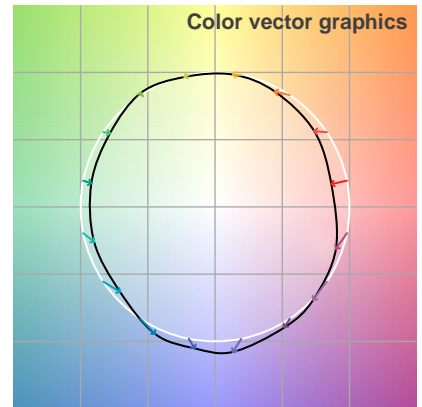
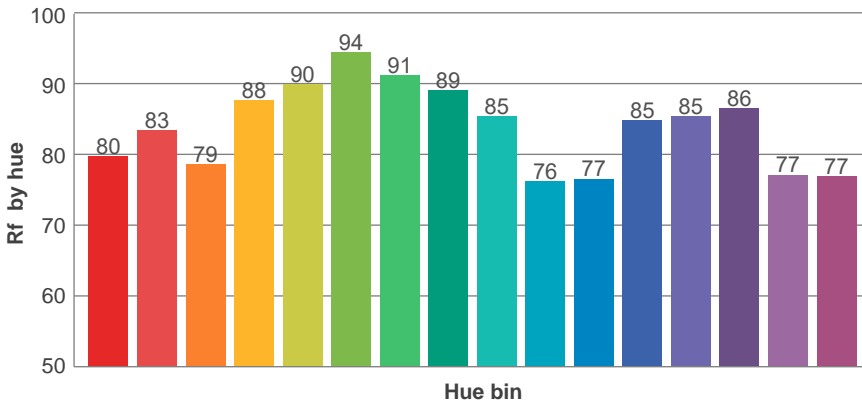
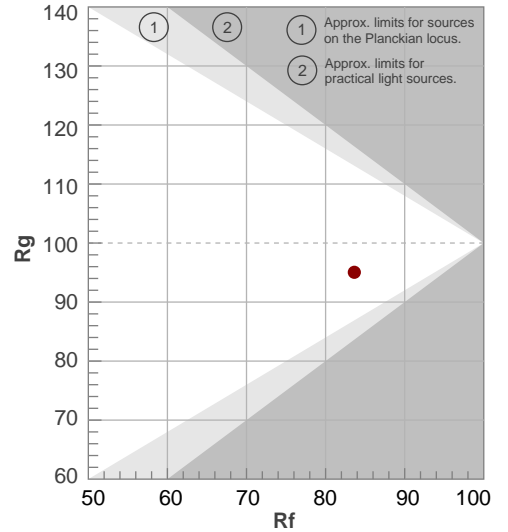


TM30 Report

Rf 83.6
Fidelity index Rf

Rg 95.0
Gammut index Rg

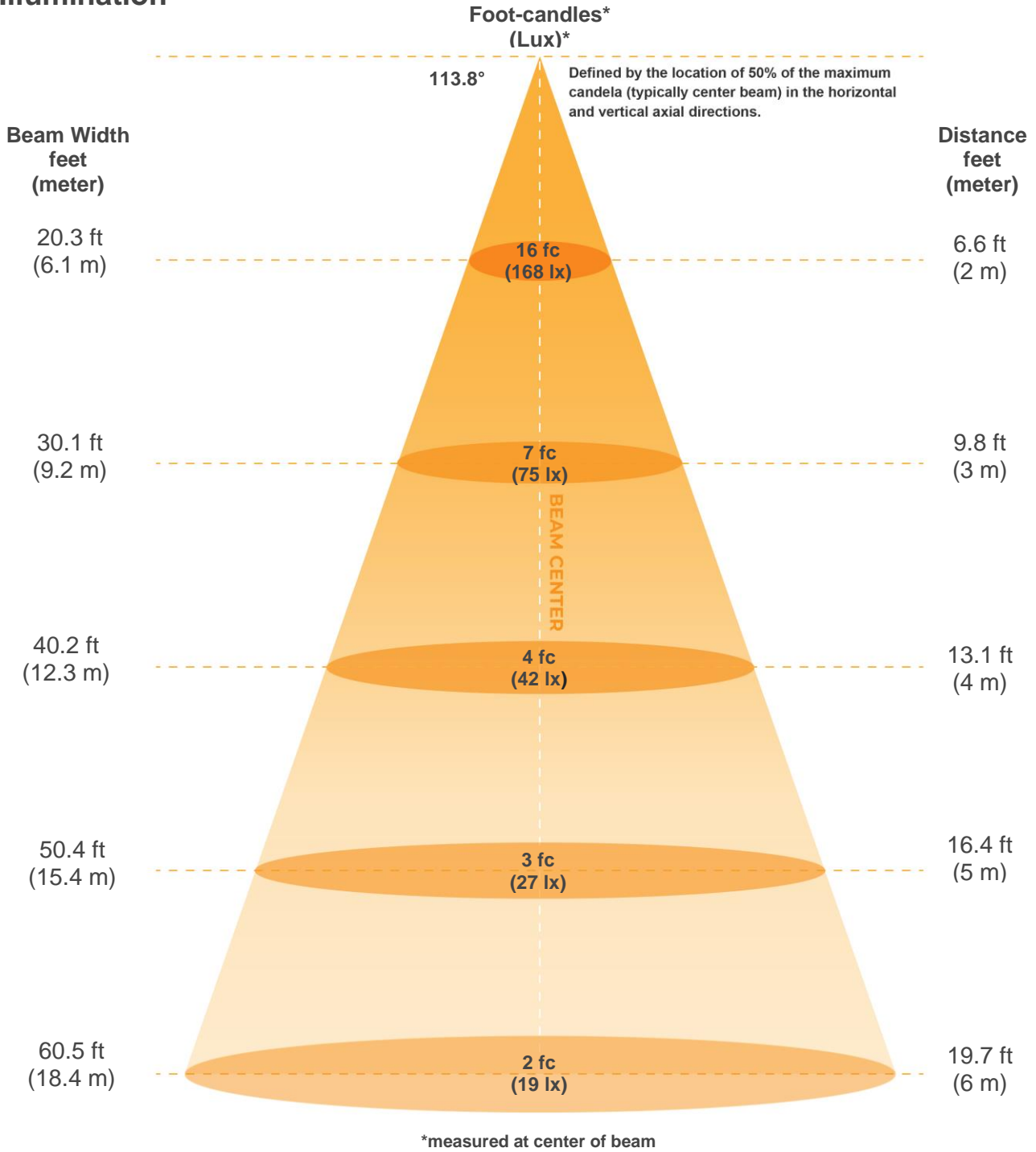
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	80	-12%	0%
2	83	-7%	6%
3	79	-4%	11%
4	88	-1%	6%
5	90	-1%	3%
6	94	1%	-1%
7	91	-5%	-2%
8	89	-6%	1%
9	85	-7%	8%
10	76	-6%	13%
11	77	3%	15%
12	85	6%	6%
13	85	8%	-8%
14	86	3%	-7%
15	77	-1%	-17%
16	77	-6%	-13%



Color Evaluation Sample



Illumination



Beam intensities from 1-20m

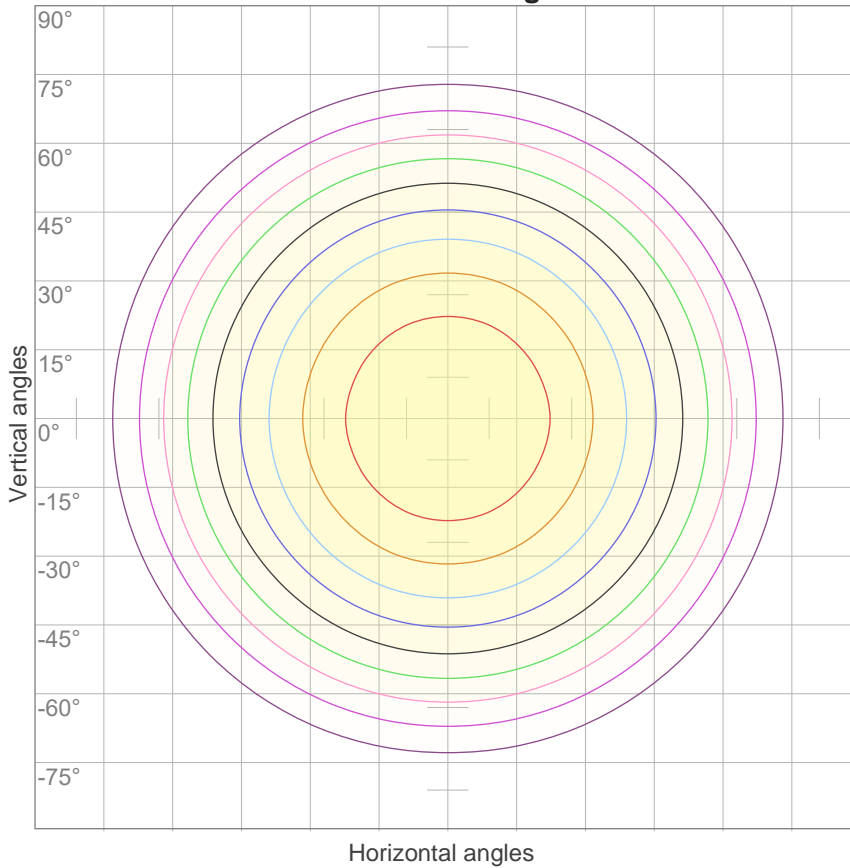
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
3.3ft	6.6ft	9.8ft	13.1ft	16.4ft	19.7ft	23ft	26.2ft	29.5ft	32.8ft	36.1ft	39.4ft	42.7ft	45.9ft	49.2ft	52.5ft	55.8ft	59.1ft	62.3ft	65.6ft
674lx	168lx	75lx	42lx	27lx	19lx	14lx	11lx	8lx	7lx	6lx	5lx	4lx	3lx	3lx	3lx	2lx	2lx	2lx	2lx
62.6fcd	15.6fcd	7fcd	3.9fcd	2.5fcd	1.7fcd	1.3fcd	1fcd	0.8fcd	0.6fcd	0.5fcd	0.4fcd	0.4fcd	0.3fcd	0.3fcd	0.2fcd	0.2fcd	0.2fcd	0.2fcd	0.2fcd

Beam angle X	Beam Angle Y	Field angle X	Field Angle Y	Cutoff angle 2,5%	Intensity ratio in 120°	Intensity ratio in 90°
113.9°	113.7°	161.9°	162.3°	175.1°	77.8%	52.8%



ISO Diagrams

ISO candela diagram



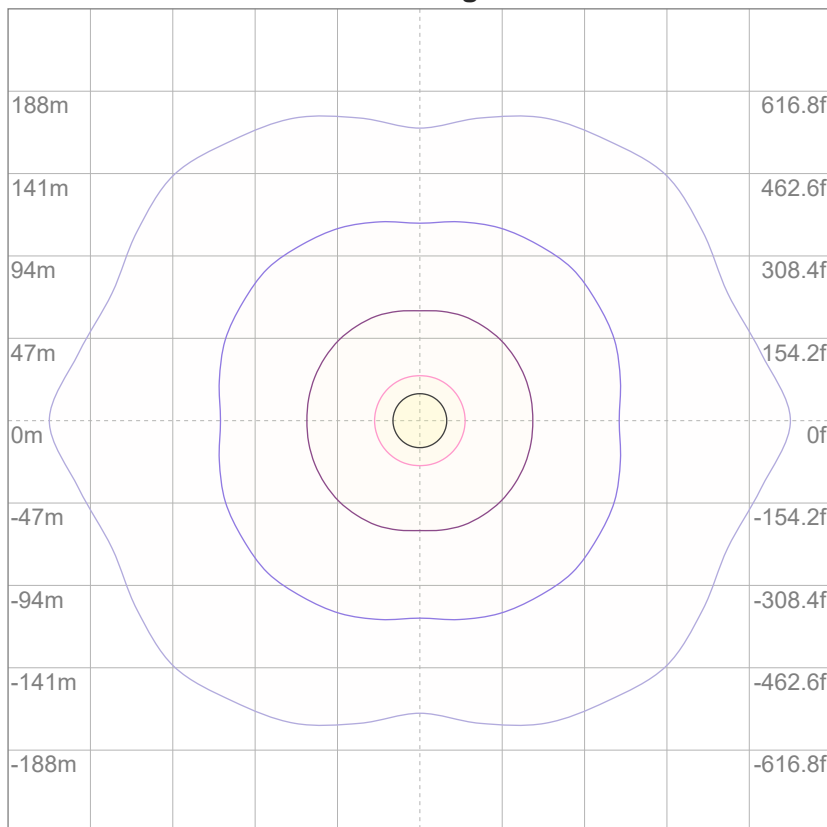
10%	67 cd
20%	135 cd
30%	202 cd
40%	269 cd
50%	337 cd
60%	404 cd
70%	472 cd
80%	539 cd
90%	606 cd

Conditions:

Number of c-planes: 16

Candela at center: 674 cd

ISO lux diagram



Mounting height: 10 meters (33 feet)

3%	0.202 lx
5%	0.337 lx
10%	0.674 lx
30%	2.02 lx
50%	3.37 lx

Conditions:

Number of c-planes: 16

Lux at center: 6.74 lx

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



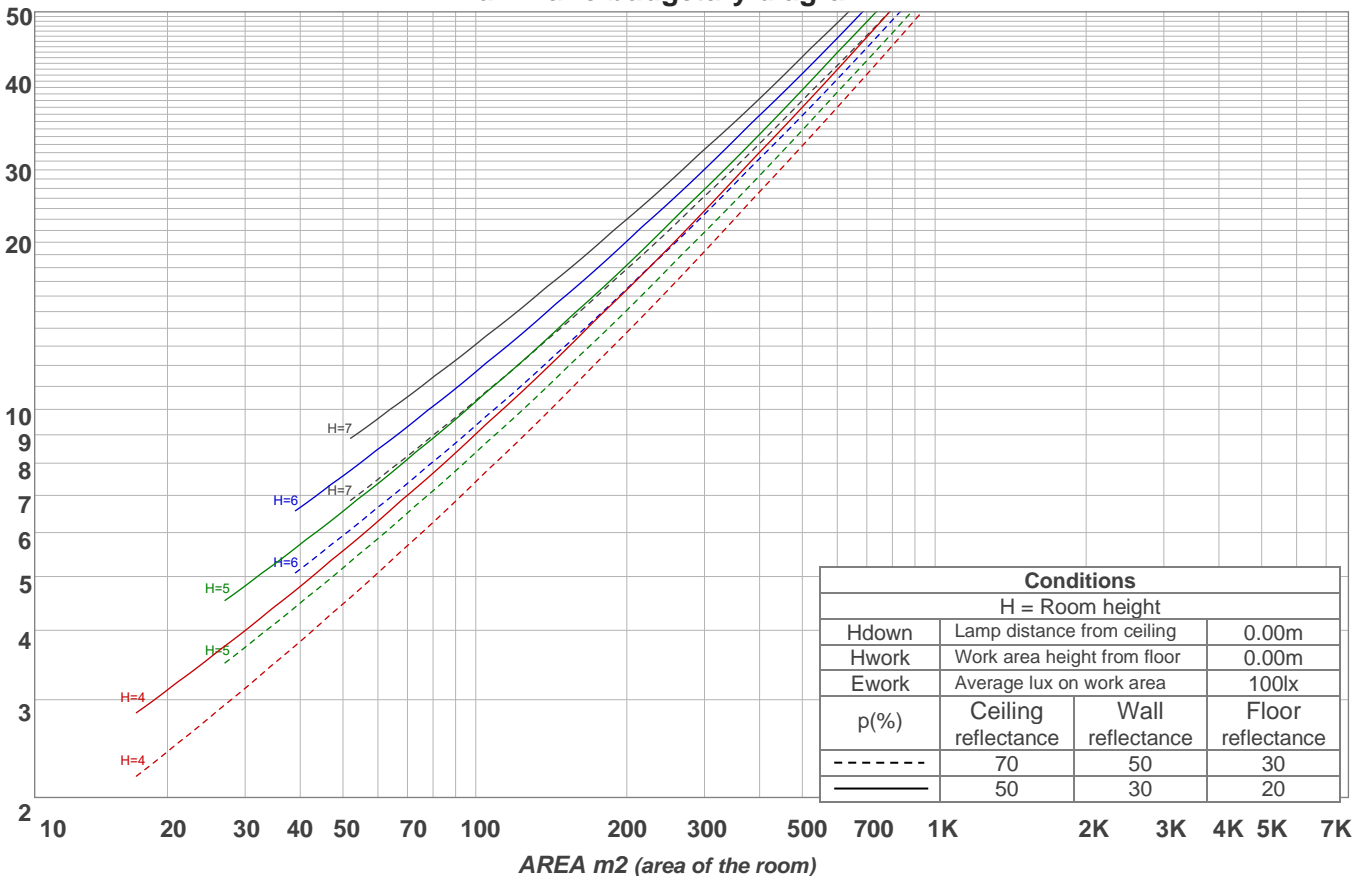
Light Planning

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	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	75	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°
63.9 lm	183 lm	279 lm	338 lm	353 lm	320 lm	244 lm	139 lm	39.1 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
2.78 lm	2.45 lm	2.49 lm	2.40 lm	2.20 lm	1.80 lm	1.41 lm	0.909 lm	0.304 lm

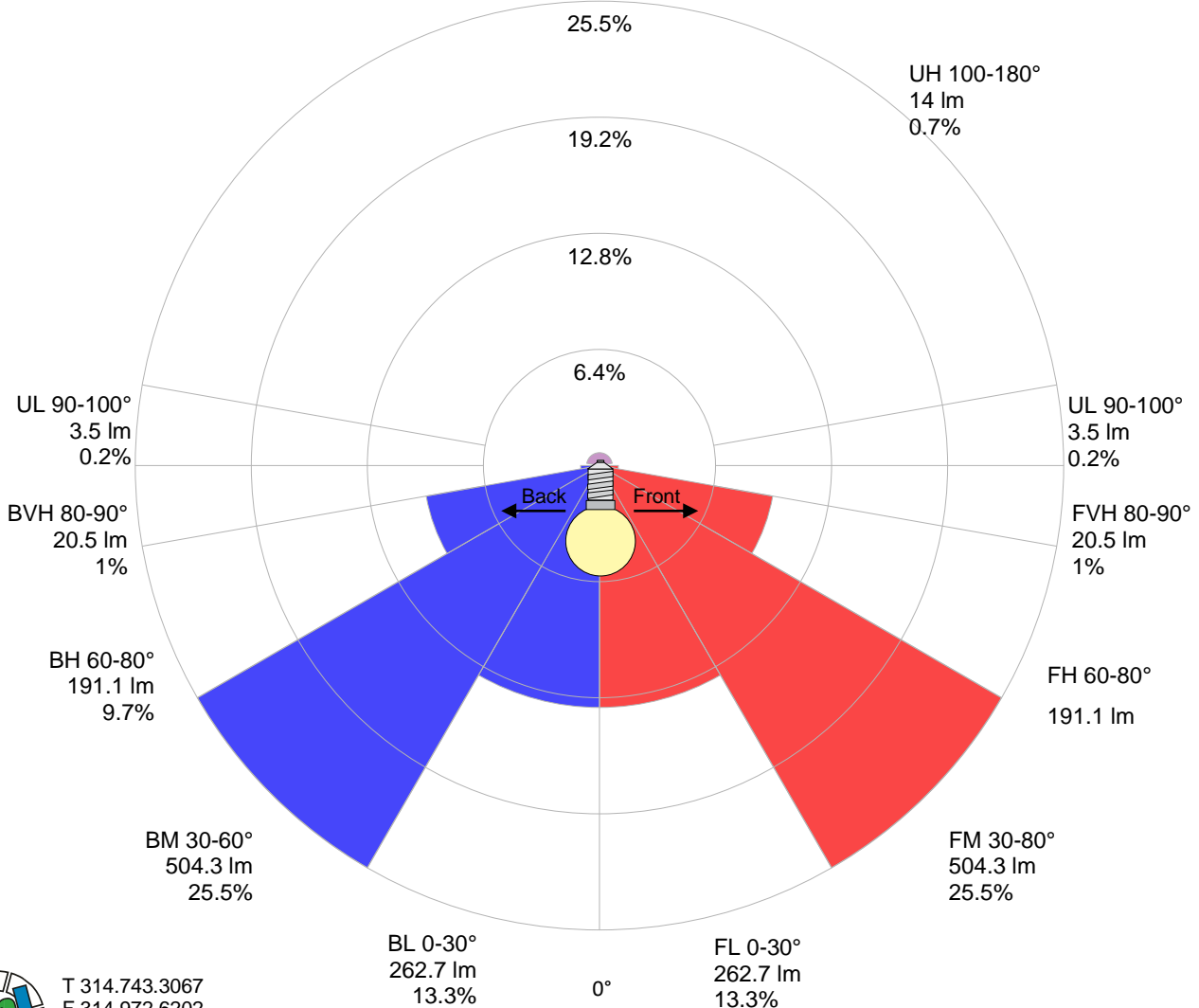


Road Report

LCS table

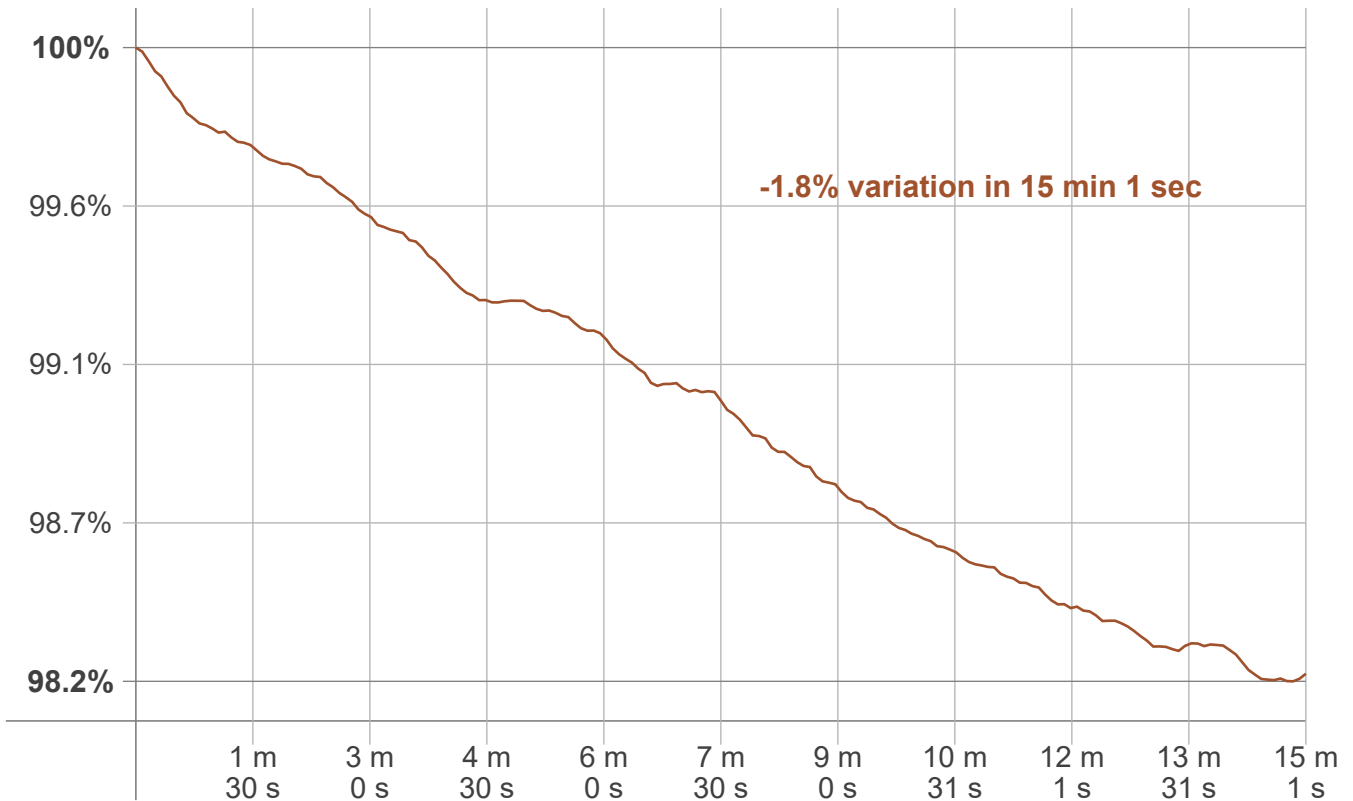
BUG rating:	B1 U2 G1	
Forward light	Lumens	Lumens %
Low(0-30):	262.7	13.3%
Medium(30-60):	504.3	25.5%
High(60-80):	191.1	9.7%
Very high(80-90):	20.5	1%
Back light		
Low(0-30):	262.7	13.3%
Medium(30-60):	504.3	25.5%
High(60-80):	191.1	9.7%
Very high(80-90):	20.5	1%
Uplight		
Low(90-100):	3.5	0.2%
High(100-180):	14	0.7%

LCS graph



Stabilization

Warmup curve



Warmup result

Warmup time:	Lamp stabilized in 15 min 1 sec
Warmup variation	-1.8%

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
4120 K	+3 K	4123 K

Output change

Output start	Output change	Output end
2008 lm	-34 lm	1975 lm

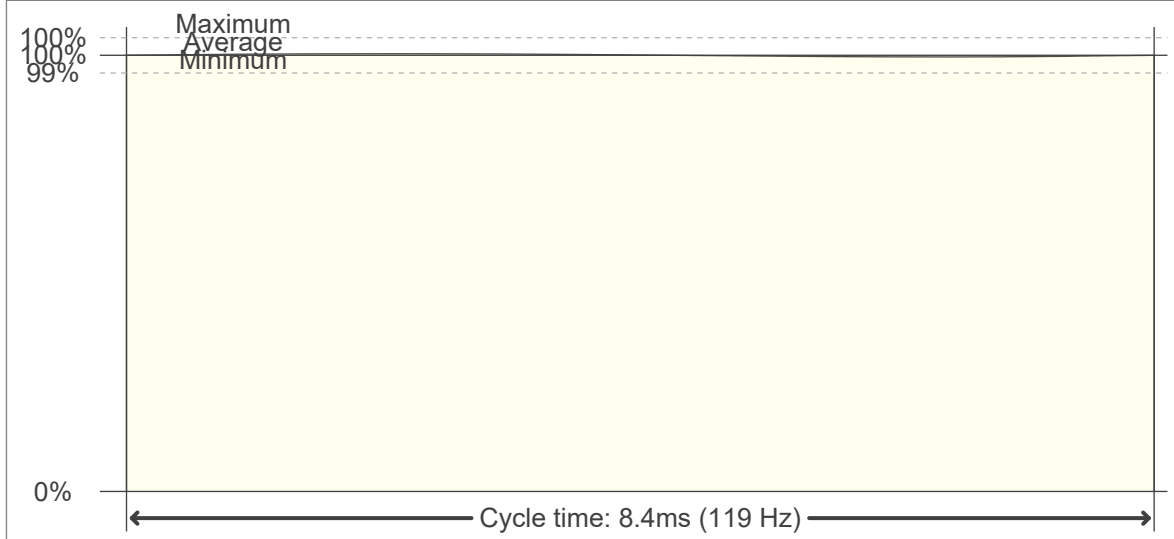


Flicker Specifications

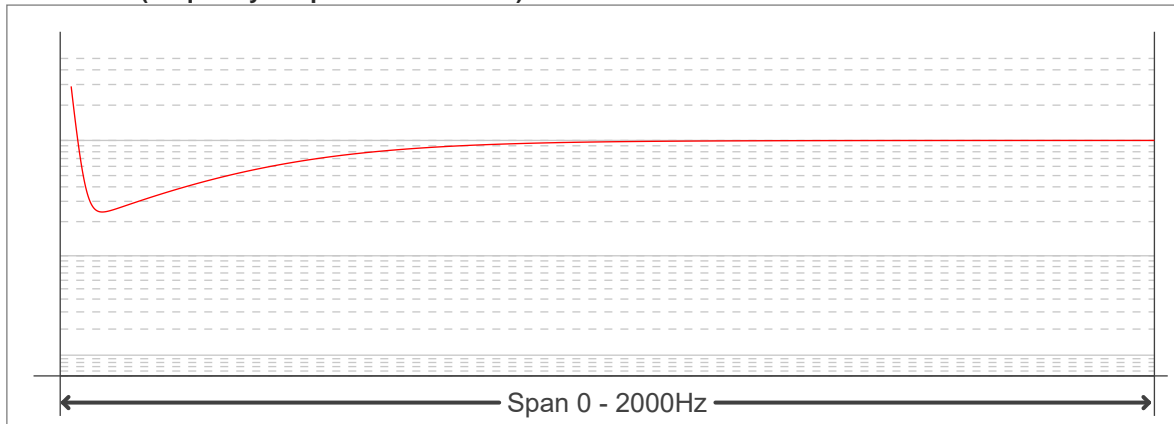
Flicker curve (complete sampled flicker signal)



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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