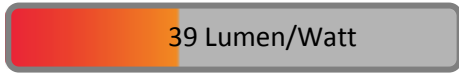


PHOTOMETRIC TEST REPORT

FUSE LED USB BRONZE

astro

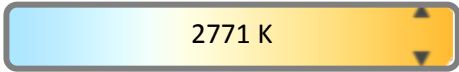
LIGHT EFFICIENCY:



LIGHT QUALITY:



COLOR TEMPERATURE:



OUTPUT: 140 lm
PEAK: 716 cd
POWER: 3.6 W
PF: 0.51



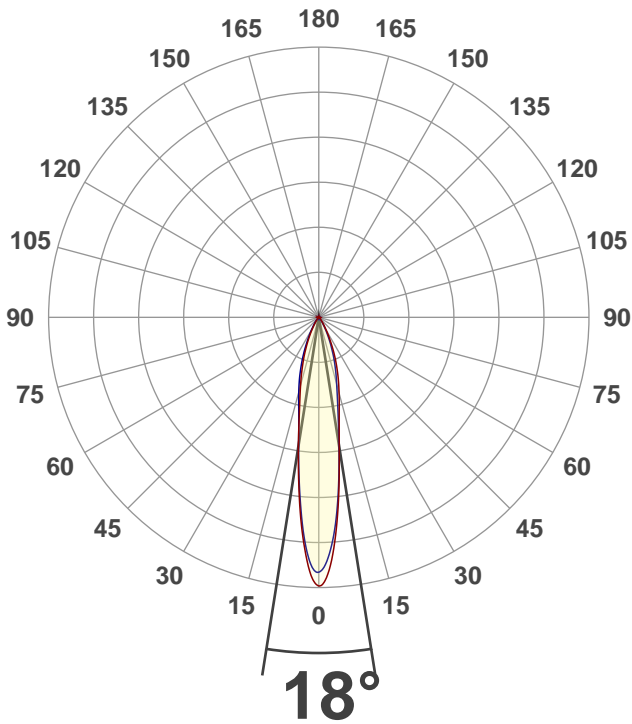
Tracking number: [n/a](#)

Product name:
Fuse LED USB Bronze

Item number:
1215085

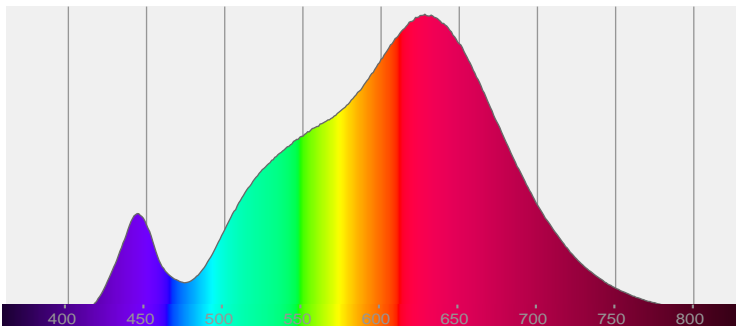
Date and time:
14/02/2020 12:24:26

Description:
IP20 LED Reading Light with USB

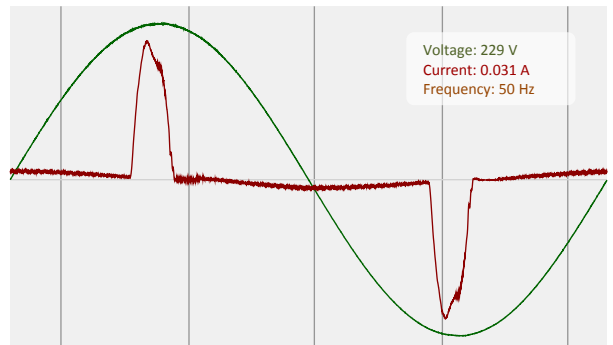


CIE 1931
x: 0.455
y: 0.411

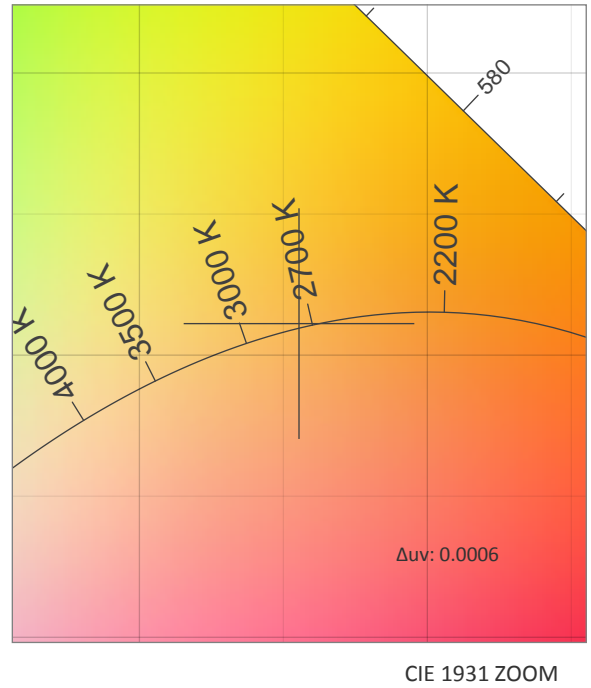
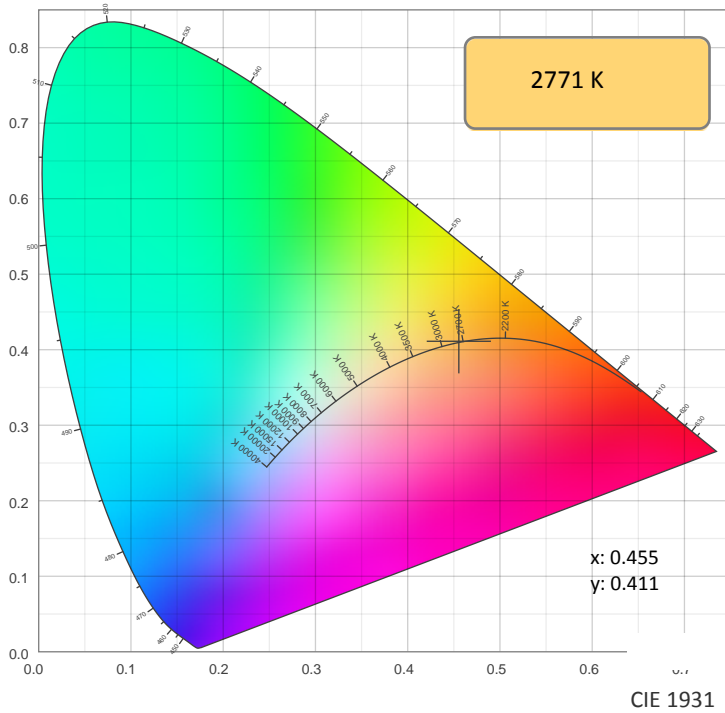
SPECTRA



POWER

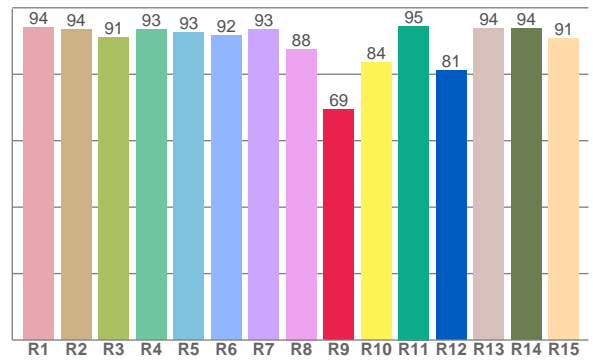
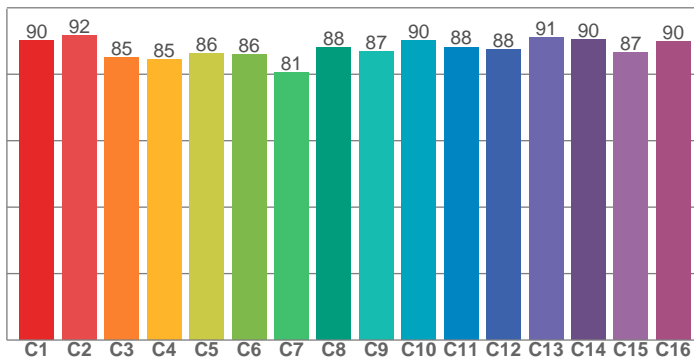


COLOR DETAILS



TM30: 87.9

CRI: 92.2 (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
94.1	93.5	91.0	93.4	92.6	91.8	93.5	87.6	69.5	83.6	94.5	81.1	93.7	93.9	90.8

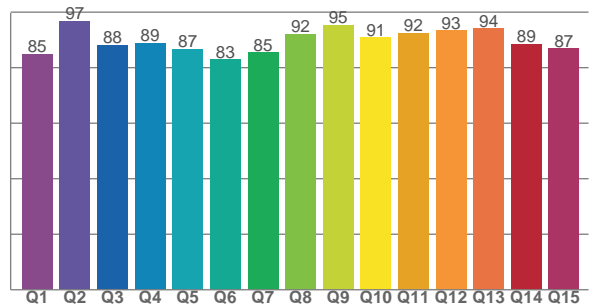
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
90.0	91.6	85.0	84.5	86.3	85.9	80.5	88.0	86.8	90.3	88.2	87.5	91.1	90.4	86.6	89.9

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
84.8	96.8	88.1	88.8	86.8	82.9	85.5	92.1	95.3	90.9	92.5	93.4	94.0	88.6	86.9

CQS: 88.9



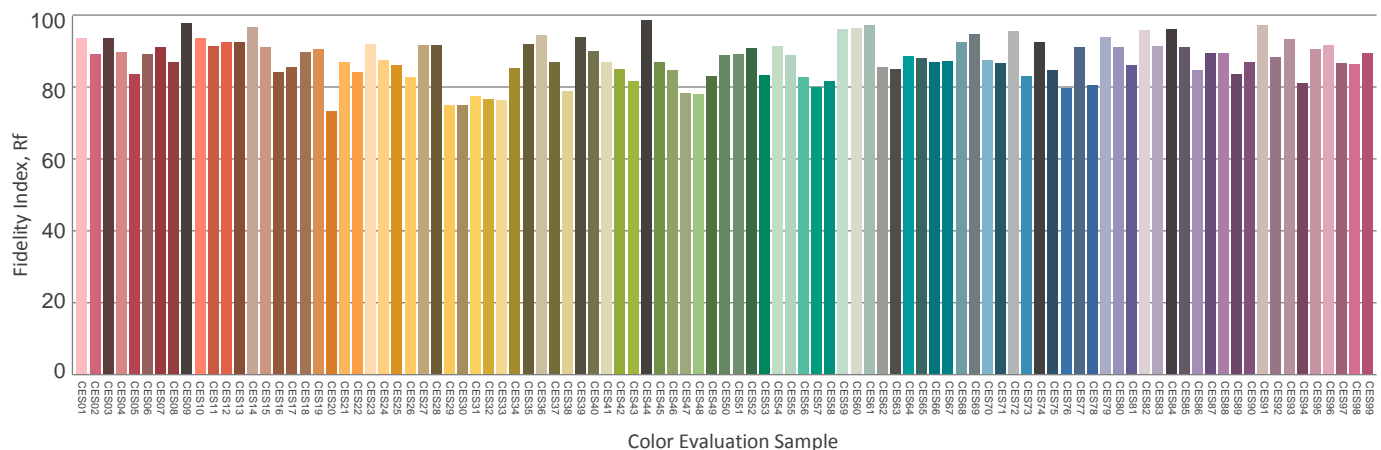
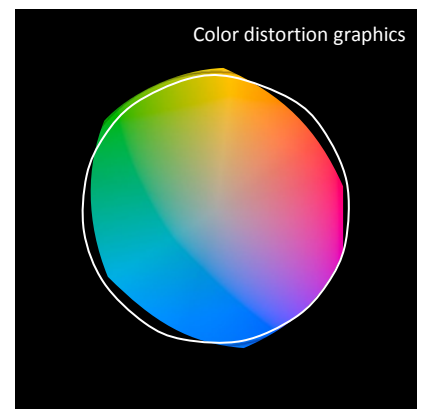
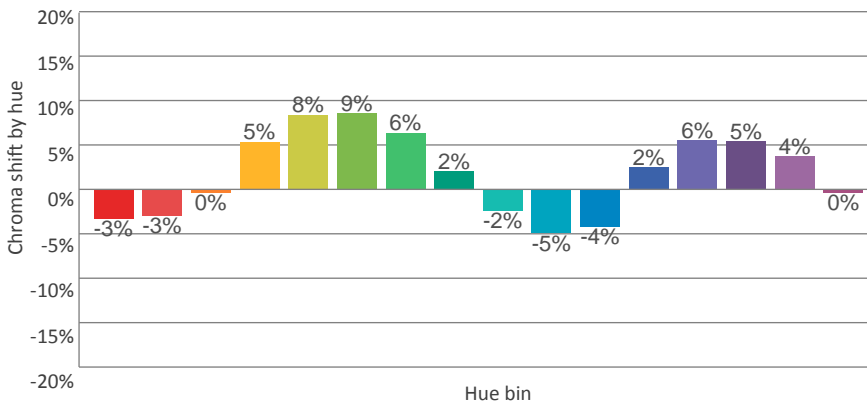
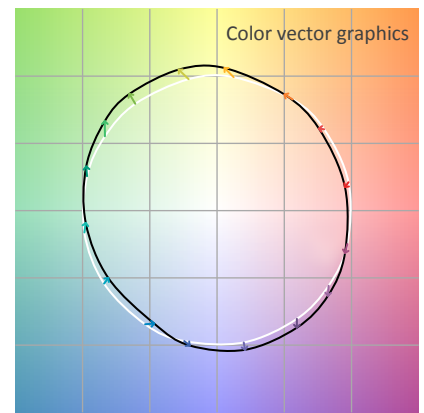
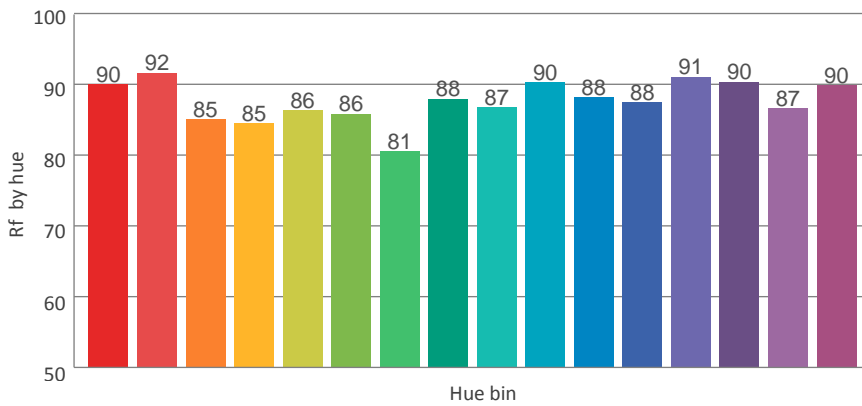
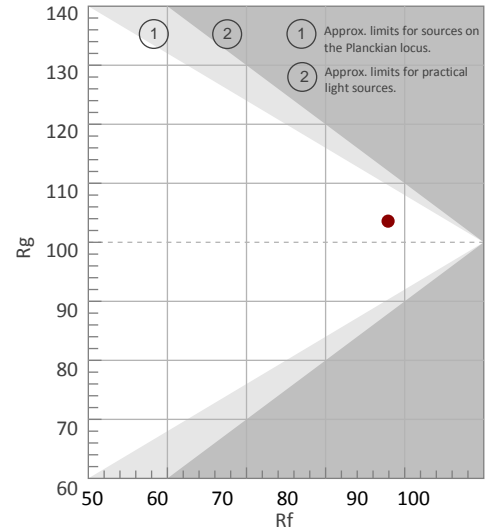
COLOR PARAMETERS

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
2771 K	92.2	69.5	87.9	103.6	88.9	0.455	0.411	0.259	0.351	0.0006

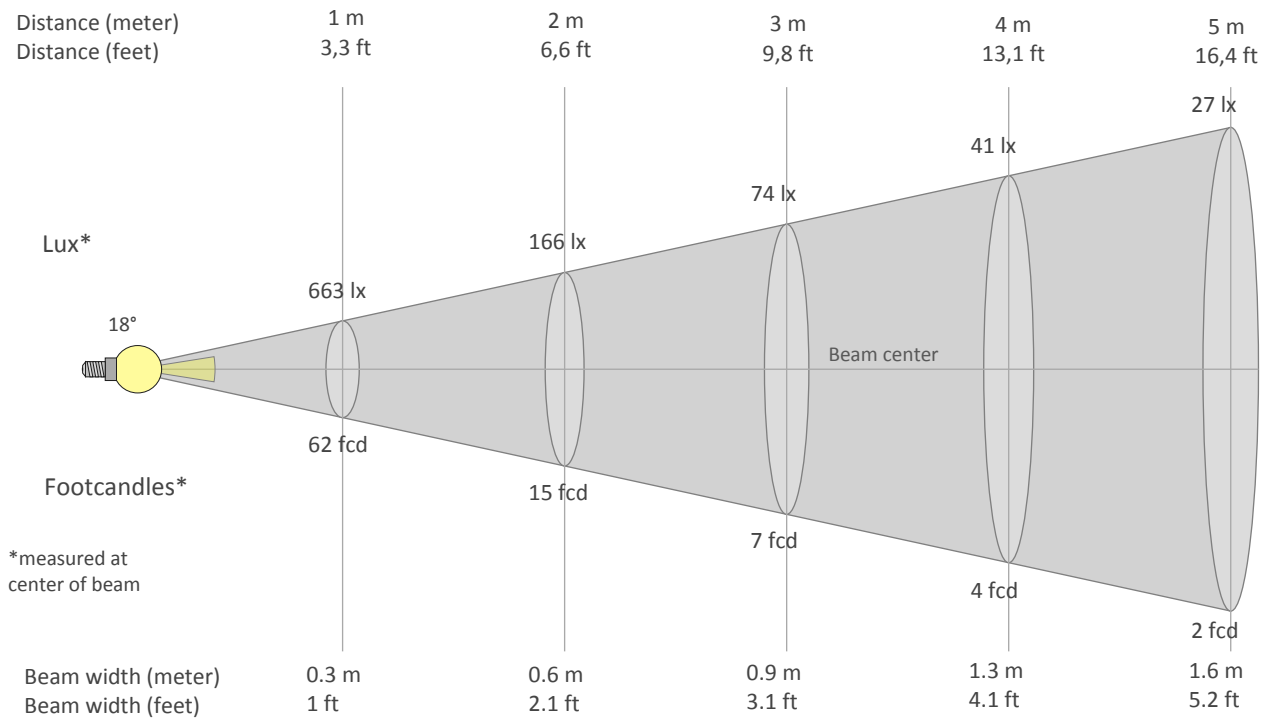
Rf 87.9
Fidelity index Rf

Rg 103.6
Gammut index Rg

		Graphic shifts (%)	
Hue Bin	Rf	Chroma	Hue
1	90	-3%	-3%
2	92	-3%	3%
3	85	0%	7%
4	85	5%	8%
5	86	8%	6%
6	86	9%	0%
7	81	6%	-9%
8	88	2%	-7%
9	87	-2%	-7%
10	90	-5%	-2%
11	88	-4%	5%
12	88	2%	5%
13	91	6%	0%
14	90	5%	-4%
15	87	4%	-6%
16	90	0%	-7%



BEAM DETAILS



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
663lx	166lx	74lx	41lx	27lx	18lx	14lx	10lx	8lx	7lx	5lx	5lx	4lx	3lx	3lx	3lx	2lx	2lx	2lx	2lx
61.6fcd	15.4fcd	6.8fcd	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

Intensities in 0° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
663	650	572	472	372	297	249	214	184	158	133	109	87	67	51	38	28	21	16	12
100%	98%	86%	71%	56%	45%	37%	32%	28%	24%	20%	16%	13%	10%	8%	6%	4%	3%	2%	2%

Intensities in 90° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
663	613	548	461	368	289	231	191	161	136	113	90	71	54	41	29	21	15	11	8
100%	92%	83%	70%	55%	44%	35%	29%	24%	20%	17%	14%	11%	8%	6%	4%	3%	2%	2%	1%

Intensities in 180° c-plane

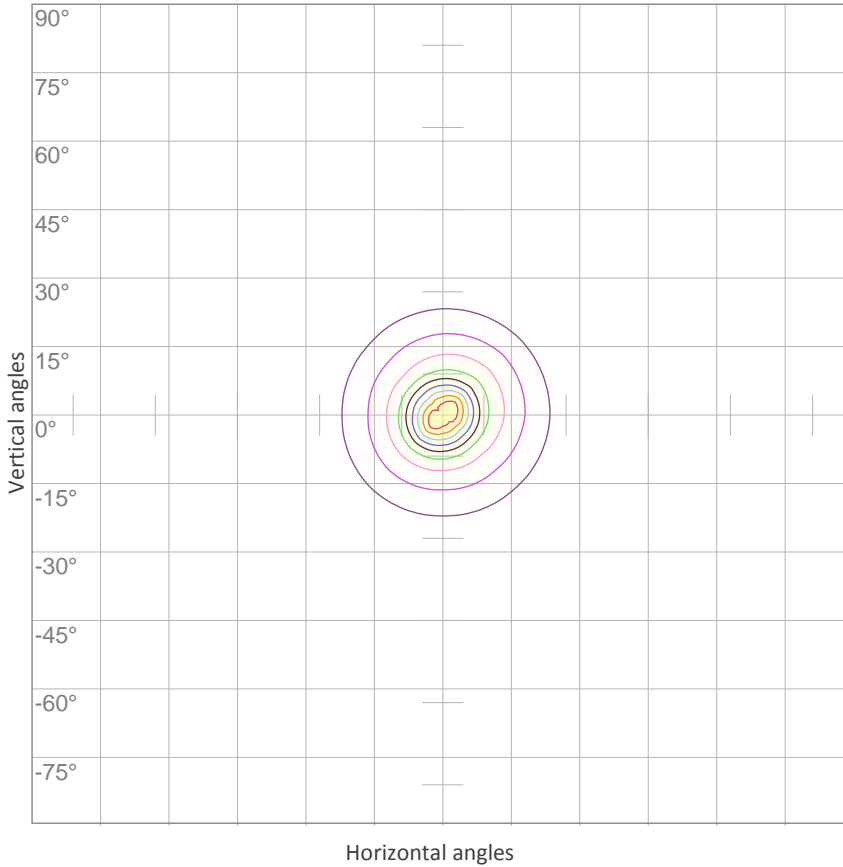
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
663	644	563	466	371	292	234	194	163	136	112	90	71	54	41	29	21	15	11	8
100%	97%	85%	70%	56%	44%	35%	29%	25%	20%	17%	14%	11%	8%	6%	4%	3%	2%	2%	1%

Intensities in 270° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
663	620	548	454	365	292	243	210	182	155	130	106	85	65	50	37	28	21	16	12
100%	93%	83%	69%	55%	44%	37%	32%	27%	23%	20%	16%	13%	10%	8%	6%	4%	3%	2%	2%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
18°	50.6°	68.5°	99.5%	98.9%

ISO CANDELA DIAGRAM

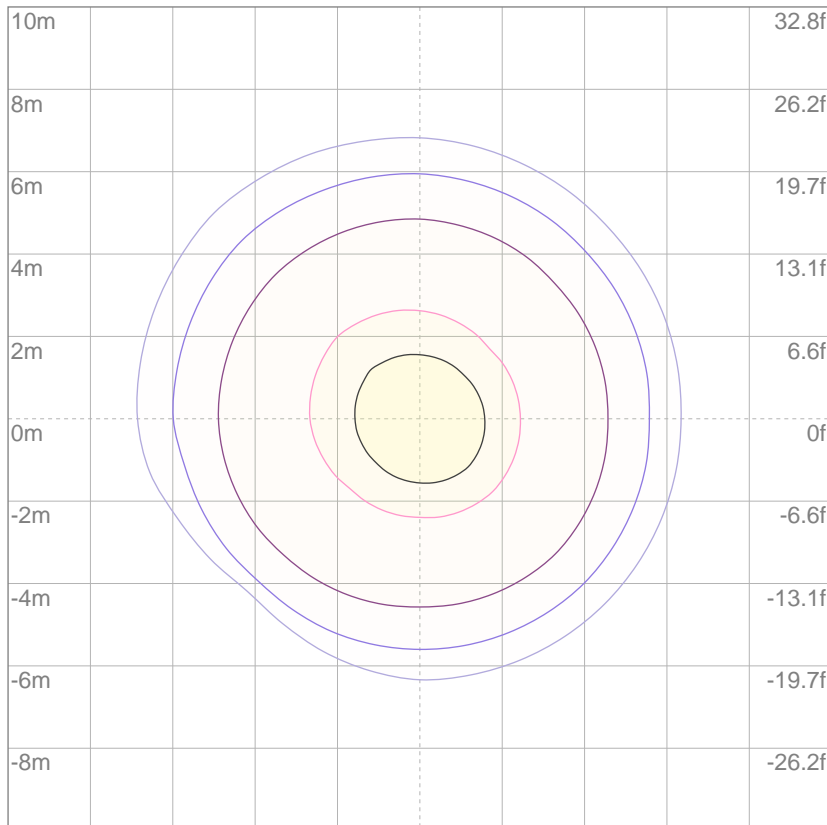


10%	66 cd
20%	133 cd
30%	199 cd
40%	265 cd
50%	332 cd
60%	398 cd
70%	464 cd
80%	531 cd
90%	597 cd

Conditions:

Number of c-planes: 8
Candela at center: 663 cd

ISO LUX DIAGRAM



3%	0.199 lx
5%	0.332 lx
10%	0.663 lx
30%	1.99 lx
50%	{LUX_10M50} lx

Conditions:

Number of c-planes: 8
Lux at center: 6.63 lx

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

UGR

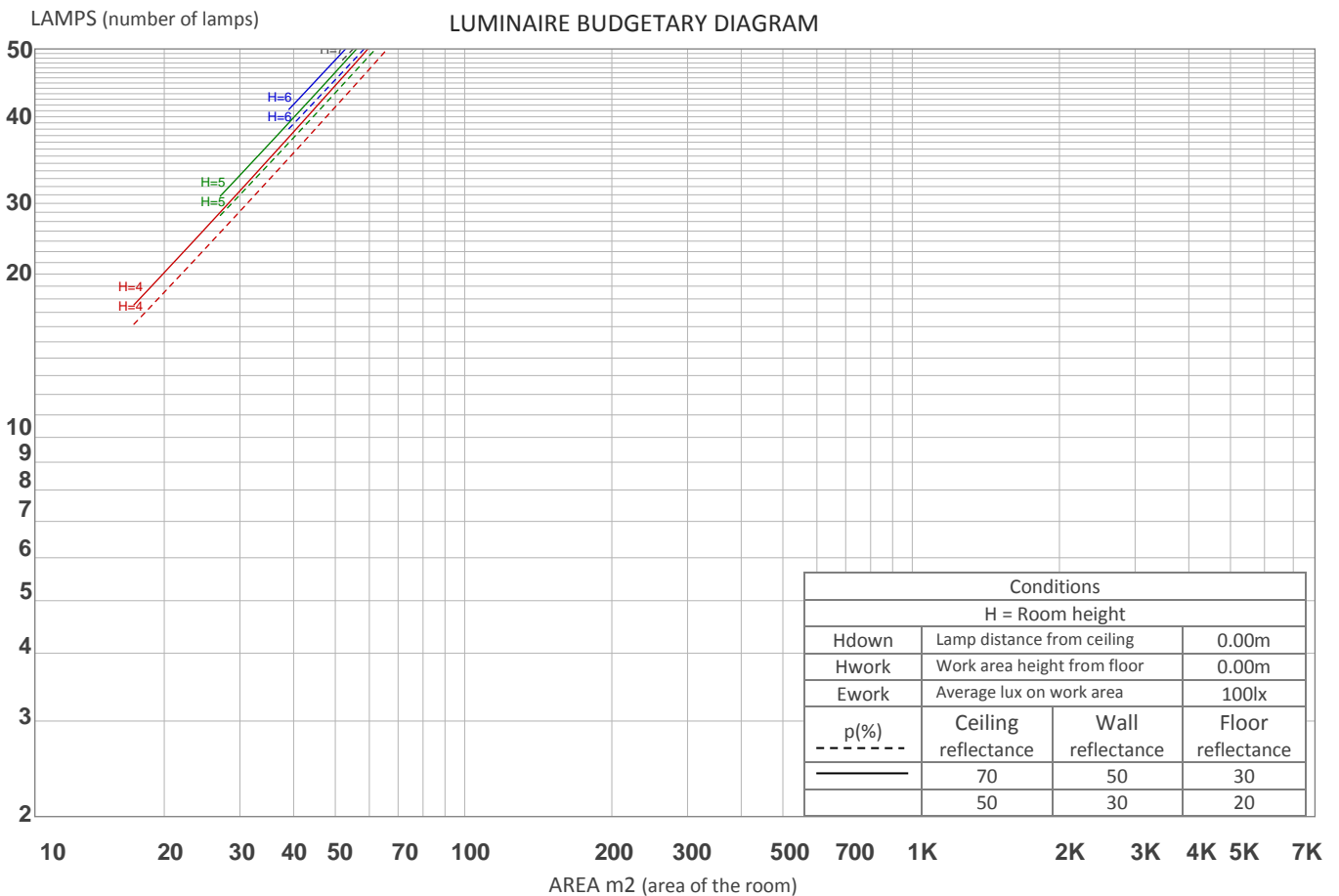
GLARE EVALUATION ACCORDING TO UGR

p Ceiling	70	70	50	50	30	70	70	50	50	30	
p Walls	50	30	50	30	30	50	30	50	30	30	
p Floor	20	20	20	20	20	20	20	20	20	20	
Room size X Y	Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis					
2H 2H	2H	13.2	13.8	13.4	14.0	14.2	11.0	11.7	11.3	11.9	12.1
	3H	13.0	13.6	13.3	13.8	14.1	10.9	11.5	11.2	11.7	12.0
	4H	12.9	13.5	13.2	13.8	14.0	10.8	11.4	11.1	11.6	11.9
	6H	12.9	13.4	13.2	13.7	14.0	10.8	11.3	11.1	11.5	11.8
	8H	12.8	13.3	13.2	13.6	13.9	10.7	11.2	11.1	11.5	11.8
	12H	12.8	13.3	13.2	13.6	13.9	10.7	11.1	11.0	11.5	11.8
4H 2H	2H	12.9	13.5	13.3	13.8	14.0	10.8	11.4	11.1	11.6	11.9
	3H	12.8	13.3	13.1	13.6	13.9	10.7	11.1	11.0	11.4	11.8
	4H	12.7	13.1	13.1	13.5	13.8	10.6	11.0	11.0	11.3	11.7
	6H	12.7	13.0	13.1	13.3	13.7	10.5	10.9	10.9	11.2	11.6
	8H	12.6	12.9	13.0	13.3	13.7	10.5	10.8	10.9	11.2	11.6
	12H	12.6	12.8	13.0	13.2	13.7	10.5	10.7	10.9	11.1	11.6
8H 4H	4H	12.6	12.9	13.0	13.3	13.7	10.5	10.8	10.9	11.2	11.6
	6H	12.5	12.7	13.0	13.2	13.6	10.4	10.6	10.9	11.1	11.5
	8H	12.5	12.7	13.0	13.1	13.6	10.4	10.6	10.9	11.0	11.5
	12H	12.4	12.6	12.9	13.0	13.5	10.3	10.5	10.8	11.0	11.5
12H 4H	4H	12.6	12.8	13.0	13.2	13.7	10.5	10.7	10.9	11.1	11.5
	6H	12.5	12.7	13.0	13.1	13.6	10.4	10.6	10.8	11.0	11.5
	8H	12.4	12.6	12.9	13.0	13.5	10.3	10.5	10.8	10.9	11.4
Variation of the observer position for the luminaire distance S											
S = 1.0H	+5.2 / -15.2					+5.2 / -11.8					
S = 1.5H	+7.9 / -17.6					+8.0 / -13.4					
S = 2.0H	+9.9 / -19.4					+10.0 / -14.5					
Standard table	BK00					BK00					
Correction summand	-5.5					-7.6					
Corrected glare indices referring to 140 lm total luminous flux											

UGR data could be incorrect as lamp output is not symmetrical. Goto Edit->Photometric->Corrections and select Correct asymmetry.

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	115	112	110	108	112	110	108	107	106	105	103	102	101	100	99	98	97	96
2	110	106	103	101	108	105	102	99	102	99	97	99	97	95	96	94	93	92
3	106	101	97	94	105	100	96	94	97	95	92	95	93	91	93	91	89	88
4	103	97	92	89	101	96	92	89	94	90	88	92	89	87	90	88	86	84
5	99	93	88	85	98	92	88	84	90	86	84	89	85	83	87	84	82	81
6	96	89	84	81	94	88	84	81	87	83	80	85	82	80	84	81	79	78
7	93	86	81	78	91	85	81	78	84	80	77	83	79	77	82	79	76	75
8	90	82	78	75	89	82	78	75	81	77	74	80	76	74	79	76	74	73
9	87	80	75	72	86	79	75	72	78	74	72	77	74	71	77	74	71	70
10	84	77	72	70	83	76	72	69	76	72	69	75	72	69	74	71	69	68

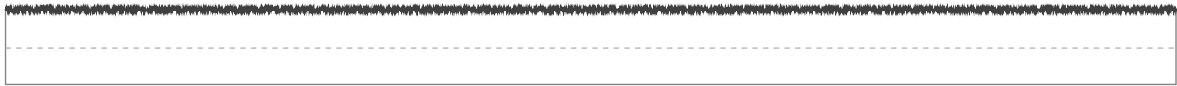


ZONAL LUMEN SUMMARY

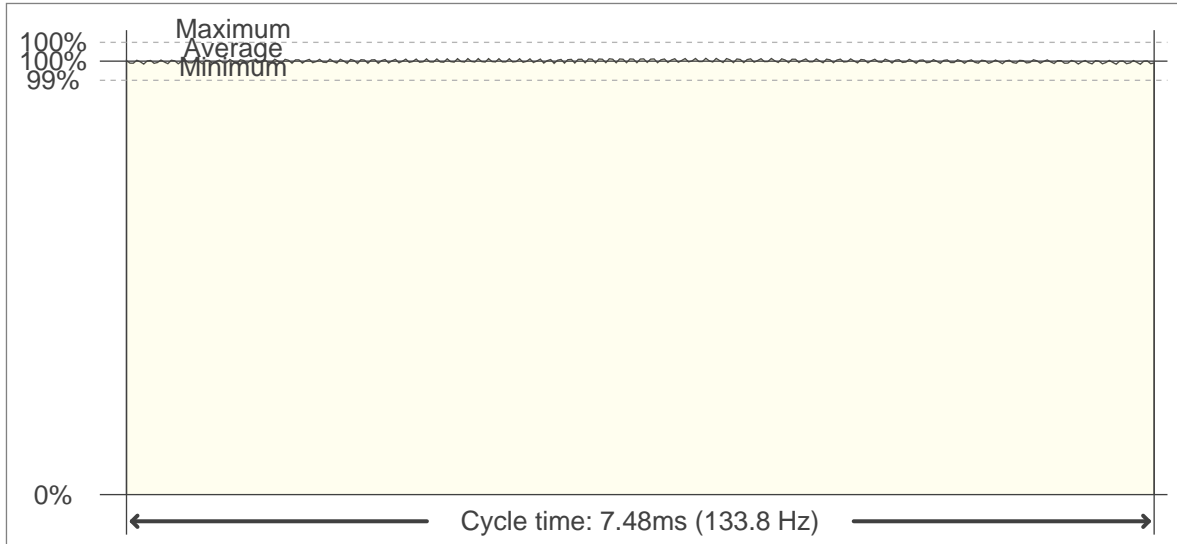
0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
41.7 lm	52.3 lm	32.1 lm	10.2 lm	2.31 lm	0.311 lm	0.077 lm	0.036 lm	0.030 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.033 lm	0.034 lm	0.040 lm	0.045 lm	0.065 lm	0.097 lm	0.103 lm	0.072 lm	0.018 lm

FLICKER

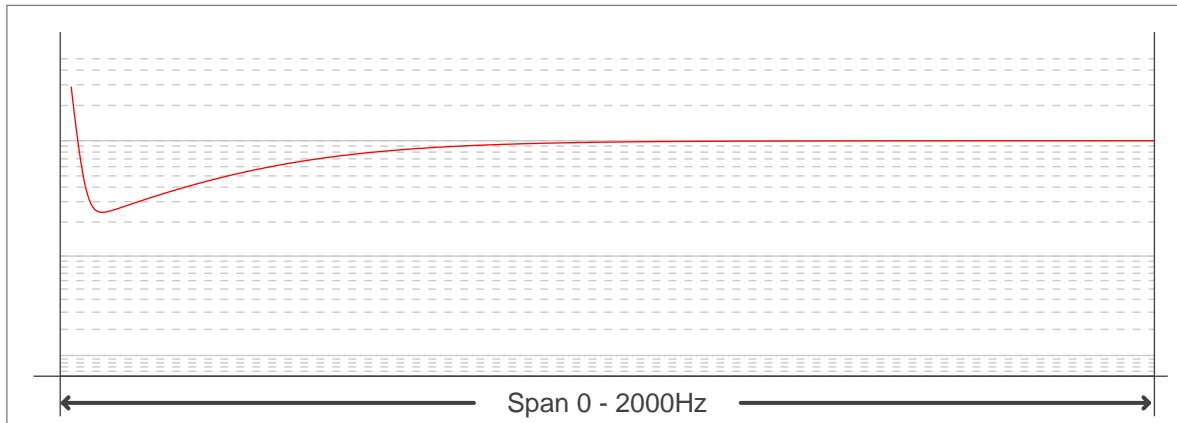
FLICKER CURVE (COMPLETE SAMPLED FLICKER)



FLICKER FRAME (FRAME OF ONE FLICKER PERIOD)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER CURVE)



FLICKER RESULTS:

Flicker frequency:	133.78 Hz
Flicker index:	0
Flicker percentage:	0.9 %
SVM: (Visual flicker)	0.01

FLICKER CONDITIONS:

Sample rate:	40000 samples/second
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