

PHOTOMETRIC TEST REPORT

ENNA DESK LED

astro

LIGHT EFFICIENCY:

41 Lumen/Watt

LIGHT QUALITY:

CRI: 81.4

COLOR TEMPERATURE:

2692 K

OUTPUT: 153 lm

PEAK: 782 cd

POWER: 3.8 W

PF: 0.4

Tracking number: [n/a](#)

Product name:

Enna Desk LED

Item number:

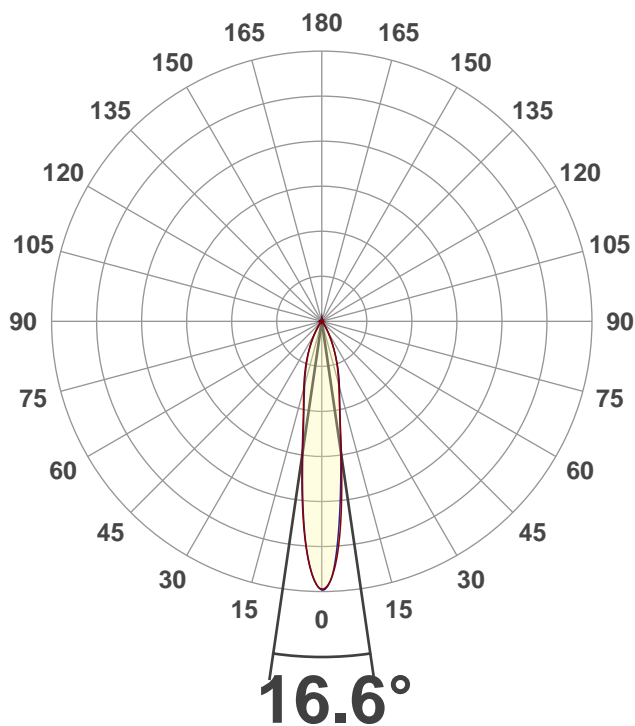
1058006

Date and time:

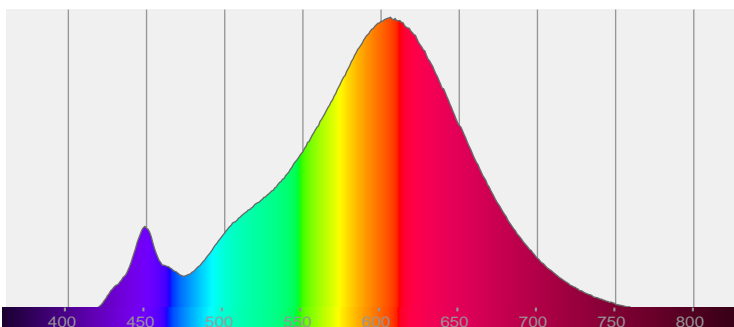
15/11/2019 12:43:51

Description:

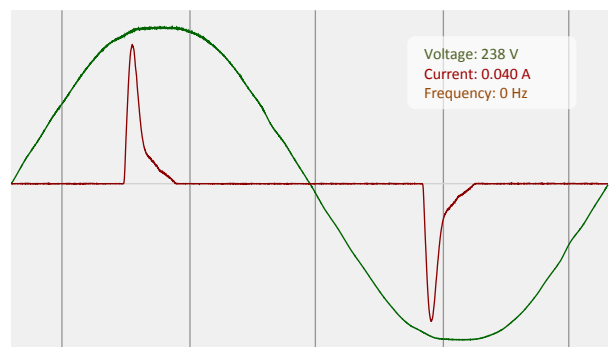
LED Reading Desk Light

CIE 1931
x: 0.464
y: 0.416

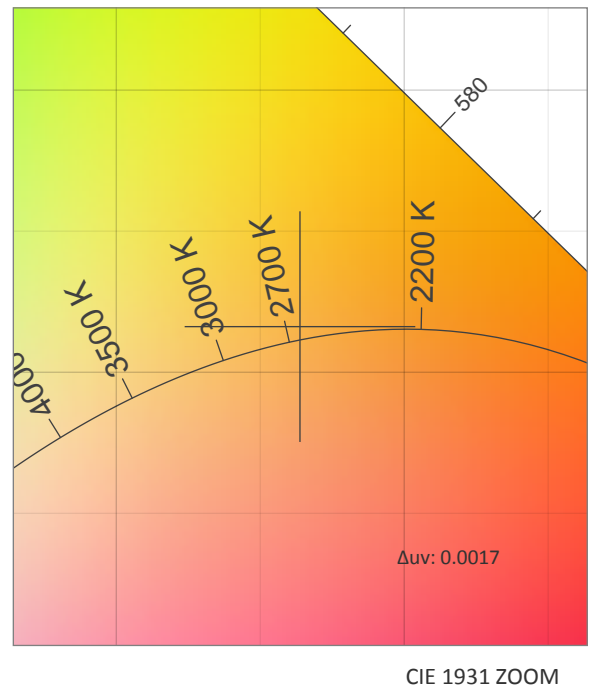
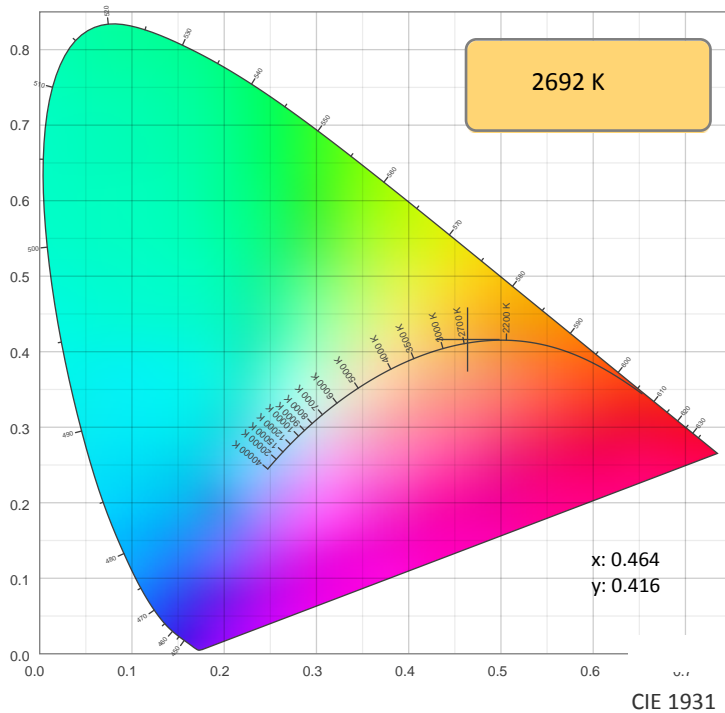
SPECTRA



POWER

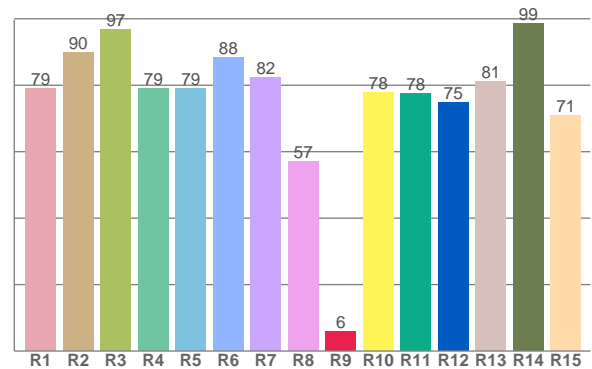
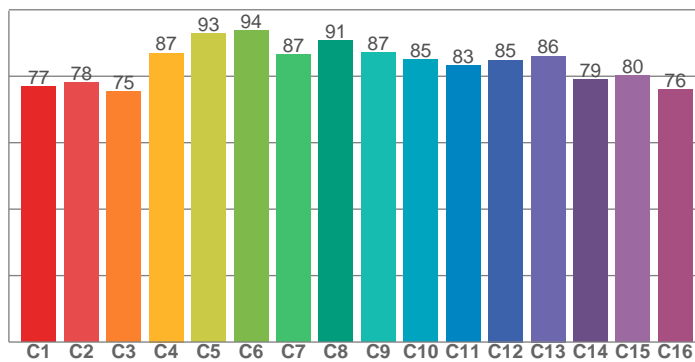


COLOR DETAILS



TM30: 83.6

CRI: 81.4 (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
79.0	89.9	96.8	79.0	79.0	88.3	82.4	57.1	5.9	78.0	77.5	74.9	81.2	98.7	70.9

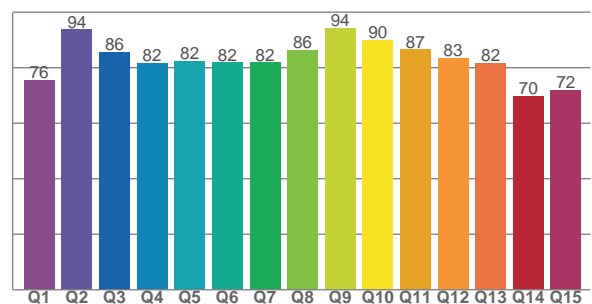
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
76.8	78.1	75.4	87.0	92.8	93.7	86.6	90.8	87.2	85.0	83.1	84.9	86.1	78.9	80.3	76.0

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
75.6	93.7	85.6	81.7	82.4	81.9	81.9	86.3	94.2	90.0	86.5	83.4	81.6	69.8	71.9

CQS: 81.6



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
2692 K	81.4	5.9	83.6	95.1	81.6	0.464	0.416	0.263	0.353	0.0017

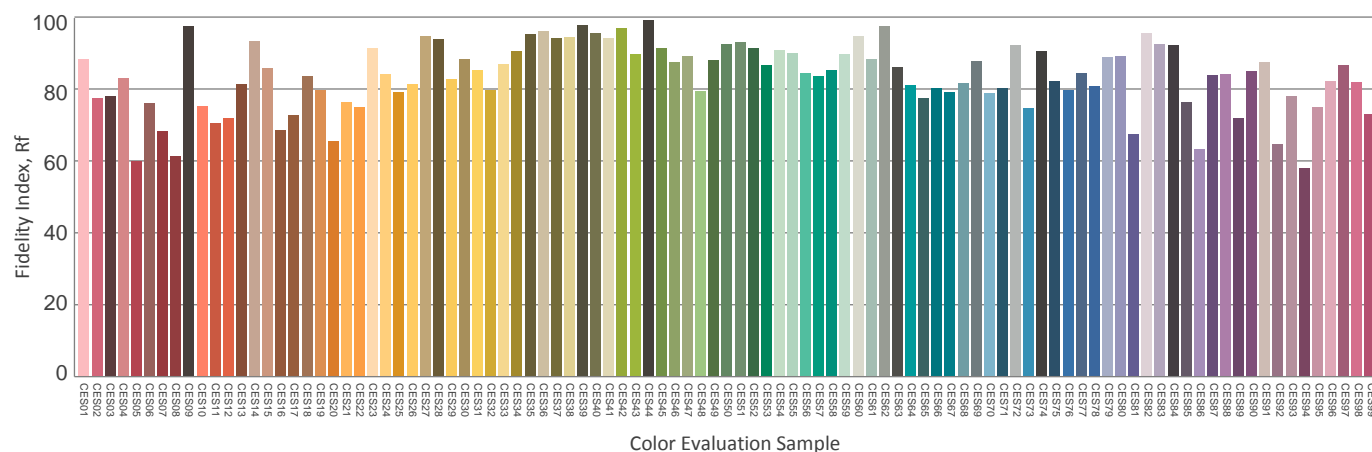
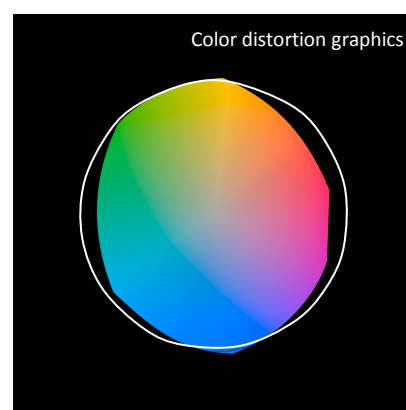
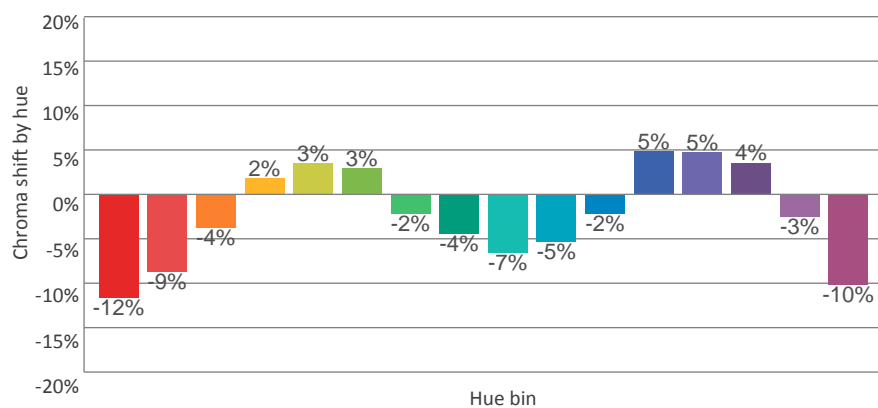
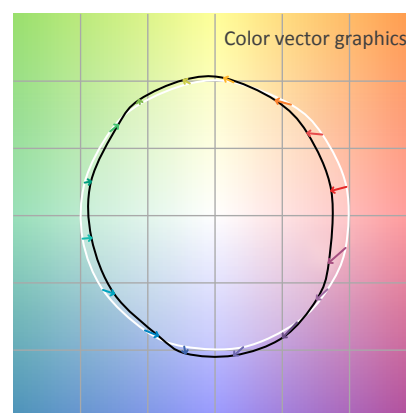
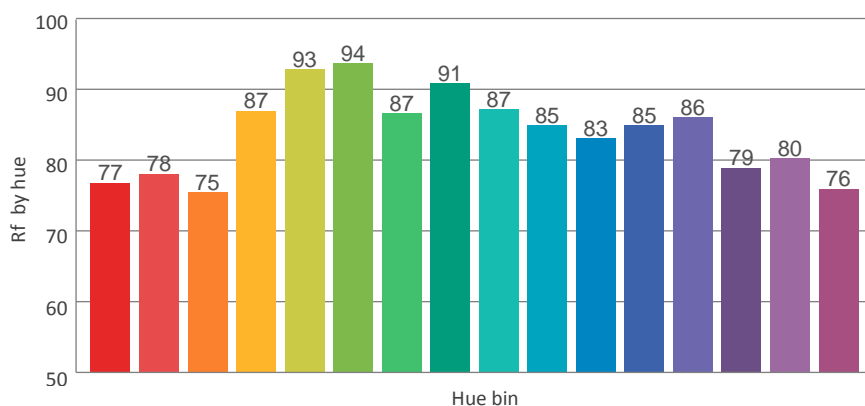
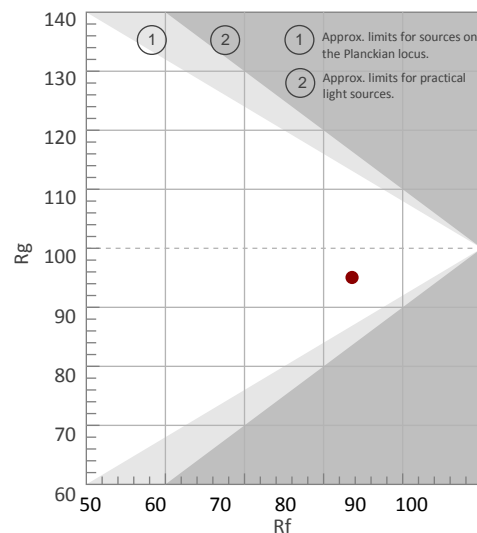
Rf 83.6

Fidelity index Rf

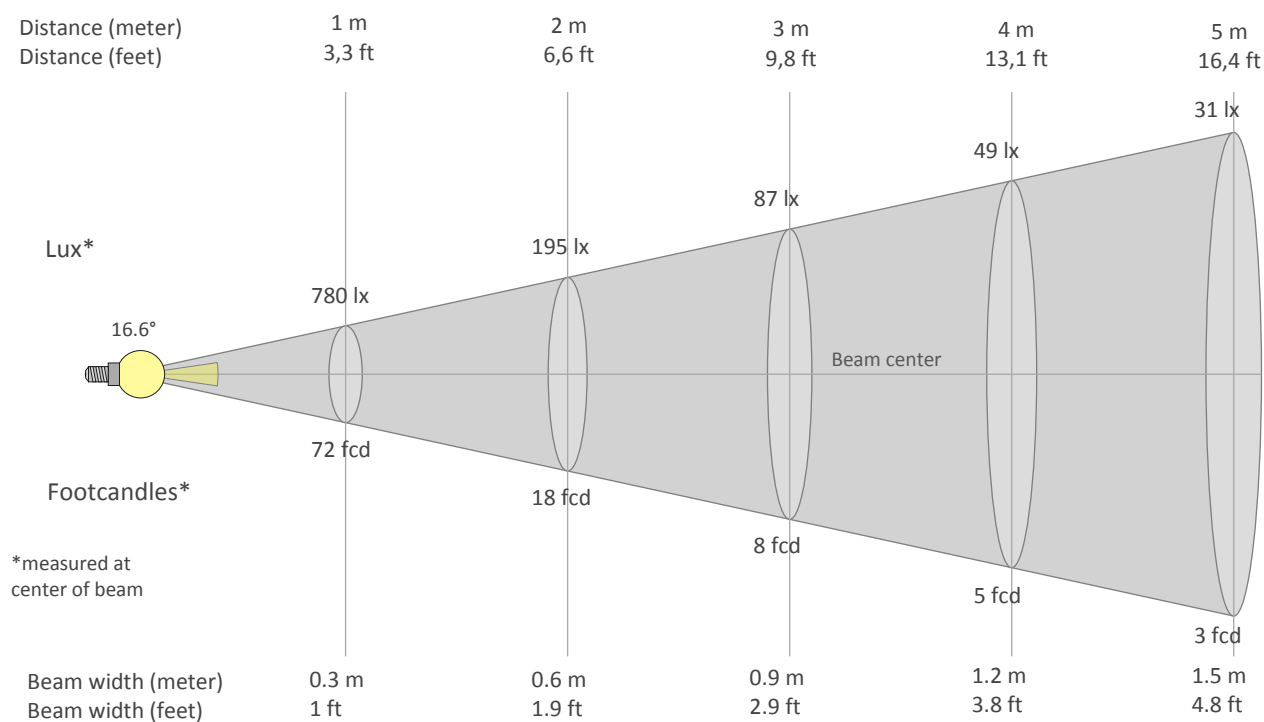
Rg 95.1

Gammut index Rg

Hue Bin	Graphic shifts (%)		
	R _f	Chroma	Hue
1	77	-12%	-1%
2	78	-9%	7%
3	75	-4%	11%
4	87	2%	7%
5	93	3%	4%
6	94	3%	-1%
7	87	-2%	-7%
8	91	-4%	-2%
9	87	-7%	1%
10	85	-5%	7%
11	83	-2%	10%
12	85	5%	2%
13	86	5%	-8%
14	79	4%	-15%
15	80	-3%	-11%
16	76	-10%	-13%



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
780lx	195lx	87lx	49lx	31lx	22lx	16lx	12lx	10lx	8lx	6lx	5lx	5lx	4lx	3lx	3lx	3lx	2lx	2lx	2lx
72.5fcd	18.1fcd	8.1fcd	4.5fcd	2.9fcd	2fcd	1.5fcd	1.1fcd	0.9fcd	0.7fcd	0.6fcd	0.5fcd	0.4fcd	0.4fcd	0.3fcd	0.3fcd	0.3fcd	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°
780	751	670	545	413	313	248	208	176	150	127	104	83	66	49	36	26	19	13	10
100%	96%	86%	70%	53%	40%	32%	27%	23%	19%	16%	13%	11%	8%	6%	5%	3%	2%	2%	1%

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°
780	751	649	516	398	307	250	213	183	156	129	105	83	64	48	36	25	18	12	9
100%	96%	83%	66%	51%	39%	32%	27%	24%	20%	17%	13%	11%	8%	6%	5%	3%	2%	2%	1%

Intensities in 180° c-plane

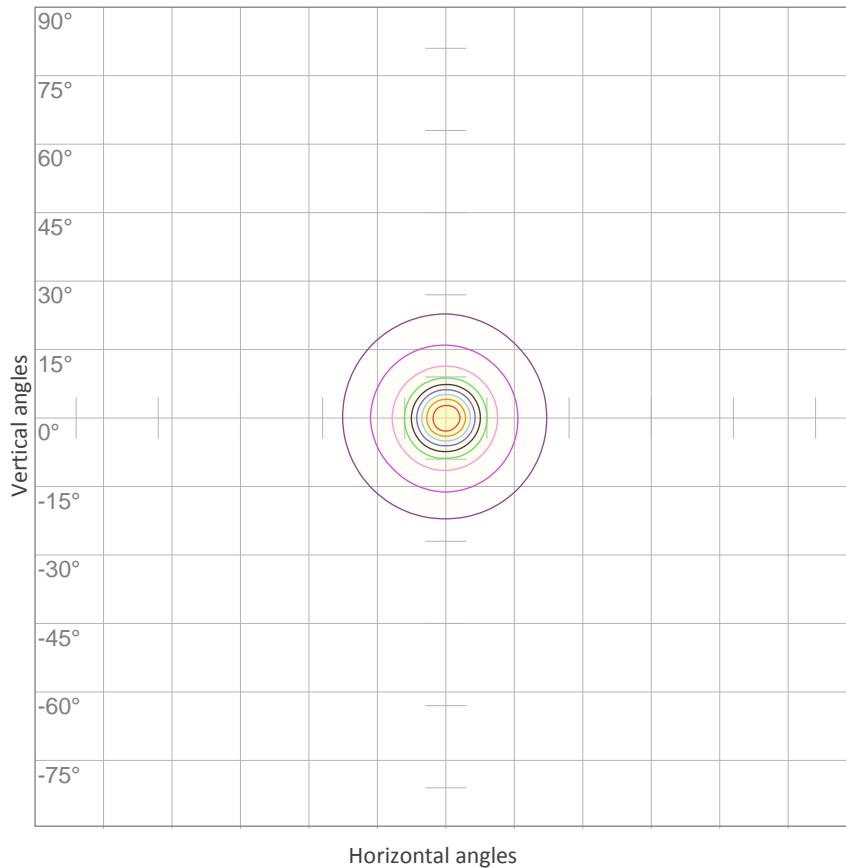
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
780	744	657	537	413	316	256	218	188	161	136	111	90	70	54	41	29	21	15	11
100%	95%	84%	69%	53%	41%	33%	28%	24%	21%	17%	14%	11%	9%	7%	5%	4%	3%	2%	1%

Intensities in 270° c-plane

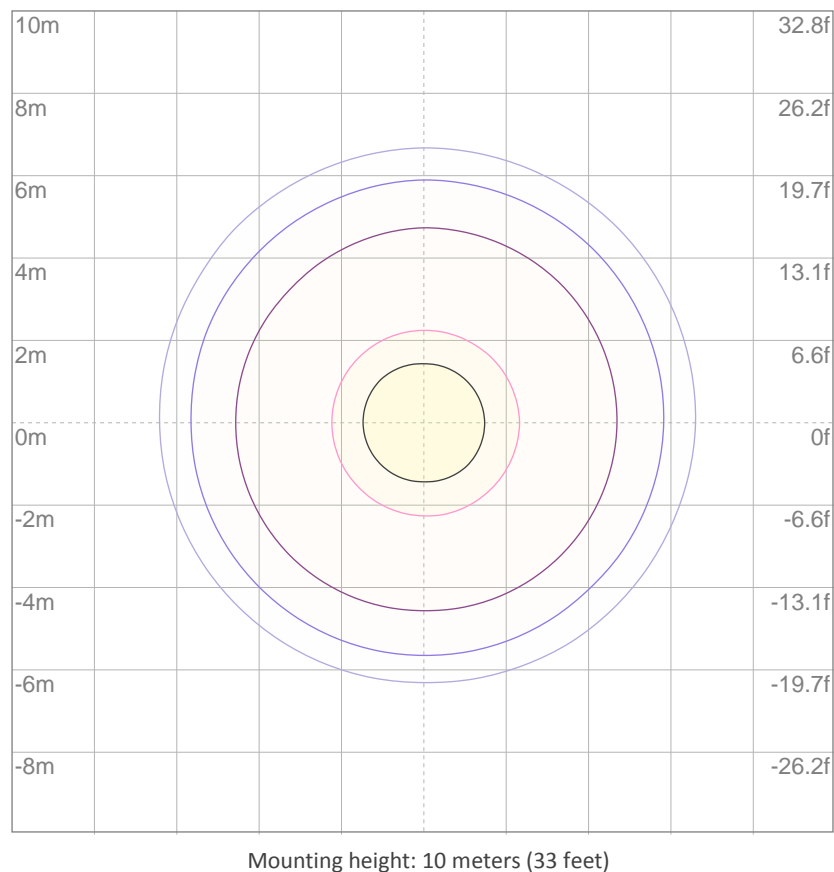
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
780	742	653	527	399	305	249	209	179	153	130	109	90	72	56	42	31	23	17	13
100%	95%	84%	68%	51%	39%	32%	27%	23%	20%	17%	14%	12%	9%	7%	5%	4%	3%	2%	2%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
16.6°	49.7°	68.3°	99.0%	98.3%

ISO CANDELA DIAGRAM



ISO LUX DIAGRAM



UGR

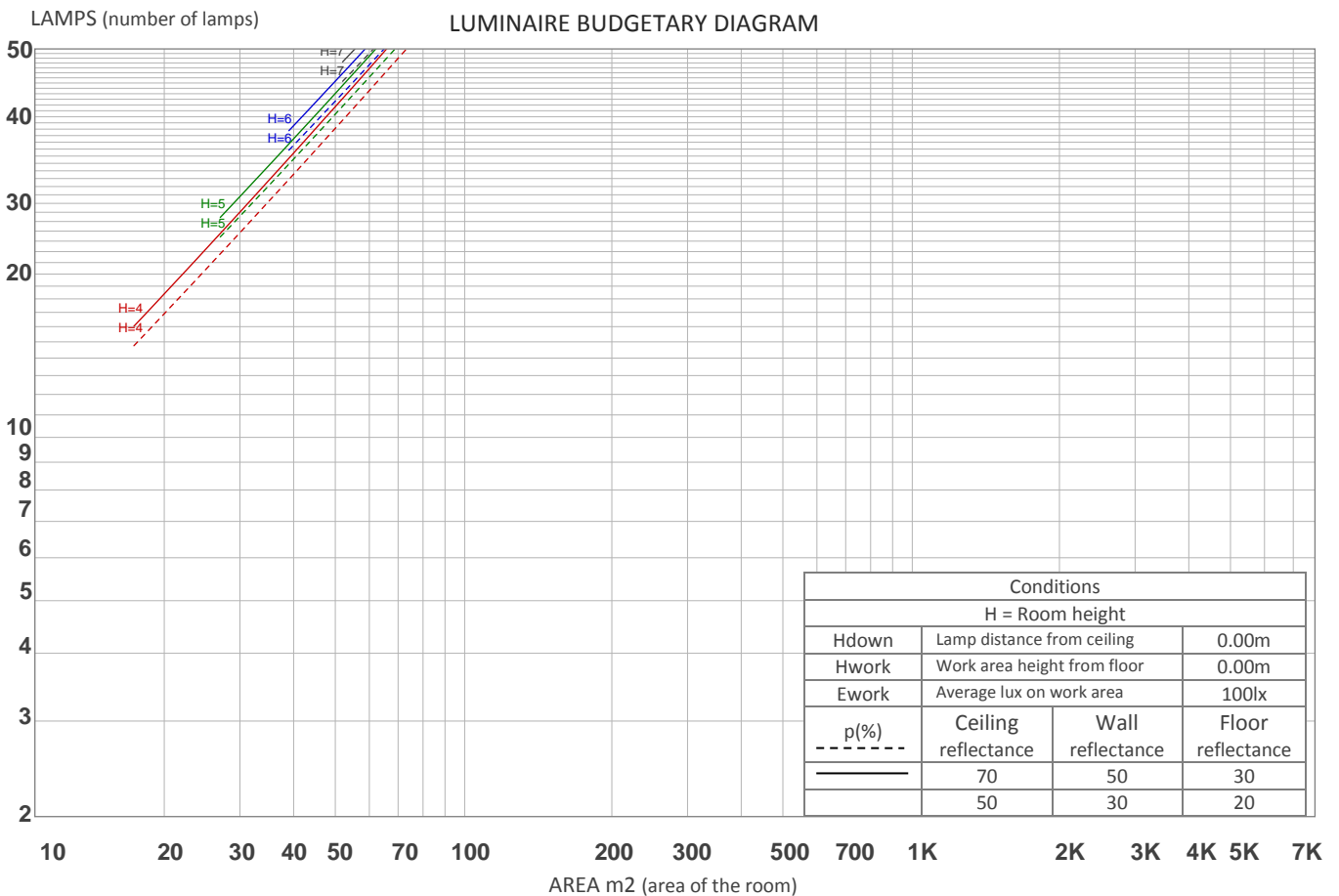
GLARE EVALUATION ACCORDING TO UGR

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	12.7	13.3	12.9	13.5	13.7	12.2	12.8	12.4	13.0	13.2
	3H	12.5	13.1	12.8	13.4	13.6	12.0	12.6	12.3	12.9	13.1
	4H	12.5	13.0	12.8	13.3	13.6	12.0	12.5	12.3	12.8	13.0
	6H	12.4	12.9	12.8	13.2	13.5	11.9	12.4	12.2	12.7	13.0
	8H	12.4	12.9	12.7	13.2	13.5	11.9	12.4	12.2	12.7	13.0
	12H	12.4	12.9	12.8	13.2	13.5	11.9	12.3	12.2	12.6	13.0
4H	2H	12.5	13.0	12.8	13.3	13.6	12.0	12.5	12.3	12.8	13.0
	3H	12.3	12.8	12.7	13.1	13.4	11.8	12.3	12.2	12.6	12.9
	4H	12.3	12.7	12.7	13.0	13.4	11.8	12.1	12.1	12.5	12.8
	6H	12.2	12.6	12.6	12.9	13.3	11.7	12.0	12.1	12.4	12.8
	8H	12.2	12.5	12.6	12.9	13.3	11.7	12.0	12.1	12.4	12.8
	12H	12.2	12.5	12.7	12.9	13.3	11.7	12.0	12.2	12.4	12.8
8H	4H	12.2	12.5	12.6	12.9	13.3	11.6	11.9	12.1	12.3	12.7
	6H	12.1	12.3	12.6	12.8	13.2	11.6	11.8	12.1	12.2	12.7
	8H	12.1	12.3	12.6	12.7	13.2	11.6	11.8	12.1	12.2	12.7
	12H	12.2	12.3	12.7	12.8	13.3	11.6	11.8	12.1	12.3	12.8
12H	4H	12.1	12.4	12.6	12.8	13.2	11.6	11.9	12.0	12.3	12.7
	6H	12.1	12.3	12.6	12.7	13.2	11.6	11.7	12.0	12.2	12.7
	8H	12.1	12.2	12.6	12.7	13.2	11.6	11.7	12.1	12.2	12.7
Variation of the observer position for the luminaire distance S											
S = 1.0H		+5.2 / -9.0					+5.3 / -8.7				
S = 1.5H		+7.9 / -9.8					+8.1 / -9.5				
S = 2.0H		+9.9 / -10.8					+10.1 / -10.3				
Standard table		BK00					BK00				
Correction summand		-5.9					-6.4				
Corrected glare indices referring to 153 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	101	101	101	99
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	98	98	97	95
2	110	106	103	100	108	105	102	99	101	99	97	98	96	95	95	94	93	91
3	106	101	97	94	104	100	96	93	97	94	92	95	92	90	92	90	89	87
4	102	97	92	89	101	95	91	88	93	90	87	91	89	86	90	87	85	84
5	99	92	88	85	97	92	87	84	90	86	83	88	85	83	87	84	82	81
6	96	89	84	81	94	88	84	81	86	83	80	85	82	79	84	81	79	78
7	92	85	81	77	91	85	80	77	83	80	77	82	79	76	81	78	76	75
8	89	82	78	74	88	82	77	74	81	77	74	80	76	74	79	76	73	72
9	87	79	75	72	86	79	75	72	78	74	71	77	74	71	76	73	71	70
10	84	77	72	69	83	76	72	69	76	72	69	75	71	69	74	71	69	68



ZONAL LUMEN SUMMARY

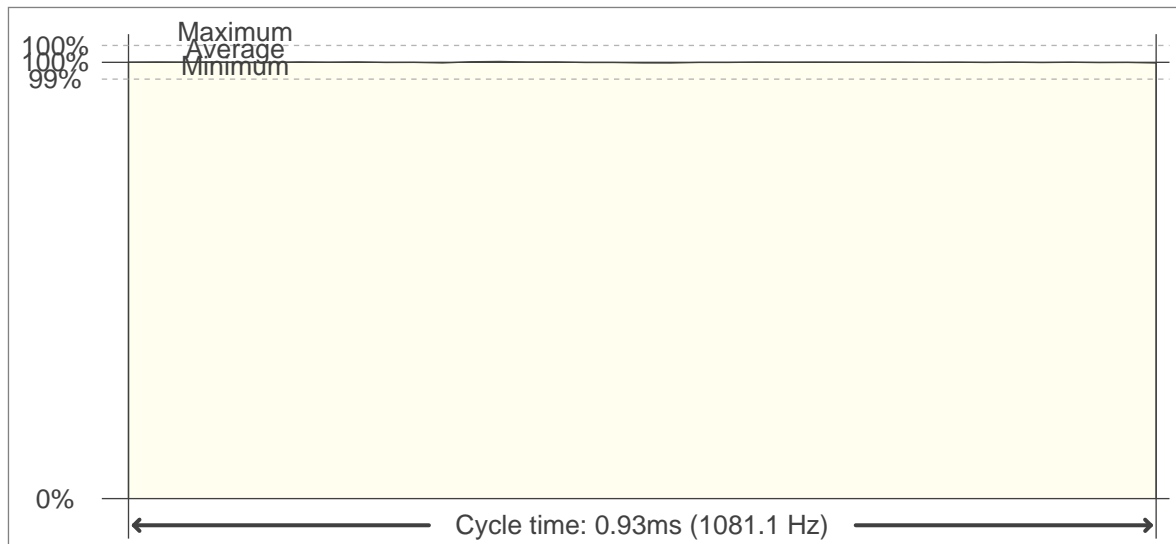
0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
46.9 lm	54.8 lm	35.3 lm	11.6 lm	2.61 lm	0.361 lm	0.122 lm	0.088 lm	0.097 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.092 lm	0.103 lm	0.138 lm	0.159 lm	0.197 lm	0.214 lm	0.192 lm	0.140 lm	0.038 lm

FLICKER

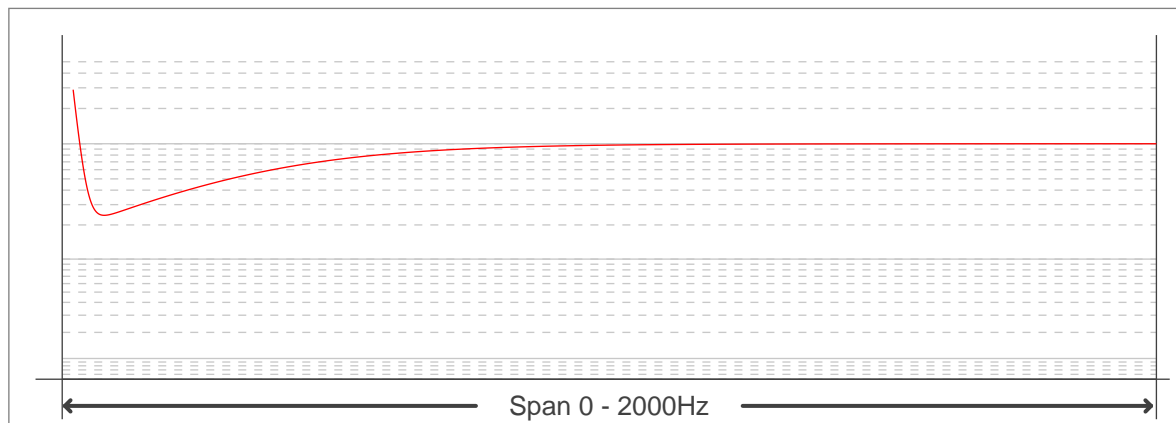
FLICKER CURVE (COMPLETE SAMPLED FLICKER)



FLICKER FRAME (FRAME OF ONE FLICKER PERIOD)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER CURVE)



FLICKER RESULTS:

Flicker frequency:	1081.08 Hz
Flicker index:	0
Flicker percentage:	0.32 %
SVM: (Visual flicker)	0

FLICKER CONDITIONS:

Sample rate:	40000 samples/second
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