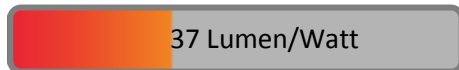


PHOTOMETRIC TEST REPORT

EDGE READER LED - READER HEAD

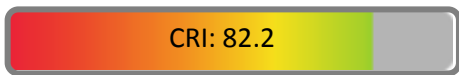
astro

LIGHT EFFICIENCY:



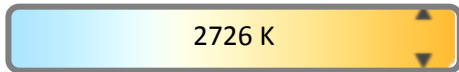
OUTPUT: 142 lm

LIGHT QUALITY:



PEAK: 869 cd

COLOR TEMPERATURE:



POWER: 3.9 W

PF: 0.42

Tracking number: [n/a](#)

Product name:

Edge Reader LED - Reader Head

Item number:

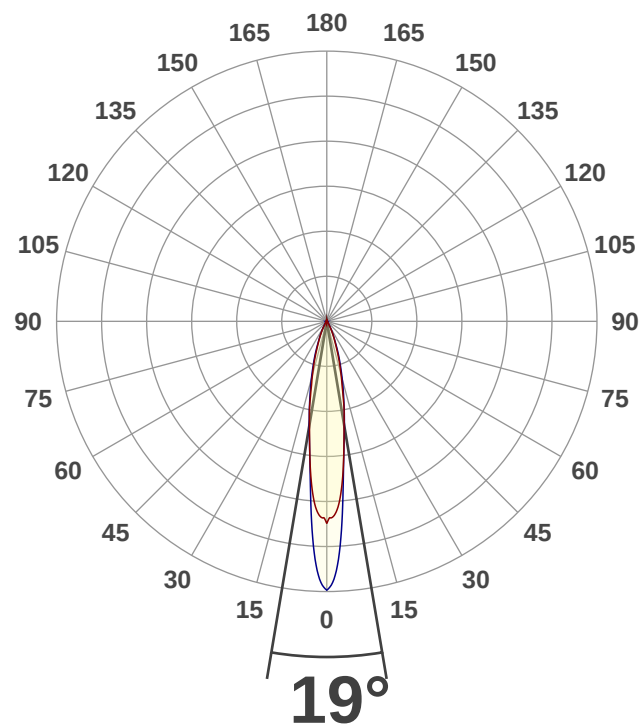
1352007

Date and time:

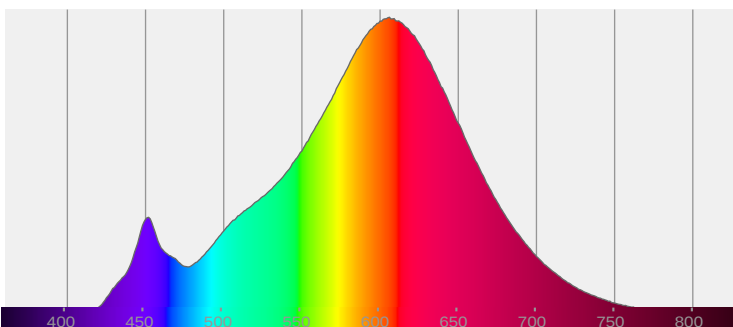
03/10/2019 15:05:45

Description:

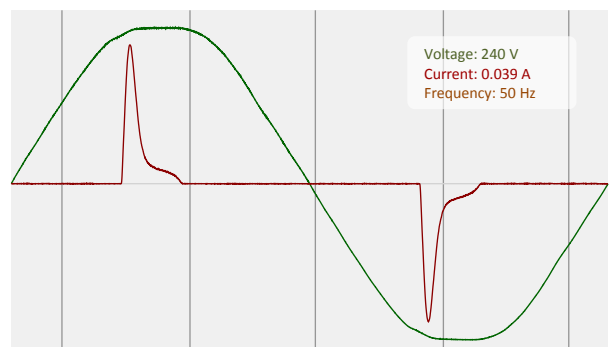
LED Reader Head Only

CIE 1931
x: 0.459
y: 0.411

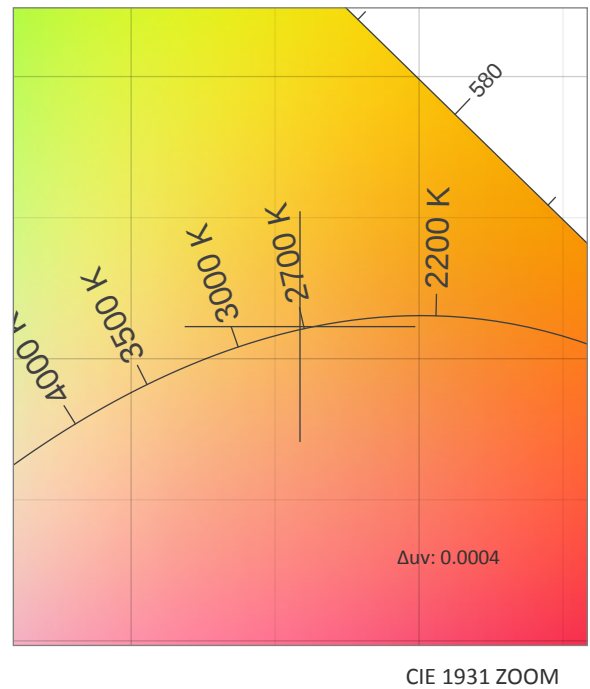
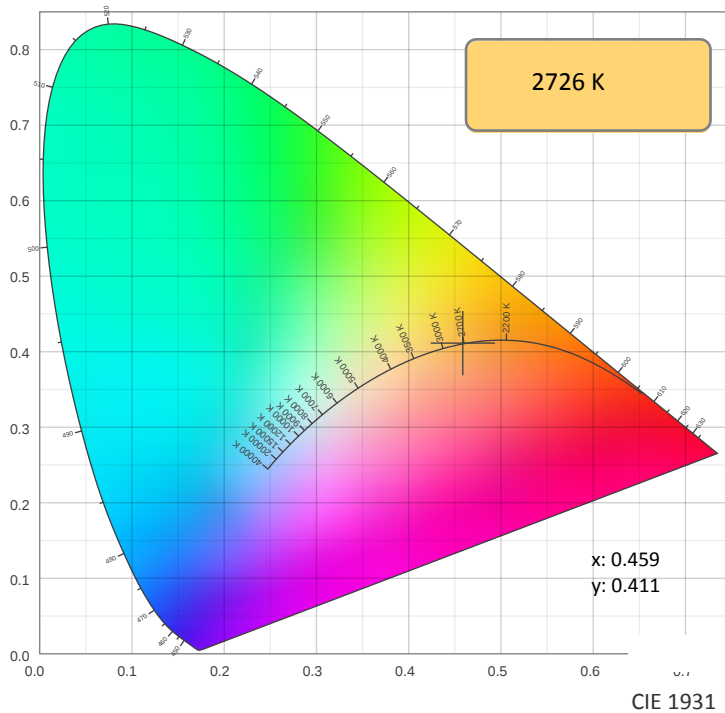
SPECTRA



POWER

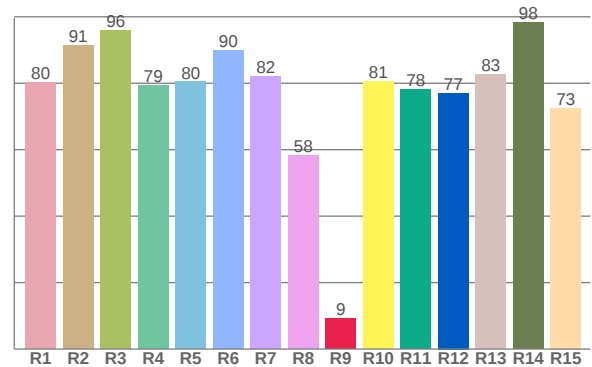
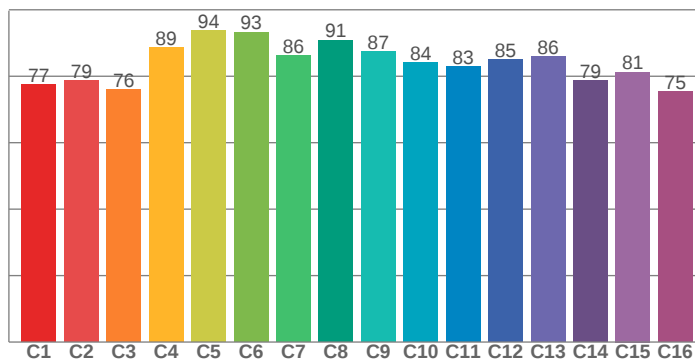


COLOR DETAILS



TM30: 83.9

CRI: 82.2 (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
80.2	91.2	95.8	79.4	80.4	90.0	82.1	58.2	9.3	80.7	78.0	77.1	82.6	98.3	72.6

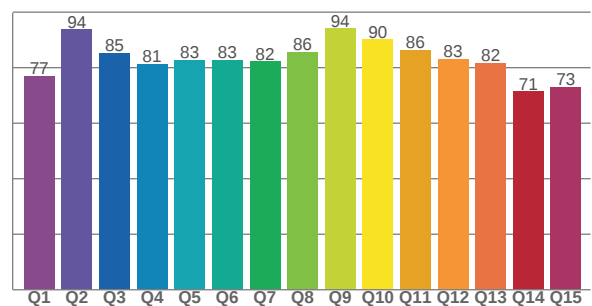
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
77.5	78.7	76.1	88.6	93.8	93.3	86.1	90.9	87.5	84.2	83.0	85.0	85.9	78.7	81.3	75.5

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
76.9	93.8	85.3	81.3	82.7	82.7	82.3	85.7	94.1	90.1	86.3	83.2	81.7	71.3	73.1

CQS: 82.1



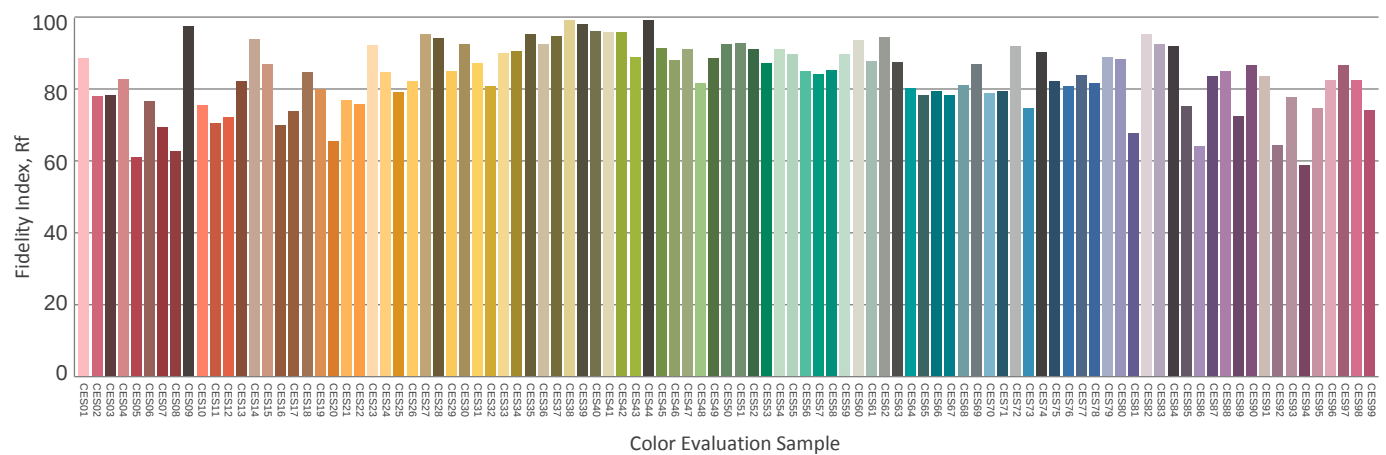
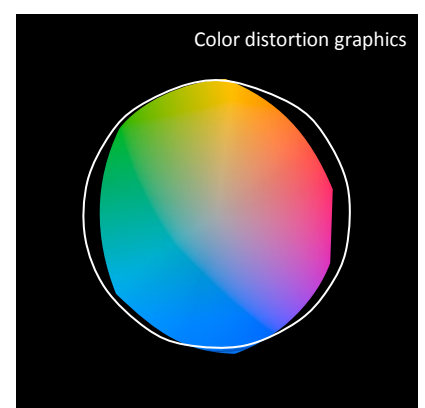
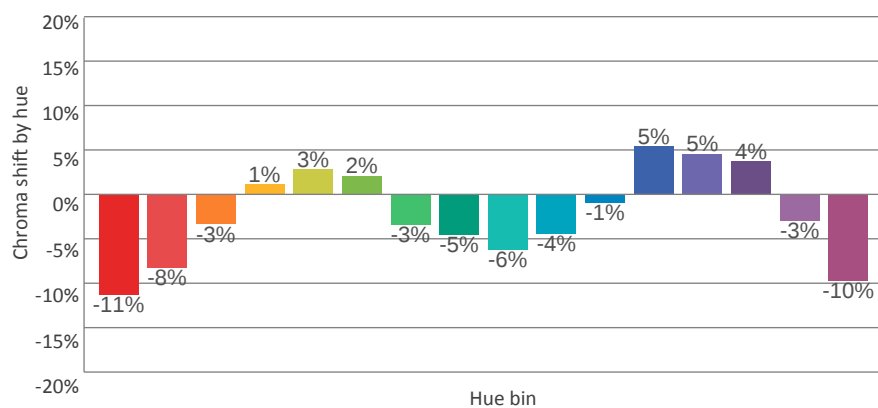
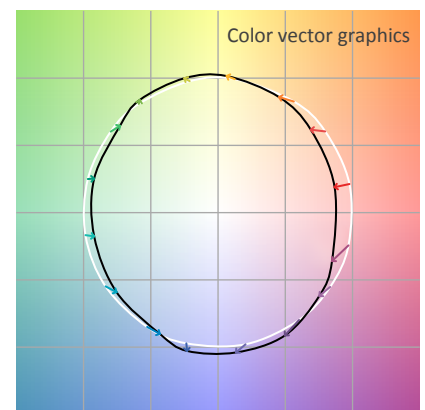
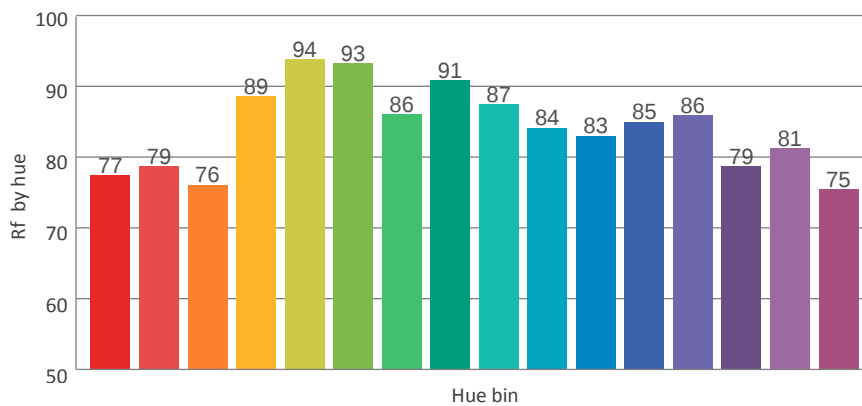
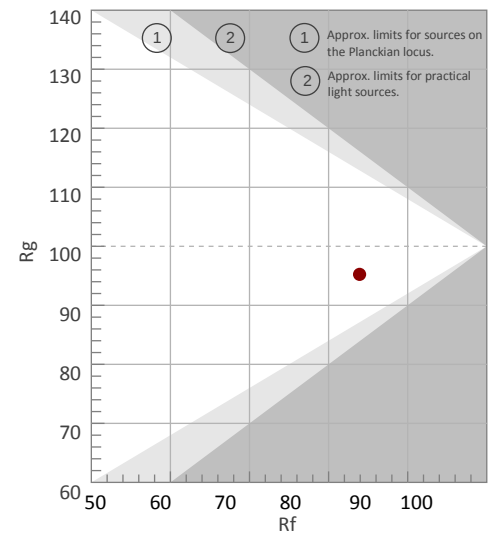
COLOR PARAMETERS

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
2726 K	82.2	9.3	83.9	95.2	82.1	0.459	0.411	0.261	0.352	0.0004

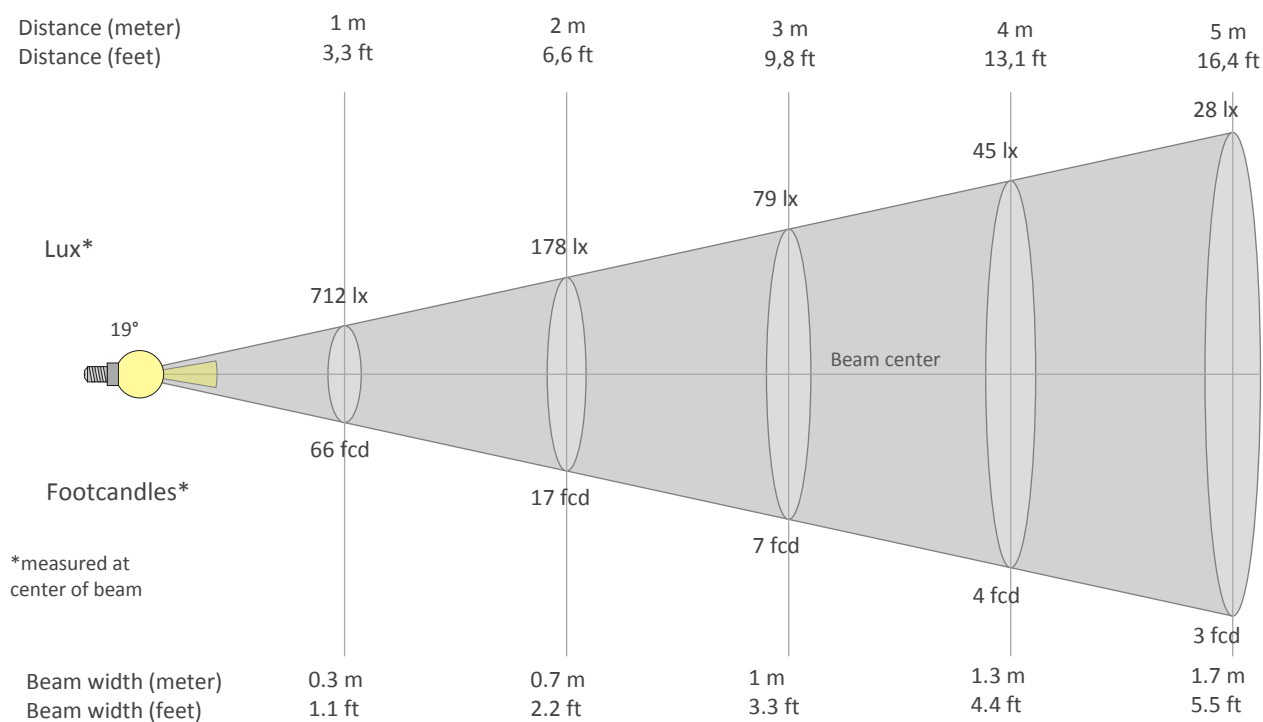
Rf 83.9
Fidelity index Rf

Rg 95.2
Gammut index Rg

Hue Bin	Graphic shifts (%)		
	R _f	Chroma	Hue
1	77	-11%	0%
2	79	-8%	7%
3	76	-3%	11%
4	89	1%	6%
5	94	3%	4%
6	93	2%	-2%
7	86	-3%	-7%
8	91	-5%	-1%
9	87	-6%	2%
10	84	-4%	8%
11	83	-1%	11%
12	85	5%	2%
13	86	5%	-8%
14	79	4%	-15%
15	81	-3%	-10%
16	75	-10%	-14%



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
712lx	178lx	79lx	45lx	28lx	20lx	15lx	11lx	9lx	7lx	6lx	5lx	4lx	4lx	3lx	3lx	2lx	2lx	2lx	2lx
66.2fcd	16.5fcd	7.4fcd	4.1fcd	2.6fcd	1.8fcd	1.4fcd	1fcd	0.8fcd	0.7fcd	0.5fcd	0.5fcd	0.4fcd	0.3fcd	0.3fcd	0.3fcd	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°
712	631	584	498	399	323	259	200	159	123	92	70	54	40	29	21	15	12	10	8
100%	89%	82%	70%	56%	45%	36%	28%	22%	17%	13%	10%	8%	6%	4%	3%	2%	2%	1%	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°
712	817	679	513	401	328	267	216	172	135	103	75	56	41	30	22	17	13	11	9
100%	115%	95%	72%	56%	46%	37%	30%	24%	19%	15%	11%	8%	6%	4%	3%	2%	2%	1%	1%

Intensities in 180° c-plane

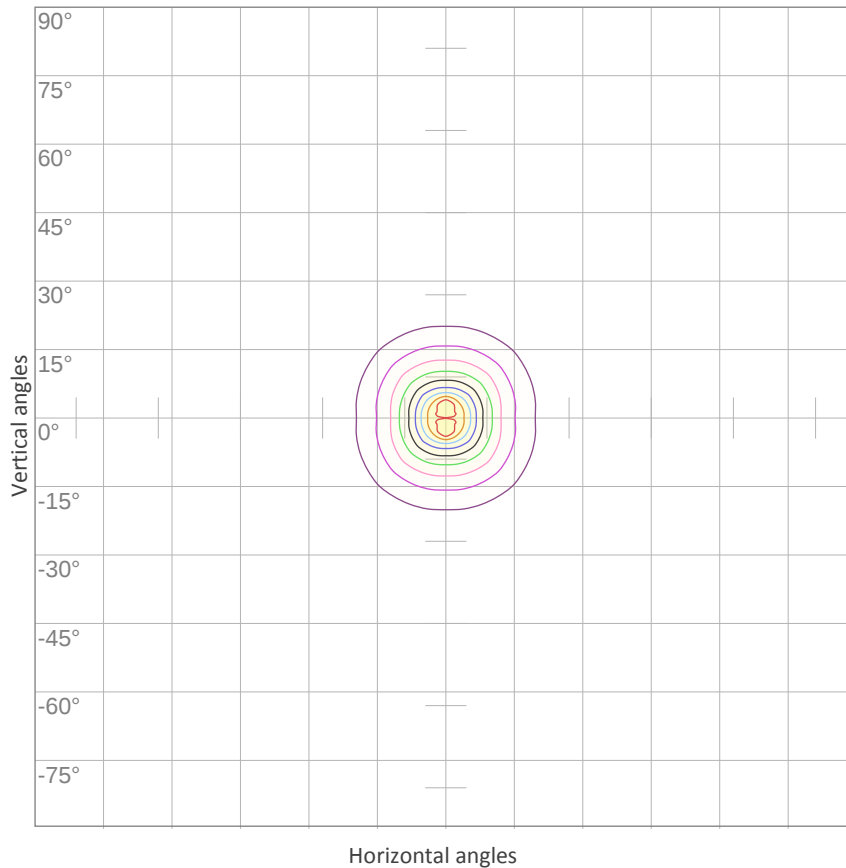
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
712	631	584	498	399	323	259	200	159	123	92	70	54	40	29	21	15	12	10	8
100%	89%	82%	70%	56%	45%	36%	28%	22%	17%	13%	10%	8%	6%	4%	3%	2%	2%	1%	1%

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°
712	817	679	513	401	328	267	216	172	135	103	75	56	41	30	22	17	13	11	9
100%	115%	95%	72%	56%	46%	37%	30%	24%	19%	15%	11%	8%	6%	4%	3%	2%	2%	1%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
19°	45.4°	63.2°	97.6%	94.5%

ISO CANDELA DIAGRAM



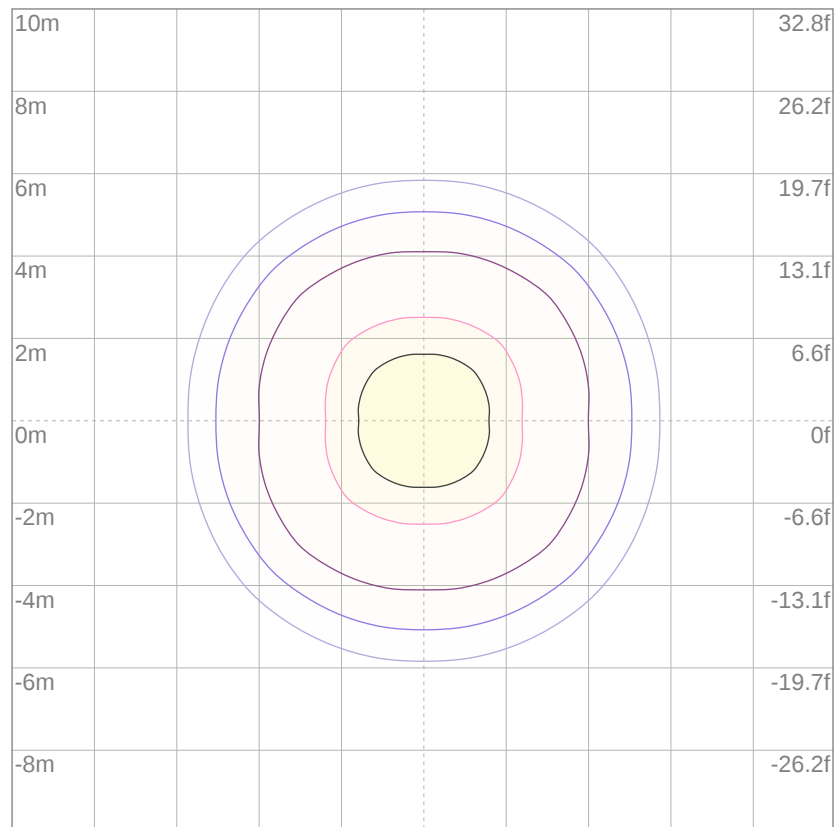
10%	71 cd
20%	142 cd
30%	214 cd
40%	285 cd
50%	356 cd
60%	427 cd
70%	499 cd
80%	570 cd
90%	641 cd

Conditions:

Number of c-planes: 8

Candela at center: 712 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	0.214 lx
5%	0.356 lx
10%	0.712 lx
30%	2.14 lx
50%	{LUX_10M50} lx

Conditions:

Number of c-planes: 8

Lux at center: 7.12 lx

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

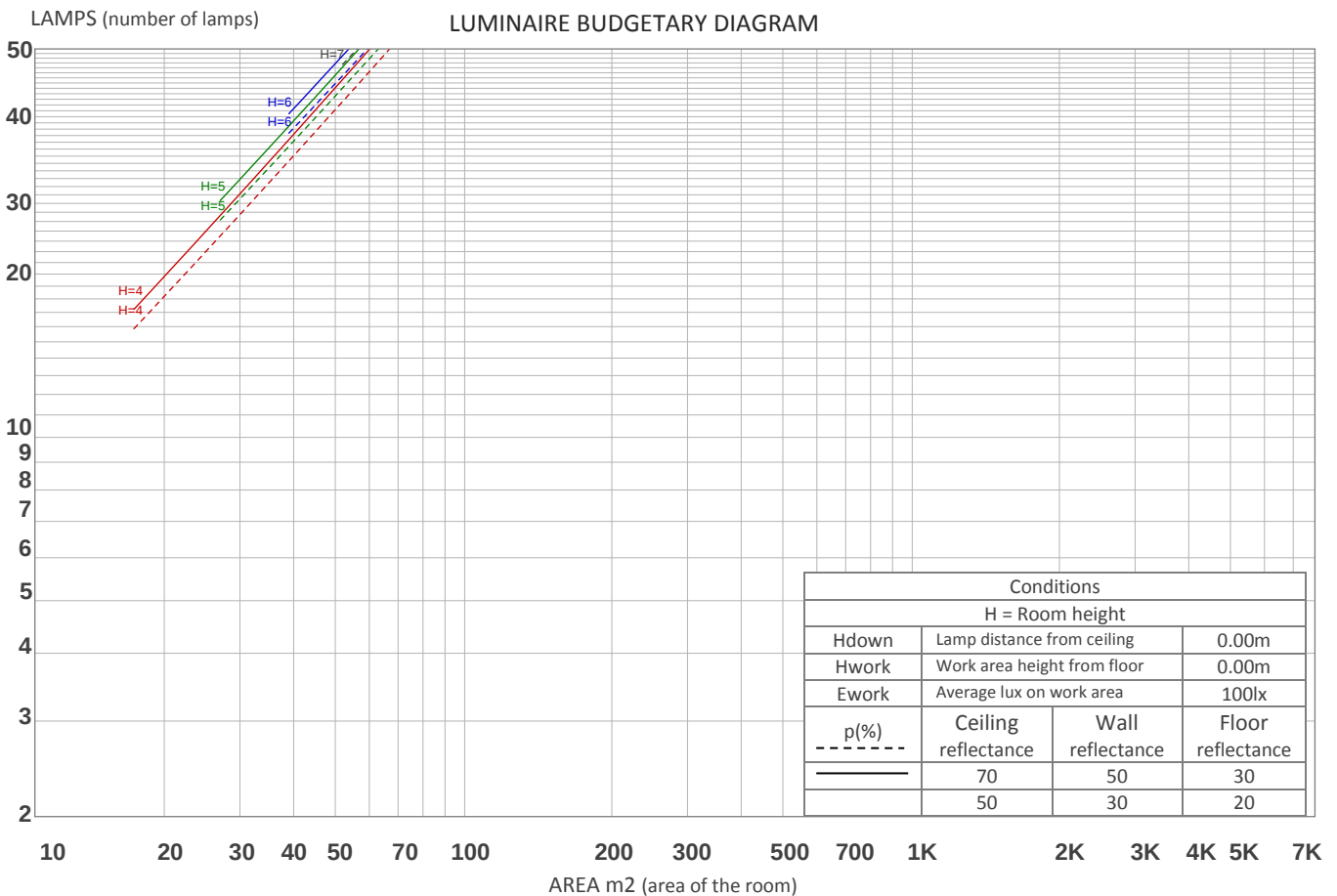
UGR

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	14.0	14.7	14.2	14.9	15.1	14.2	14.9	14.5	15.1	15.3
	3H	14.8	15.4	15.1	15.7	15.9	14.9	15.6	15.2	15.8	16.1
	4H	15.2	15.8	15.5	16.0	16.3	15.2	15.8	15.5	16.1	16.4
	6H	15.4	16.0	15.8	16.3	16.6	15.4	15.9	15.7	16.2	16.5
	8H	15.6	16.1	15.9	16.4	16.7	15.4	16.0	15.8	16.3	16.6
	12H	15.7	16.2	16.0	16.5	16.8	15.5	16.0	15.8	16.3	16.6
4H	2H	14.2	14.8	14.6	15.1	15.4	14.4	15.0	14.8	15.3	15.6
	3H	15.2	15.7	15.6	16.1	16.4	15.4	15.9	15.7	16.2	16.5
	4H	15.7	16.2	16.1	16.5	16.9	15.8	16.2	16.1	16.5	16.9
	6H	16.2	16.5	16.6	16.9	17.3	16.0	16.4	16.4	16.8	17.2
	8H	16.3	16.7	16.8	17.0	17.5	16.1	16.5	16.6	16.8	17.3
	12H	16.5	16.8	17.0	17.2	17.6	16.2	16.5	16.7	16.9	17.3
8H	4H	15.9	16.2	16.3	16.6	17.0	15.9	16.2	16.3	16.6	17.0
	6H	16.4	16.7	16.9	17.1	17.6	16.3	16.5	16.7	17.0	17.4
	8H	16.7	16.9	17.2	17.3	17.8	16.5	16.7	16.9	17.1	17.6
	12H	17.0	17.1	17.5	17.6	18.1	16.6	16.8	17.1	17.2	17.7
12H	4H	15.9	16.2	16.3	16.6	17.0	15.9	16.2	16.4	16.6	17.0
	6H	16.5	16.7	16.9	17.1	17.6	16.3	16.5	16.8	17.0	17.5
	8H	16.8	16.9	17.2	17.4	17.9	16.5	16.7	17.0	17.2	17.7
Variation of the observer position for the luminaire distance S											
S = 1.0H		+0.7 / -0.5					+0.9 / -0.6				
S = 1.5H		+1.7 / -1.0					+2.1 / -1.1				
S = 2.0H		+2.9 / -1.3					+3.4 / -1.5				
Standard table		BK04					BK03				
Correction summand		-1.1					-1.6				
Corrected glare indices referring to 142 lm total luminous flux											

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	99
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	98	97	97	95
2	110	106	102	99	108	104	101	98	101	98	96	98	96	94	95	93	92	90
3	106	100	96	93	104	99	95	92	96	93	91	94	92	89	92	90	88	87
4	102	96	91	88	100	95	91	87	93	89	86	91	88	85	89	86	84	83
5	98	92	87	84	97	91	87	83	89	85	83	88	84	82	86	83	81	80
6	95	88	83	80	94	87	83	80	86	82	79	85	81	79	83	80	78	77
7	92	85	80	77	91	84	80	77	83	79	76	82	79	76	81	78	76	74
8	89	82	77	74	88	81	77	74	80	76	74	79	76	73	79	75	73	72
9	87	79	75	72	86	79	74	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

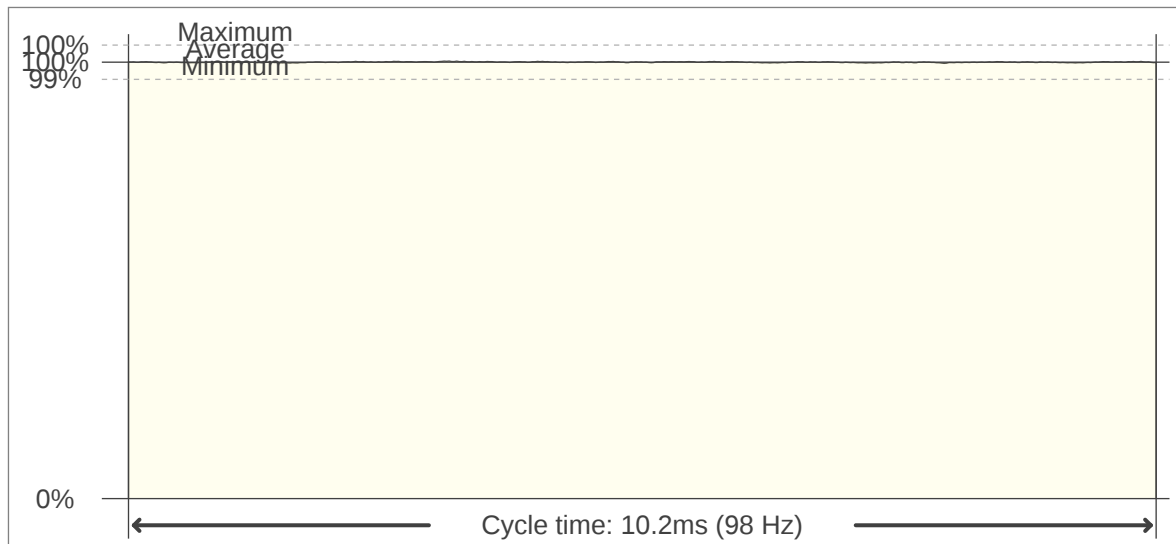
0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
45.8 lm	54.6 lm	24.1 lm	7.71 lm	4.07 lm	2.59 lm	1.57 lm	0.838 lm	0.313 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.100 lm	0.078 lm	0.072 lm	0.082 lm	0.099 lm	0.117 lm	0.113 lm	0.074 lm	0.021 lm

FLICKER

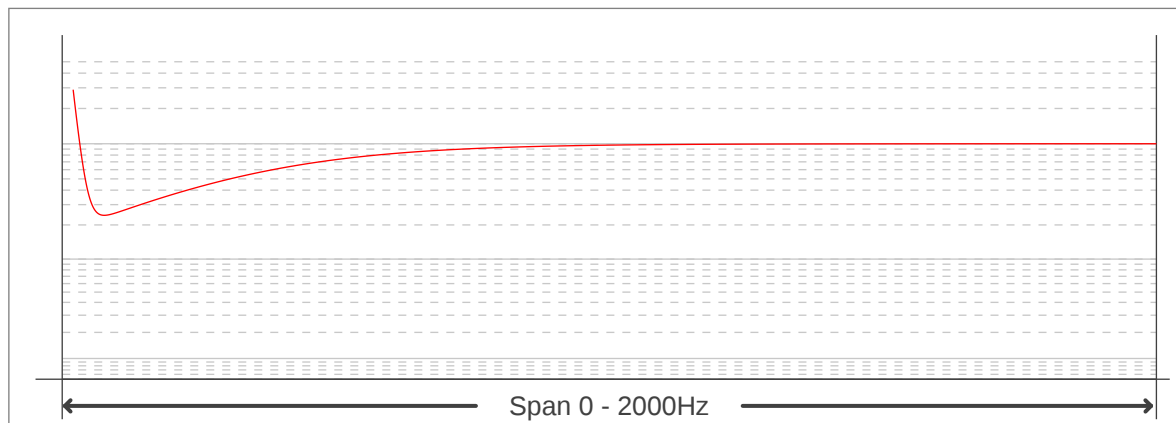
FLICKER CURVE (COMPLETE SAMPLED FLICKER)



FLICKER FRAME (FRAME OF ONE FLICKER PERIOD)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER CURVE)



FLICKER RESULTS:

Flicker frequency:	98.04 Hz
Flicker index:	0
Flicker percentage:	0.29 %
SVM: (Visual flicker)	0

FLICKER CONDITIONS:

Sample rate:	40000 samples/second
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