

# PHOTOMETRIC TEST REPORT

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EDGE READER MINI READER  
HEAD

astro

## EDGE READER MINI READER HEAD

astro

### LIGHT EFFICIENCY:

36 Lumen/Watt

### LIGHT QUALITY:

CRI: 95.5

### COLOR TEMPERATURE:

2703 K

OUTPUT: 118 lm

PEAK: 534 cd

POWER: 3.3 W

PF: 0.49



Tracking number: [n/a](#)

Product name:

Edge Reader Mini Reader Head

Item number:

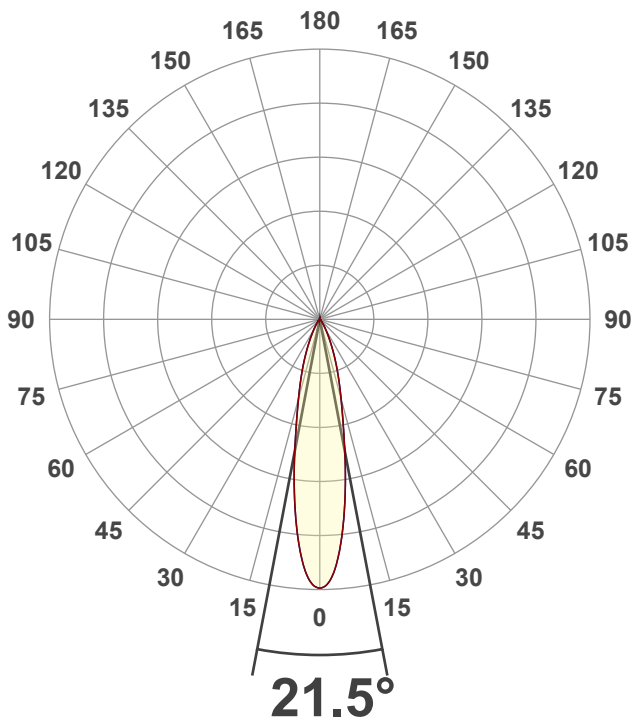
13520XX

Date and time:

31/05/2023 14:46:22

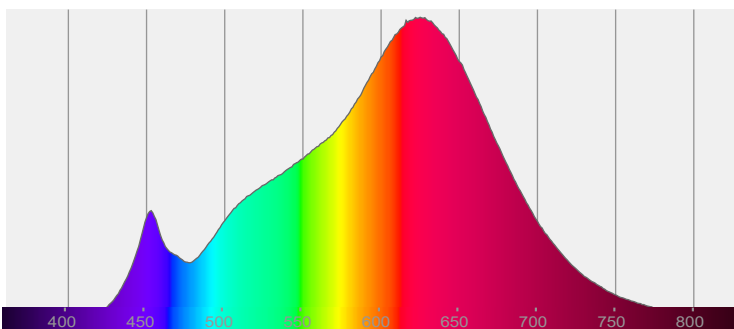
Description:

LED Reading Head

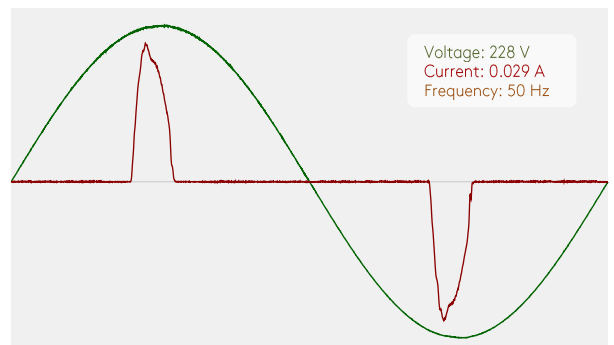


CIE 1931  
x: 0.457  
y: 0.406

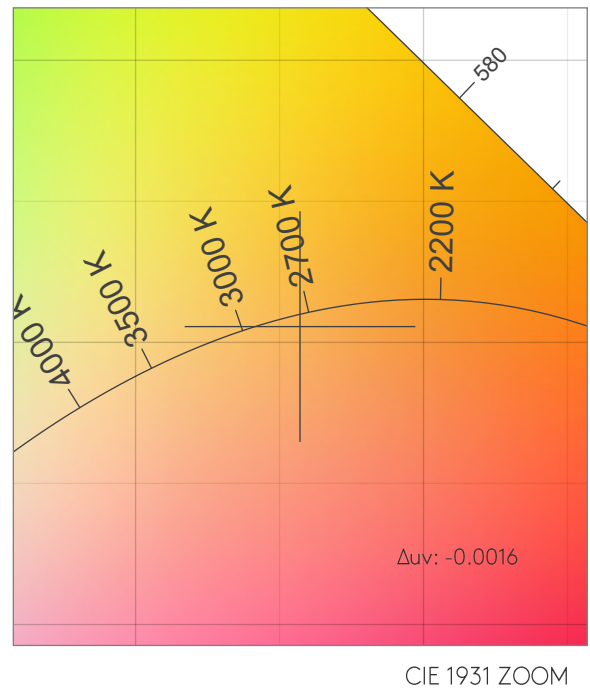
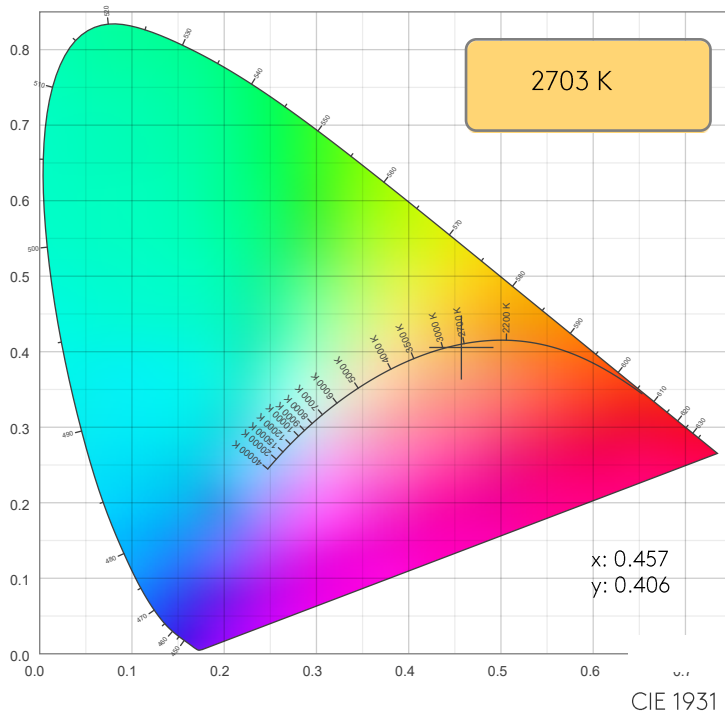
### SPECTRA



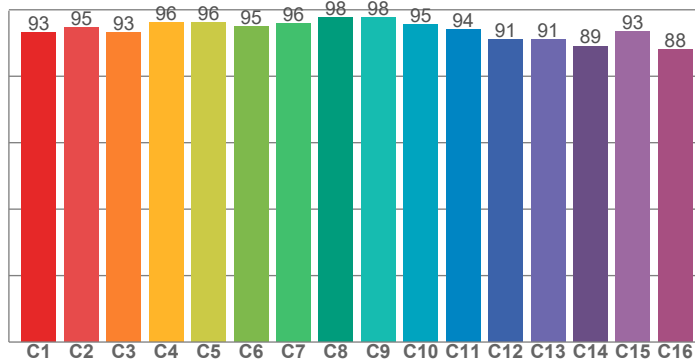
### POWER



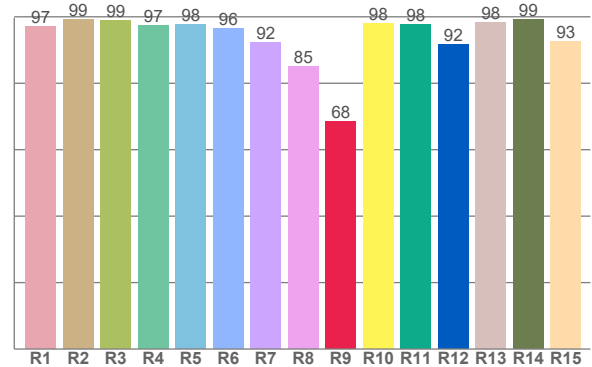
## COLOR DETAILS



TM30: 94.0



CRI: 95.5 (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
97.2	99.2	98.9	97.3	97.8	96.4	92.3	85.1	68.5	97.9	97.6	91.6	98.2	99.2	92.6

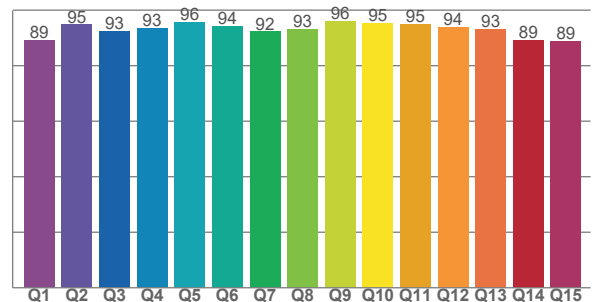
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
93.2	94.6	93.1	96.2	96.2	95.0	95.9	97.6	97.7	95.5	94.0	91.0	91.0	89.1	93.4	88.1

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89.2	94.8	92.5	93.5	95.7	94.2	92.3	93.1	96.2	95.3	95.0	94.0	93.3	89.2	88.9

CQS: 92.6



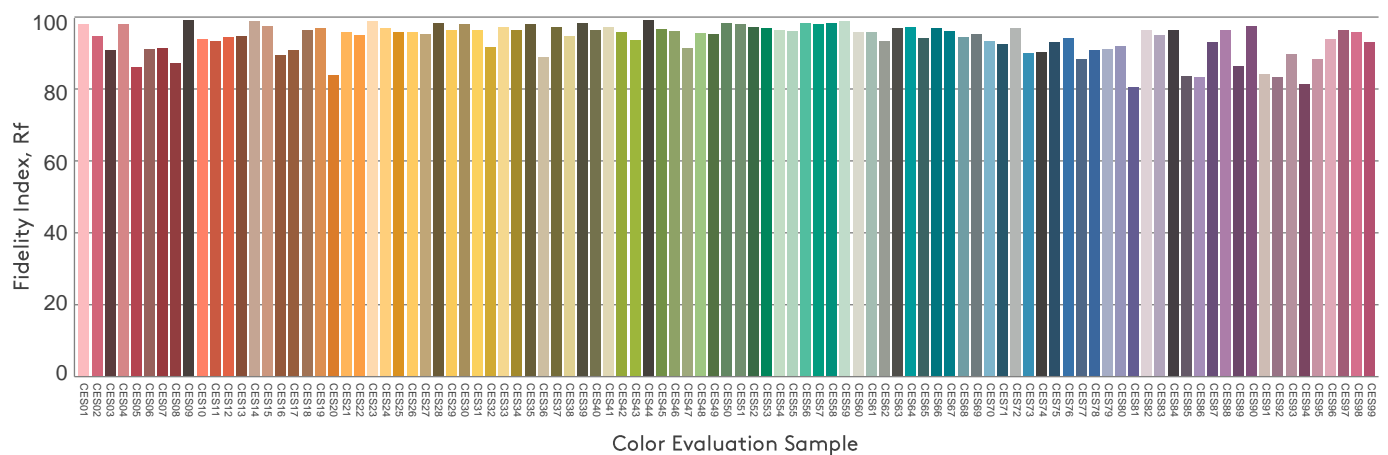
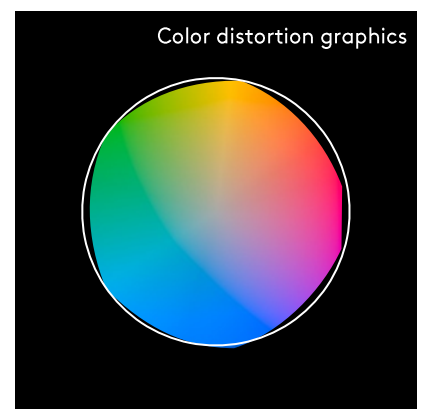
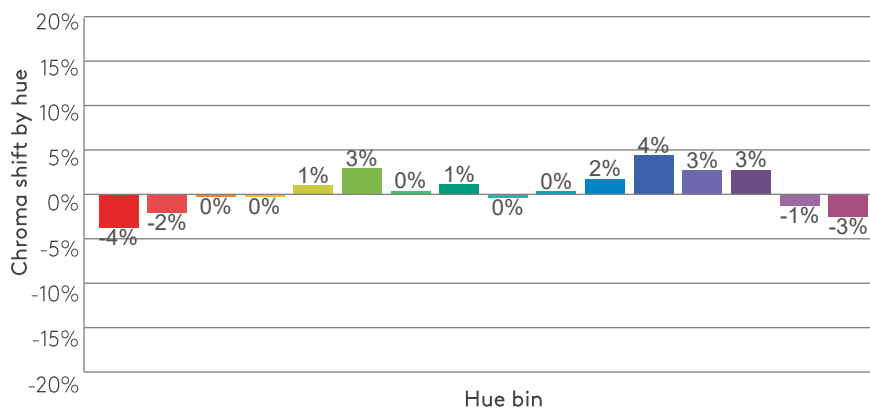
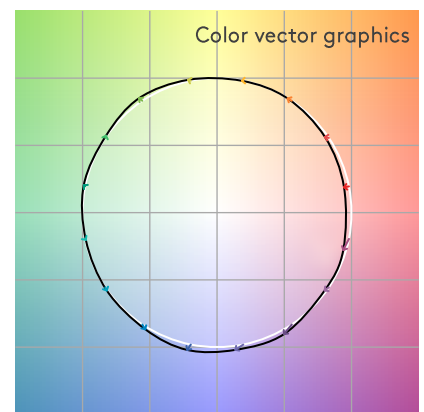
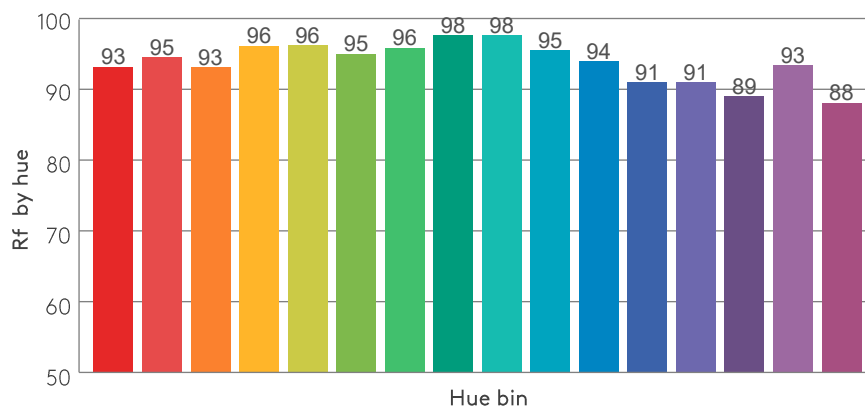
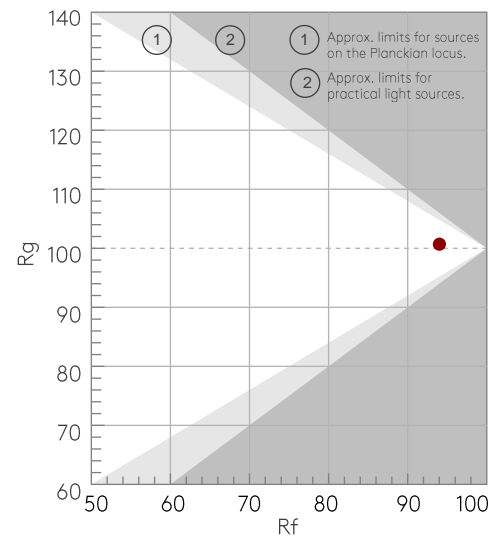
## COLOR PARAMETERS

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
2703 K	95.5	68.5	94.0	100.7	92.6	0.457	0.406	0.263	0.350	-0.0016

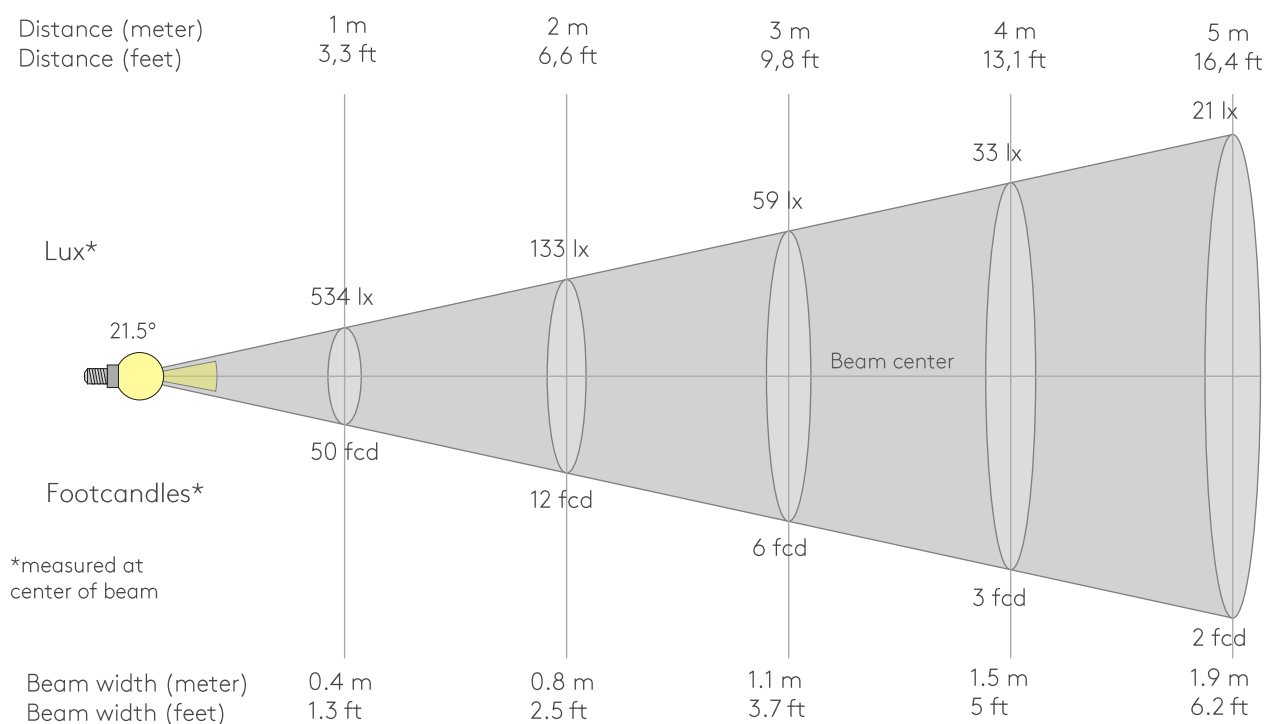
Rf 94.0  
Fidelity index Rf

Rg 100.7  
Gammut index Rg

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	93	-4%	0%
2	95	-2%	2%
3	93	0%	4%
4	96	0%	1%
5	96	1%	2%
6	95	3%	1%
7	96	0%	-2%
8	98	1%	-1%
9	98	0%	1%
10	95	0%	3%
11	94	2%	4%
12	91	4%	-2%
13	91	3%	-7%
14	89	3%	-9%
15	93	-1%	-4%
16	88	-3%	-9%



## 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
534lx	133lx	59lx	33lx	21lx	15lx	11lx	8lx	7lx	5lx	4lx	4lx	3lx	3lx	2lx	2lx	2lx	2lx	1lx	1lx
49.6fcd	12.4fcd	5.5fcd	3.1fcd	2fcd	1.4fcd	1fcd	0.8fcd	0.6fcd	0.5fcd	0.4fcd	0.3fcd	0.3fcd	0.3fcd	0.2fcd	0.2fcd	0.2fcd	0.2fcd	0.1fcd	0.1fcd

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°
534	522	484	427	360	291	229	182	147	119	95	74	57	43	32	24	18	14	10	8
100%	98%	91%	80%	67%	55%	43%	34%	28%	22%	18%	14%	11%	8%	6%	5%	3%	3%	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°
534	522	484	427	360	291	229	182	147	119	95	74	57	43	32	24	18	14	10	8
100%	98%	91%	80%	67%	55%	43%	34%	28%	22%	18%	14%	11%	8%	6%	5%	3%	3%	2%	1%

Intensities in 180° c-plane

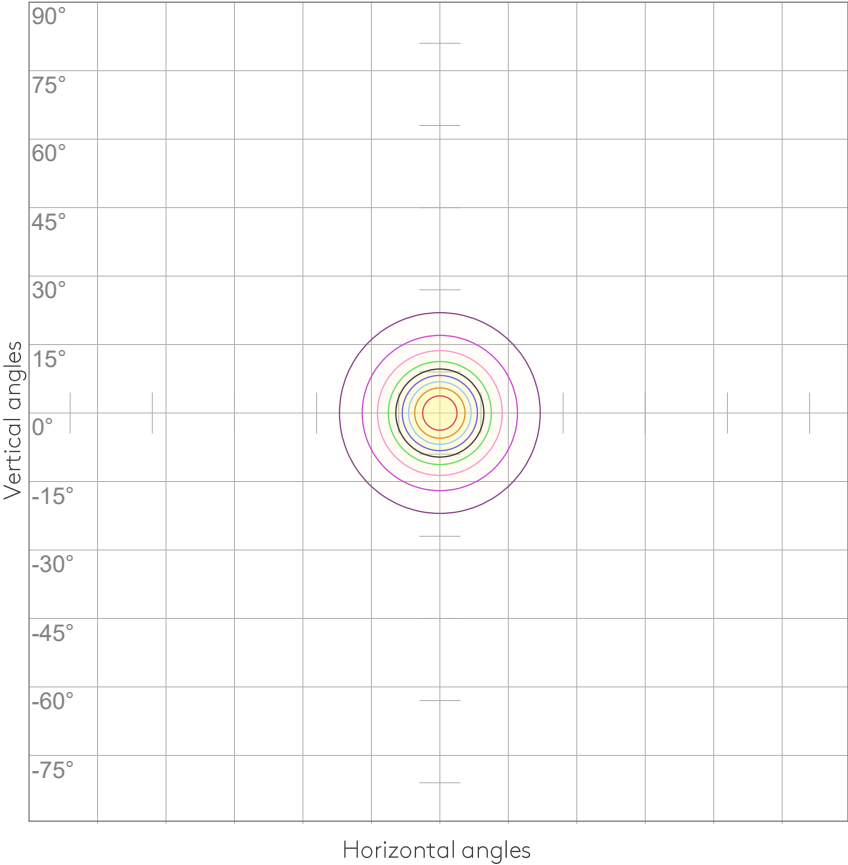
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
534	522	484	427	360	291	229	182	147	119	95	74	57	43	32	24	18	14	10	8
100%	98%	91%	80%	67%	55%	43%	34%	28%	22%	18%	14%	11%	8%	6%	5%	3%	3%	2%	1%

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°
534	522	484	427	360	291	229	182	147	119	95	74	57	43	32	24	18	14	10	8
100%	98%	91%	80%	67%	55%	43%	34%	28%	22%	18%	14%	11%	8%	6%	5%	3%	3%	2%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
21.5°	48.9°	68.2°	99.4%	98.9%

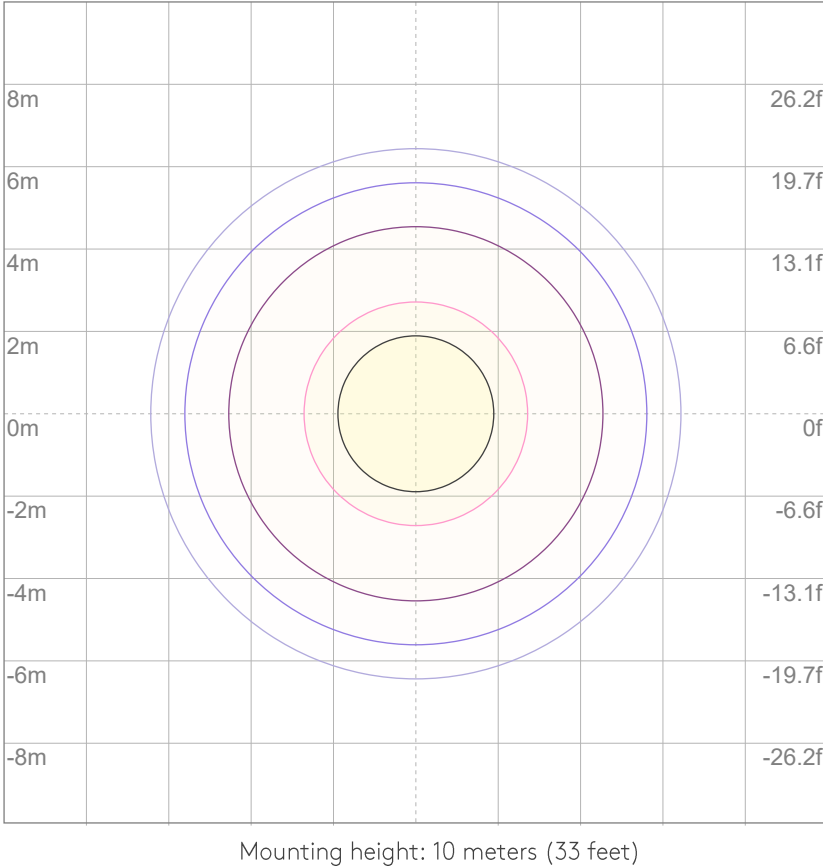
ISO CANDELA DIAGRAM



10%	53 cd
20%	107 cd
30%	160 cd
40%	213 cd
50%	267 cd
60%	320 cd
70%	374 cd
80%	427 cd
90%	480 cd

Conditions:  
Number of c-planes: 8  
Candela at center: 534 cd

ISO LUX DIAGRAM



3%	0.160 lx
5%	0.267 lx
10%	0.534 lx
30%	1.60 lx
50%	{LUX_10M50} lx

Conditions:  
Number of c-planes: 8  
Lux at center: 5.34 lx

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

## UGR

## GLARE EVALUATION ACCORDING TO UGR

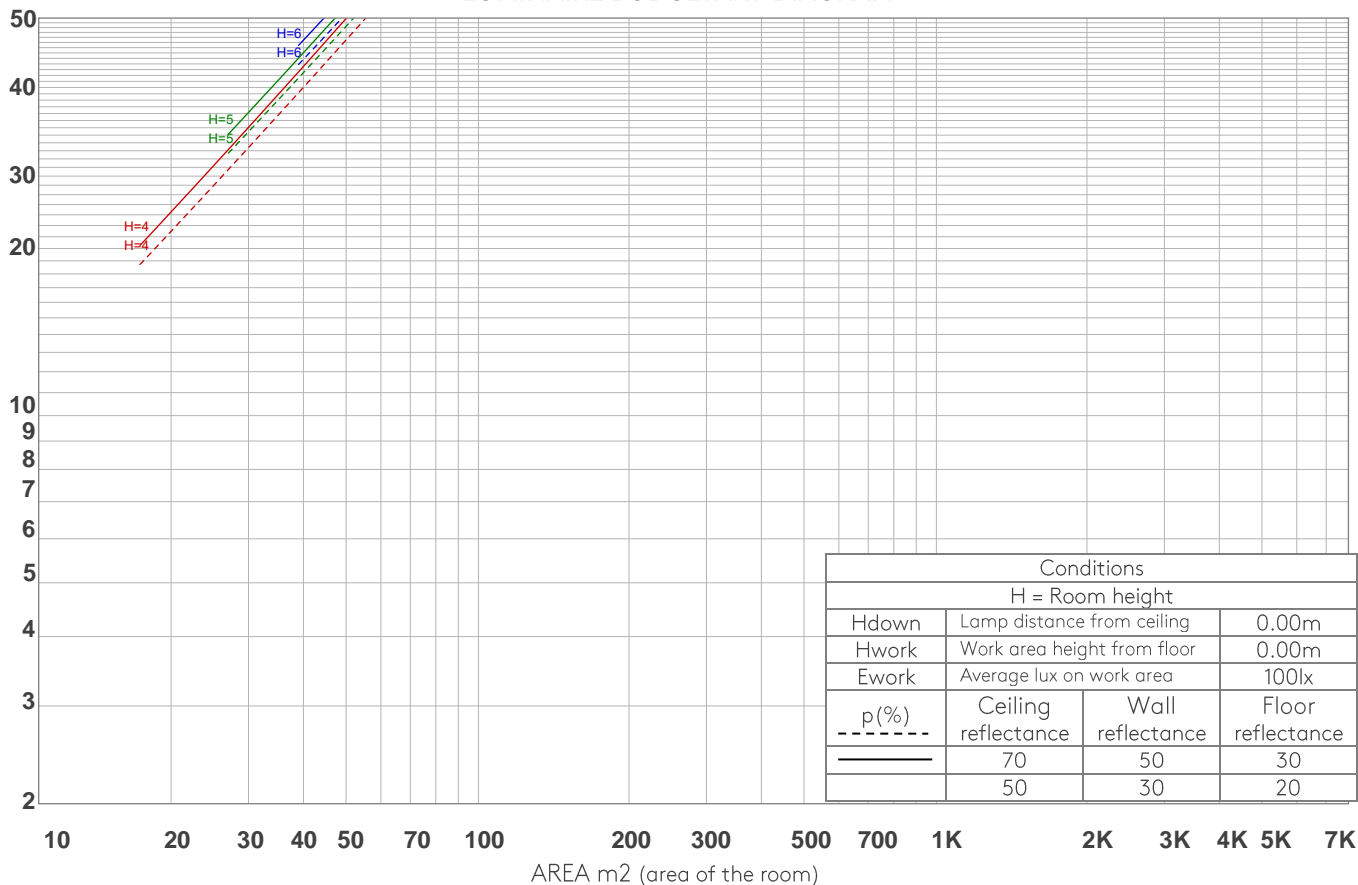
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X      Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	5.2	5.6	5.3	5.8	6.0	5.2	5.6	5.3	5.8	6.0
	3H	4.9	5.5	5.3	5.7	5.9	4.9	5.5	5.3	5.7	5.9
	4H	4.8	5.4	5.2	5.6	5.9	4.8	5.4	5.2	5.6	5.9
	6H	4.8	5.3	5.1	5.6	5.9	4.8	5.3	5.1	5.6	5.9
	8H	4.8	5.2	5.1	5.5	5.9	4.8	5.2	5.1	5.5	5.9
	12H	4.7	5.1	5.1	5.5	5.9	4.7	5.1	5.1	5.5	5.9
4H	2H	4.8	5.4	5.2	5.6	5.9	4.8	5.4	5.2	5.6	5.9
	3H	4.7	5.1	5.1	5.5	5.9	4.7	5.1	5.1	5.5	5.9
	4H	4.6	5.0	5.0	5.4	5.9	4.6	5.0	5.0	5.4	5.9
	6H	4.5	4.9	5.0	5.3	5.6	4.5	4.9	5.0	5.3	5.6
	8H	4.4	4.8	4.9	5.2	5.6	4.4	4.8	4.9	5.2	5.6
	12H	4.3	4.7	4.9	5.1	5.5	4.3	4.7	4.9	5.1	5.5
8H	4H	4.4	4.8	4.9	5.2	5.6	4.4	4.8	4.9	5.2	5.6
	6H	4.3	4.6	4.9	5.1	5.6	4.3	4.6	4.9	5.1	5.6
	8H	4.3	4.5	4.9	5.1	5.7	4.3	4.5	4.9	5.1	5.7
	12H	4.3	4.4	4.9	5.0	5.6	4.3	4.4	4.9	5.0	5.6
12H	4H	4.3	4.7	4.8	5.1	5.5	4.3	4.7	4.8	5.1	5.5
	6H	4.3	4.5	4.9	5.1	5.7	4.3	4.5	4.9	5.1	5.7
	8H	4.3	4.4	4.9	5.0	5.6	4.3	4.4	4.9	5.0	5.6
Variation of the observer position for the luminaire distance S											
S = 1.0H		5.7 / -15.2					5.7 / -15.2				
S = 1.5H		8.4 / -17.5					8.4 / -17.5				
S = 2.0H		10.4 / -18.0					10.4 / -18.0				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 118 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	100
1	115	112	110	109	112	110	109	107	106	105	104	102	101	100	99	98	97	96
2	111	107	104	101	108	105	102	100	102	100	98	99	97	96	96	95	93	92
3	107	102	98	95	105	100	97	94	98	95	93	96	93	91	93	91	90	88
4	103	97	93	90	102	96	93	90	94	91	88	92	90	87	91	88	86	85
5	100	94	89	86	98	93	89	86	91	87	85	89	86	84	88	85	83	82
6	97	90	85	82	95	89	85	82	88	84	81	87	83	81	85	83	80	79
7	94	87	82	79	92	86	82	79	85	81	78	84	81	78	83	80	78	77
8	91	84	79	76	90	83	79	76	82	78	76	81	78	75	80	77	75	74
9	88	81	77	74	87	81	76	74	80	76	73	79	75	73	78	75	73	72
10	86	78	74	71	85	78	74	71	77	74	71	77	73	71	76	73	71	70

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°
38.1 lm	46.2 lm	23.5 lm	7.78 lm	1.74 lm	0.247 lm	0.066 lm	0.044 lm	0.044 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.040 lm	0.046 lm	0.054 lm	0.056 lm	0.070 lm	0.097 lm	0.092 lm	0.062 lm	0.016 lm

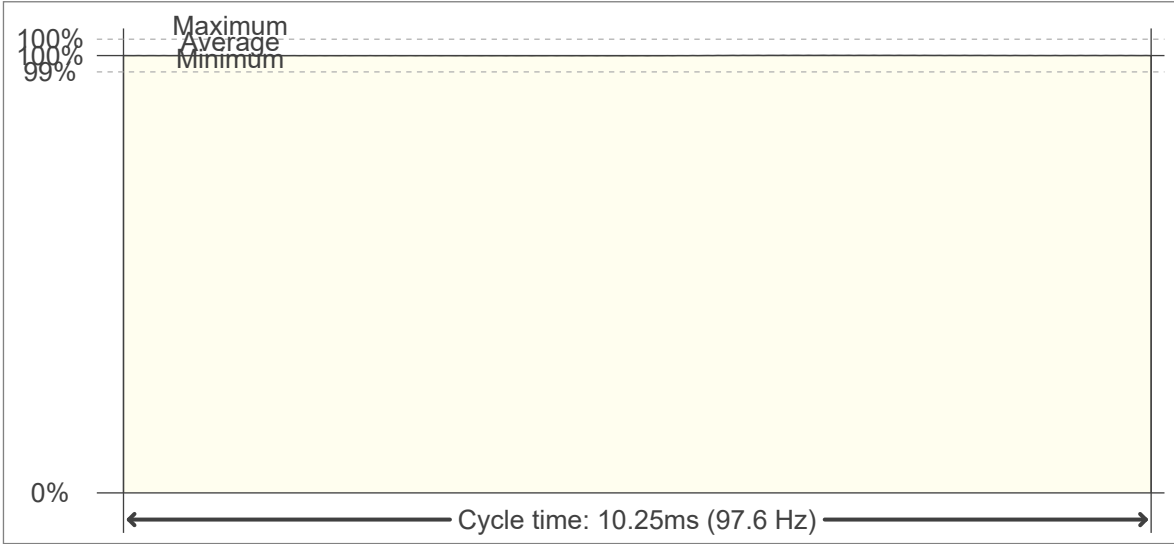


FLICKER

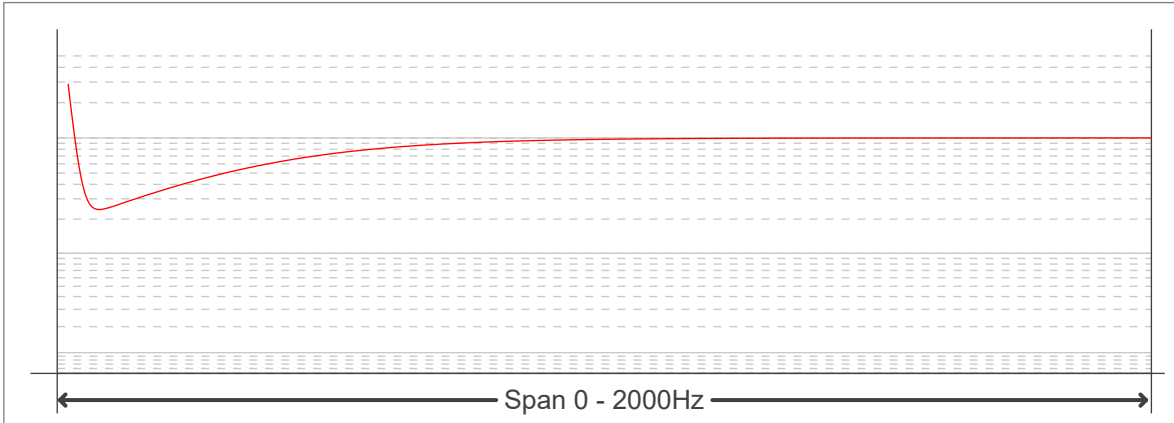
FLICKER CURVE (COMPLETE SAMPLED)



FLICKER FRAME (FRAME OF ONE FLICKER)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER)



FLICKER RESULTS:

Flicker frequency:	97.56 Hz
Flicker index:	0
Flicker percentage:	0.14 %
SVM: (Visual flicker)	0

FLICKER CONDITIONS:

Sample rate:	20000 samples/second
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