

PHOTOMETRIC TEST REPORT

RAVELLO LED READER MATT NICKEL

astro

LIGHT EFFICIENCY:

41 Lumen/Watt

LIGHT QUALITY:

CRI: 82.0

COLOR TEMPERATURE:

2708 K

OUTPUT: 185 lm

PEAK: 533 cd

POWER: 4.5 W

PF: 0.43

Tracking number: [n/a](#)

Product name:

Ravello LED Reader Matt Nickel

Item number:

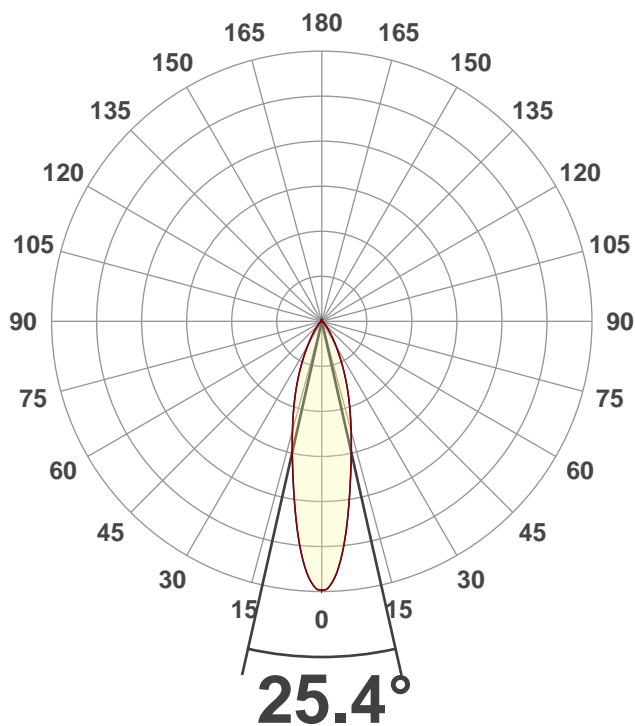
1222019

Date and time:

08/10/2019 11:49:17

Description:

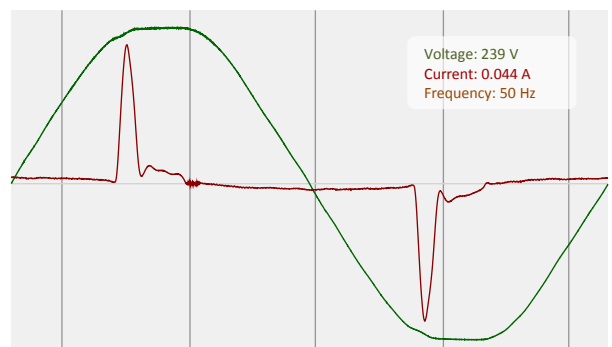
E27 Wall Light with LED Reading Head

CIE 1931
x: 0.463
y: 0.416

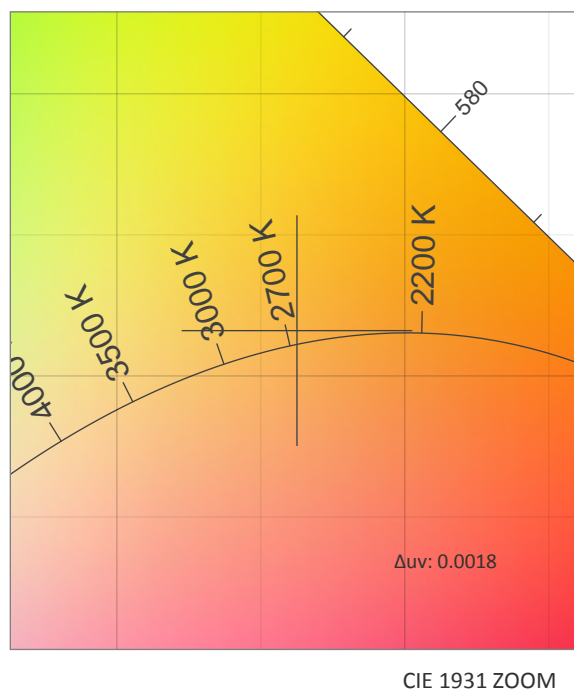
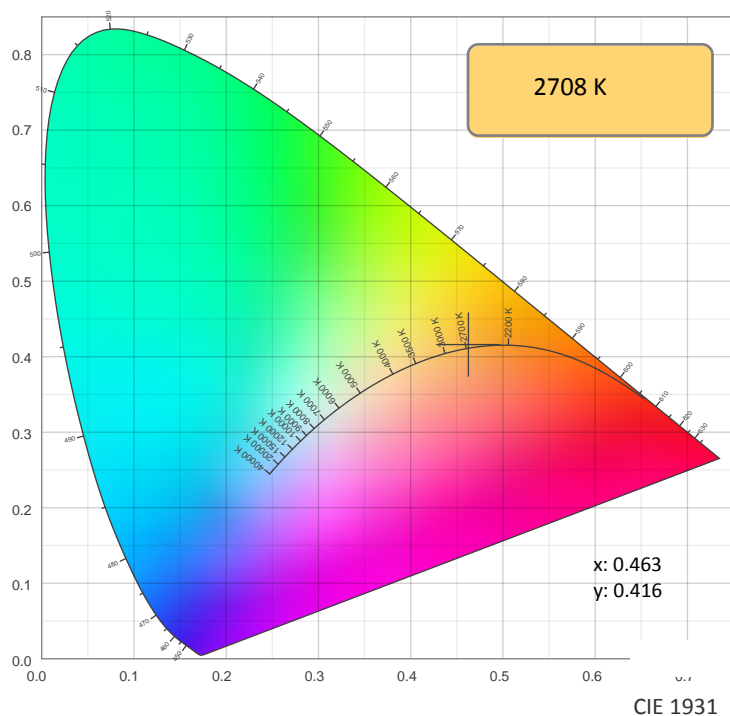
SPECTRA



POWER

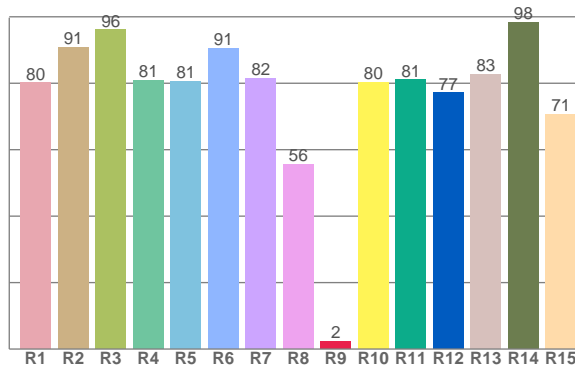
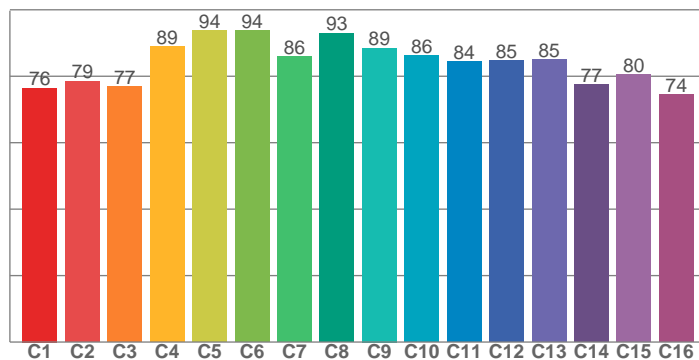


COLOR DETAILS



TM30: 84.1

CRI: 82.0 (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
80.1	90.8	96.0	80.7	80.6	90.5	81.5	55.6	2.3	80.2	81.0	77.1	82.5	98.4	70.5

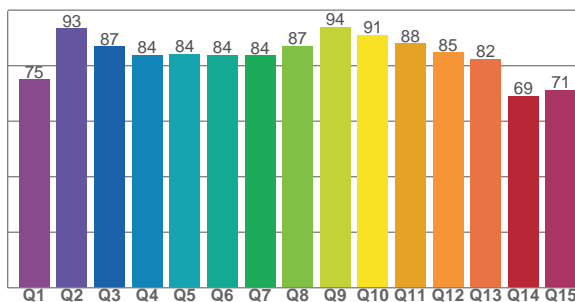
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
76.5	78.5	76.9	89.0	93.6	93.8	86.0	93.0	88.5	86.3	84.4	84.8	84.9	77.5	80.5	74.4

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
75.0	93.3	86.8	83.8	84.2	83.8	83.6	87.2	93.9	91.0	88.0	84.7	82.4	69.1	71.2

CQS: 82.2



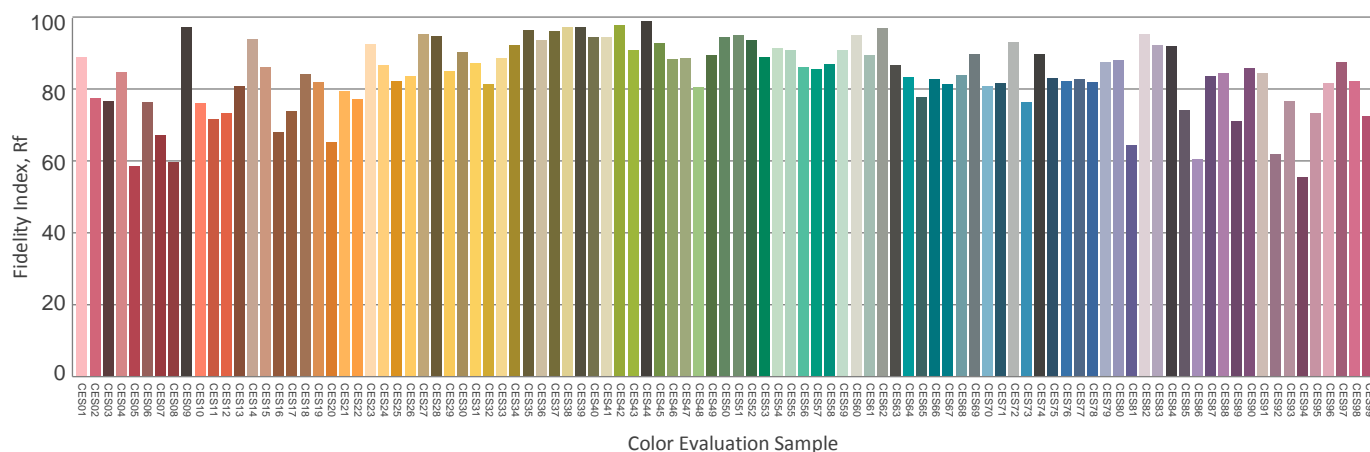
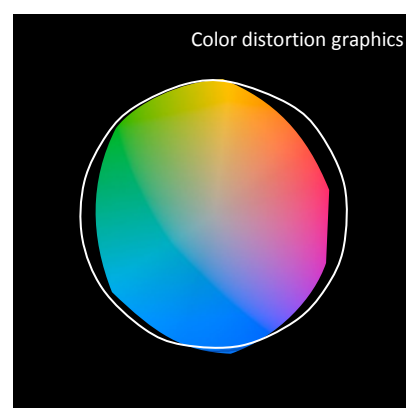
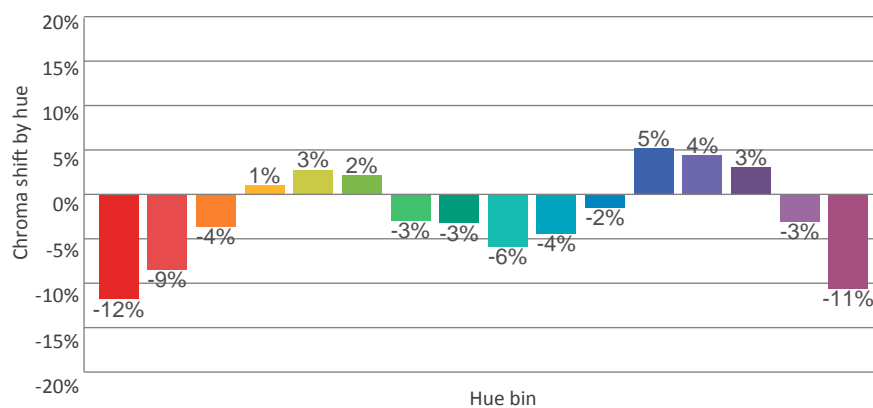
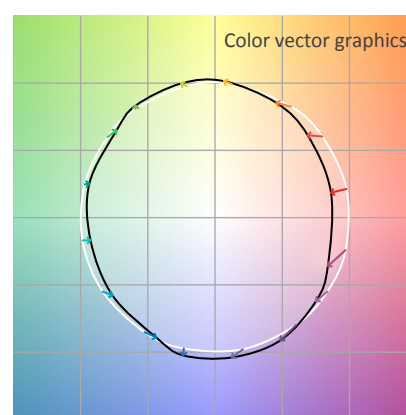
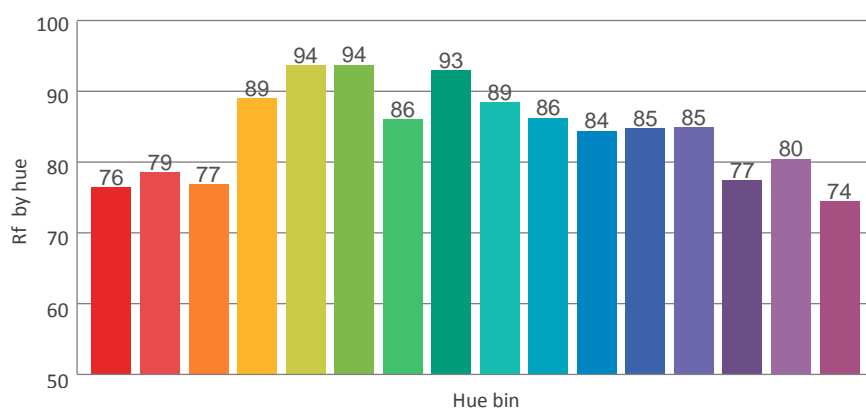
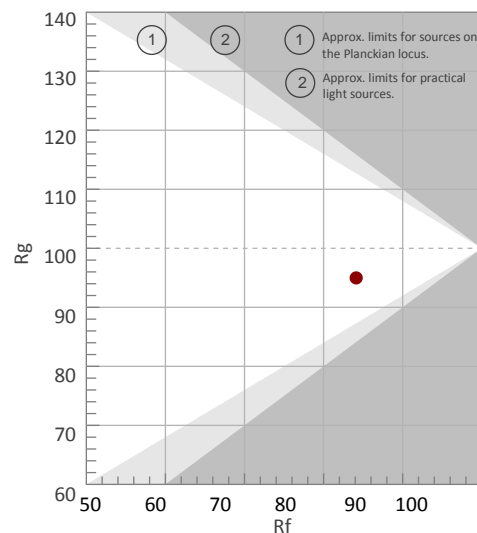
COLOR PARAMETERS

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 deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
2708 K	82.0	2.3	84.1	95.0	82.2	0.463	0.416	0.262	0.353	0.0018

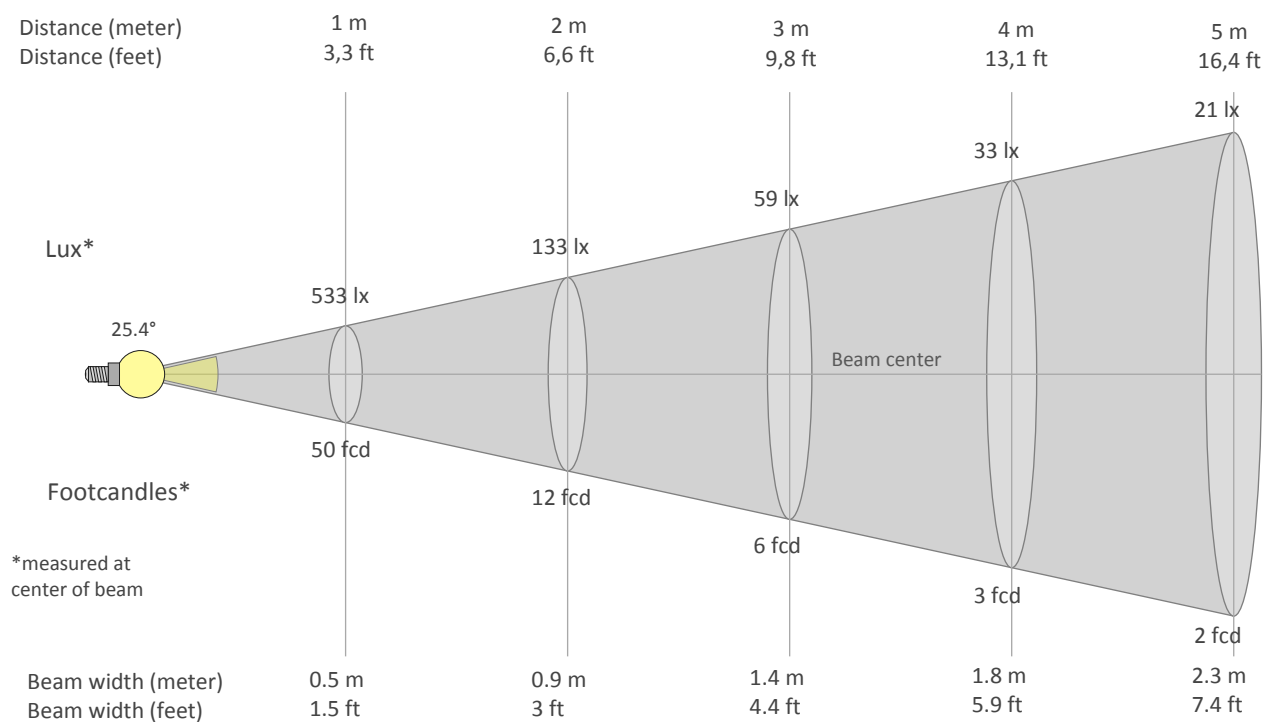
Rf 84.1
Fidelity index Rf

Rg 95.0
Gammut index Rg

Hue Bin	Graphic shifts (%)		
	R _f	Chroma	Hue
1	76	-12%	-1%
2	79	-9%	7%
3	77	-4%	10%
4	89	1%	6%
5	94	3%	4%
6	94	2%	-1%
7	86	-3%	-8%
8	93	-3%	-1%
9	89	-6%	1%
10	86	-4%	6%
11	84	-2%	9%
12	85	5%	1%
13	85	4%	-9%
14	77	3%	-16%
15	80	-3%	-10%
16	74	-11%	-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
533lx	133lx	59lx	33lx	21lx	15lx	11lx	8lx	7lx	5lx	4lx	4lx	3lx	3lx	2lx	2lx	2lx	2lx	1lx	1lx
49.5fcd	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°
533	522	487	436	379	326	280	242	209	179	153	129	107	87	70	56	44	35	28	22
100%	98%	91%	82%	71%	61%	53%	45%	39%	34%	29%	24%	20%	16%	13%	10%	8%	7%	5%	4%

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°
533	522	487	436	379	326	280	242	209	179	153	129	107	87	70	56	44	35	28	22
100%	98%	91%	82%	71%	61%	53%	45%	39%	34%	29%	24%	20%	16%	13%	10%	8%	7%	5%	4%

Intensities in 180° c-plane

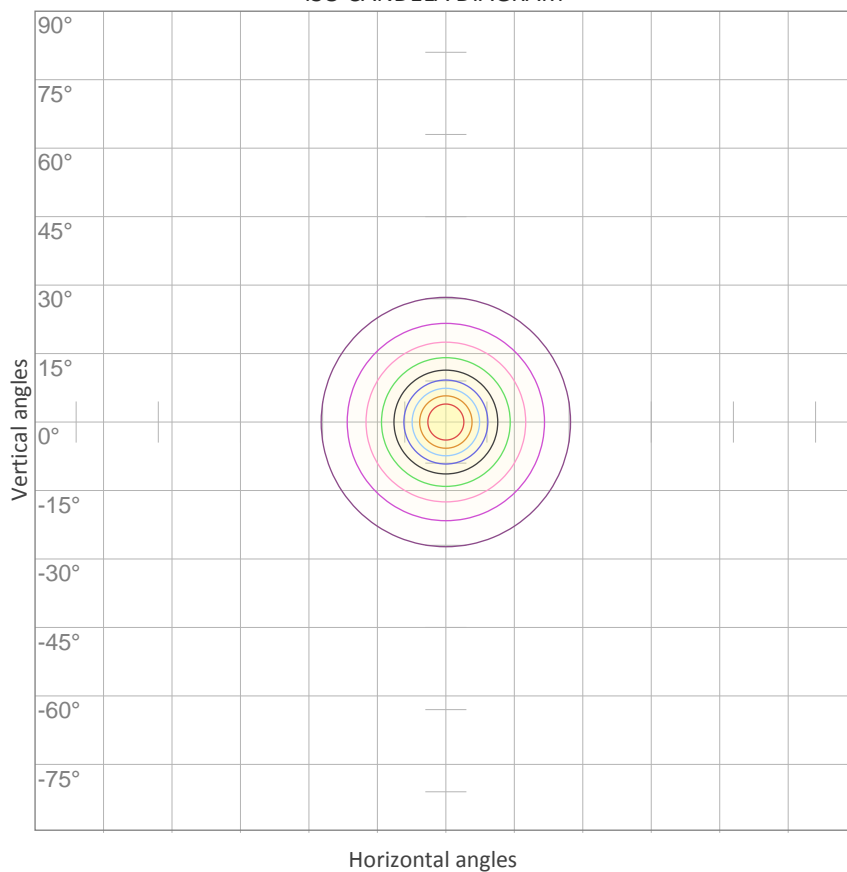
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
533	522	487	436	379	326	280	242	209	179	153	129	107	87	70	56	44	35	28	22
100%	98%	91%	82%	71%	61%	53%	45%	39%	34%	29%	24%	20%	16%	13%	10%	8%	7%	5%	4%

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°
533	522	487	436	379	326	280	242	209	179	153	129	107	87	70	56	44	35	28	22
100%	98%	91%	82%	71%	61%	53%	45%	39%	34%	29%	24%	20%	16%	13%	10%	8%	7%	5%	4%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
25.4°	60.8°	84.3°	96.7%	92.6%

ISO CANDELA DIAGRAM



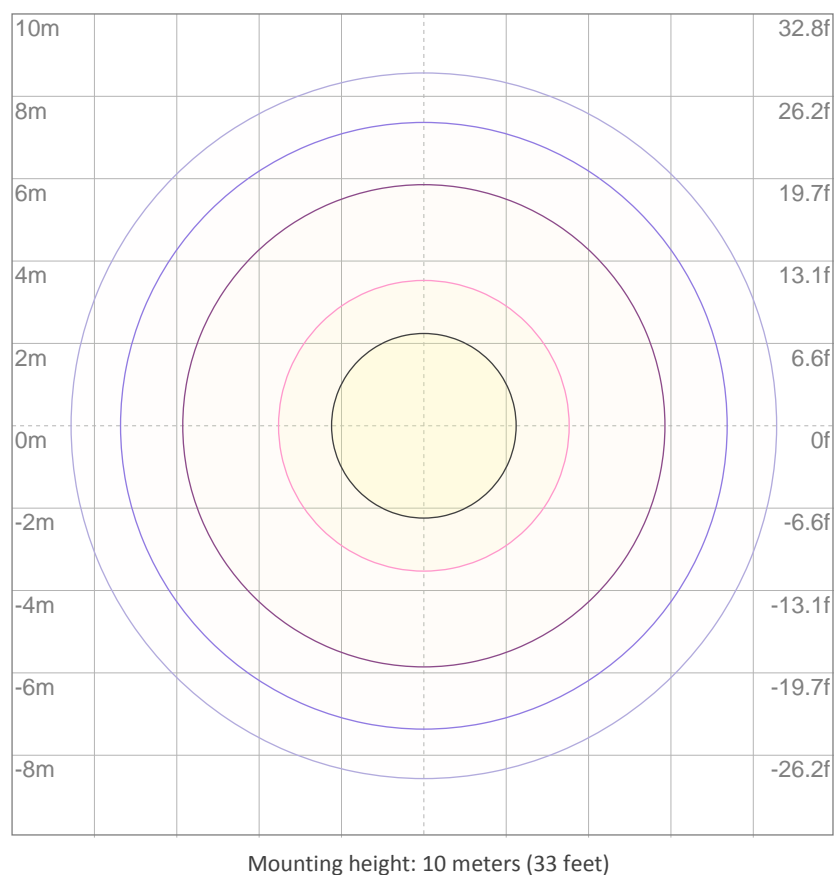
10%	53 cd
20%	107 cd
30%	160 cd
40%	213 cd
50%	267 cd
60%	320 cd
70%	373 cd
80%	426 cd
90%	480 cd

Conditions:

Number of c-planes: 8

Candela at center: 533 cd

ISO LUX DIAGRAM



3%	0.160 lx
5%	0.267 lx
10%	0.533 lx
30%	1.60 lx
50%	{LUX_10M50} lx

Conditions:

Number of c-planes: 8

Lux at center: 5.33 lx

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

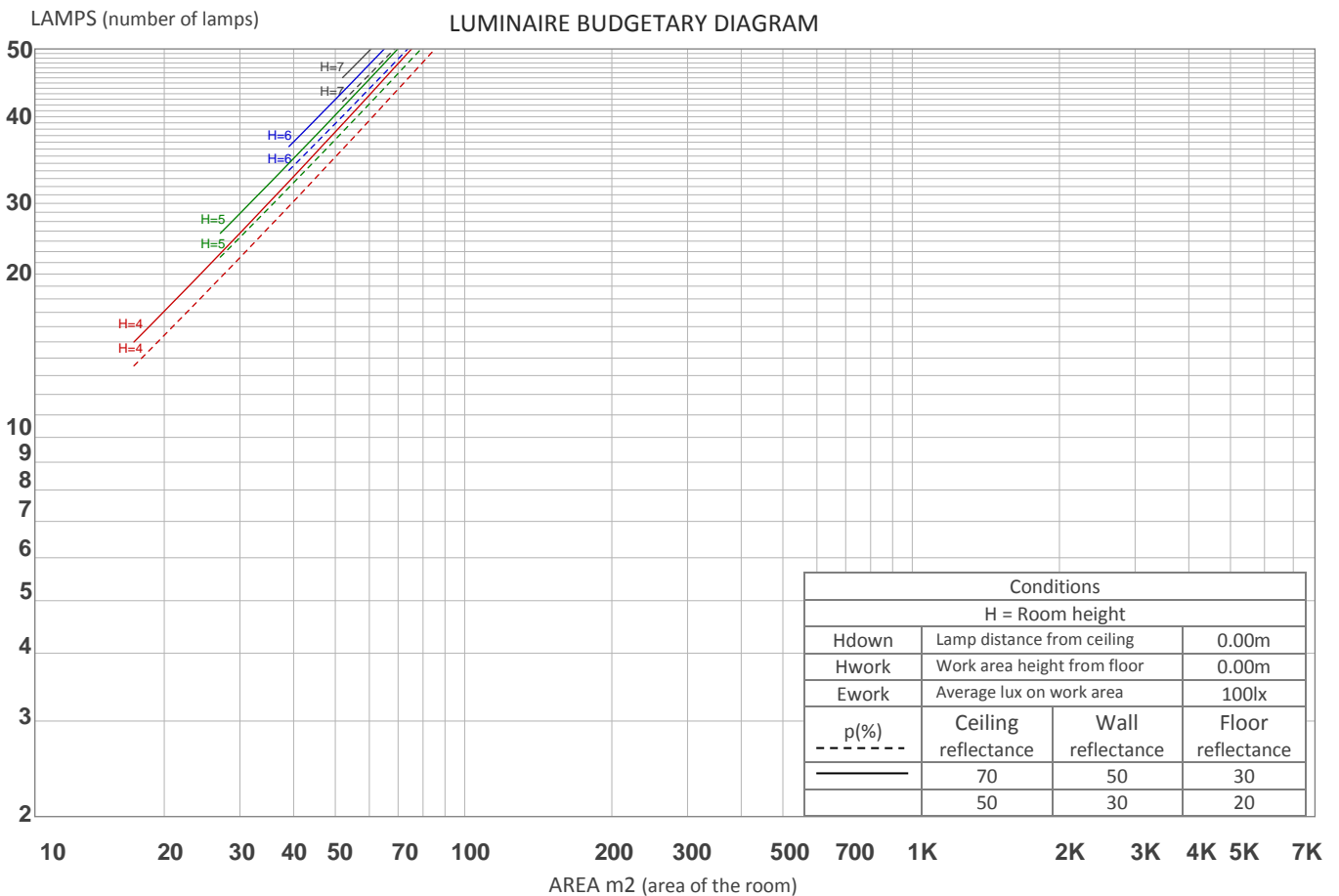
UGR

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	18.5	19.2	18.8	19.4	19.6	18.5	19.2	18.8	19.4	19.6
	3H	19.1	19.8	19.4	20.0	20.3	19.1	19.8	19.4	20.0	20.3
	4H	19.4	20.0	19.7	20.3	20.6	19.4	20.0	19.7	20.3	20.6
	6H	19.6	20.2	20.0	20.5	20.8	19.6	20.2	20.0	20.5	20.8
	8H	19.7	20.3	20.1	20.6	20.9	19.7	20.3	20.1	20.6	20.9
	12H	19.7	20.3	20.1	20.6	20.9	19.7	20.3	20.1	20.6	20.9
4H	2H	18.7	19.3	19.0	19.6	19.8	18.7	19.3	19.0	19.6	19.8
	3H	19.5	20.0	19.9	20.3	20.7	19.5	20.0	19.9	20.3	20.7
	4H	19.9	20.4	20.3	20.7	21.1	19.9	20.4	20.3	20.7	21.1
	6H	20.3	20.7	20.7	21.0	21.4	20.3	20.7	20.7	21.0	21.4
	8H	20.4	20.7	20.8	21.1	21.5	20.4	20.7	20.8	21.1	21.5
	12H	20.5	20.8	20.9	21.2	21.6	20.5	20.8	20.9	21.2	21.6
8H	4H	20.1	20.4	20.5	20.8	21.2	20.1	20.4	20.5	20.8	21.2
	6H	20.5	20.8	21.0	21.2	21.7	20.5	20.8	21.0	21.2	21.7
	8H	20.7	20.9	21.2	21.4	21.8	20.7	20.9	21.2	21.4	21.8
	12H	20.8	21.0	21.3	21.5	22.0	20.8	21.0	21.3	21.5	22.0
12H	4H	20.1	20.4	20.5	20.8	21.2	20.1	20.4	20.5	20.8	21.2
	6H	20.6	20.8	21.0	21.2	21.7	20.6	20.8	21.0	21.2	21.7
	8H	20.7	20.9	21.2	21.4	21.9	20.7	20.9	21.2	21.4	21.9
Variation of the observer position for the luminaire distance S											
S = 1.0H		+1.7 / -1.0					+1.7 / -1.0				
S = 1.5H		+3.4 / -1.4					+3.4 / -1.4				
S = 2.0H		+5.0 / -1.7					+5.0 / -1.7				
Standard table		BK03					BK03				
Correction summand		2.6					2.6				
Corrected glare indices referring to 185 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	111	108	106	111	109	106	105	105	103	101	101	99	98	97	96	95	93
2	108	104	100	97	106	102	98	95	99	96	93	96	93	91	93	91	89	88
3	103	97	93	89	101	96	92	88	93	90	87	91	88	85	89	86	84	83
4	99	92	87	83	97	91	86	82	89	85	81	87	83	80	85	82	79	78
5	95	87	82	78	93	86	81	77	84	80	77	83	79	76	81	78	75	74
6	91	83	77	73	89	82	77	73	80	76	73	79	75	72	78	74	72	70
7	87	79	73	70	86	78	73	69	77	72	69	76	72	69	75	71	68	67
8	84	75	70	66	83	75	70	66	74	69	66	73	68	65	72	68	65	64
9	81	72	67	63	80	71	66	63	71	66	63	70	66	63	69	65	62	61
10	78	69	64	60	77	69	64	60	68	63	60	67	63	60	66	63	60	59



ZONAL LUMEN SUMMARY

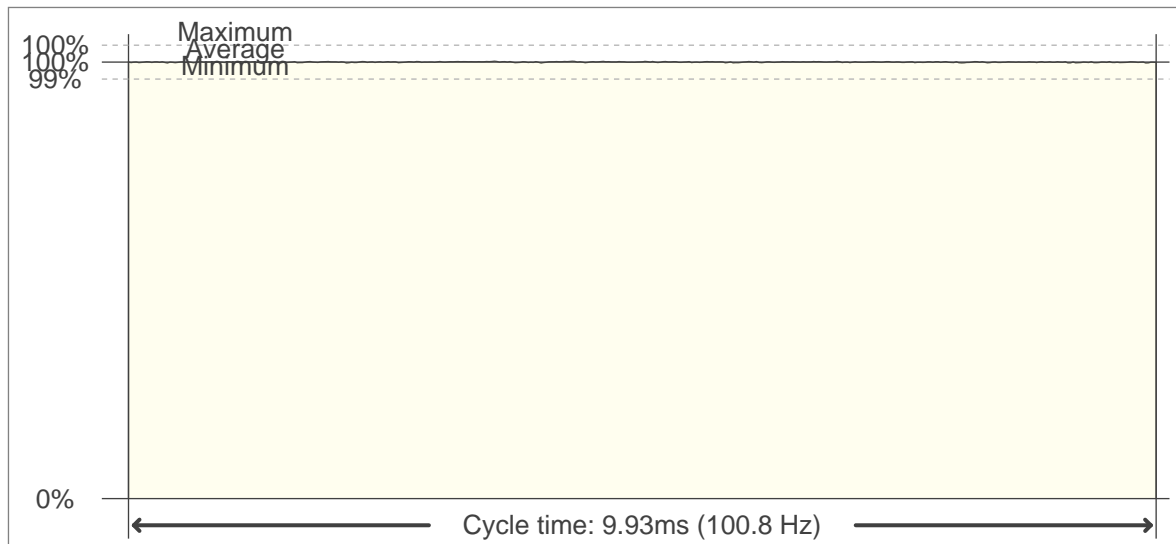
0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
39.5 lm	62.5 lm	44.5 lm	20.3 lm	7.99 lm	4.41 lm	2.95 lm	1.67 lm	0.458 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.097 lm	0.101 lm	0.105 lm	0.126 lm	0.159 lm	0.176 lm	0.169 lm	0.109 lm	0.033 lm

FLICKER

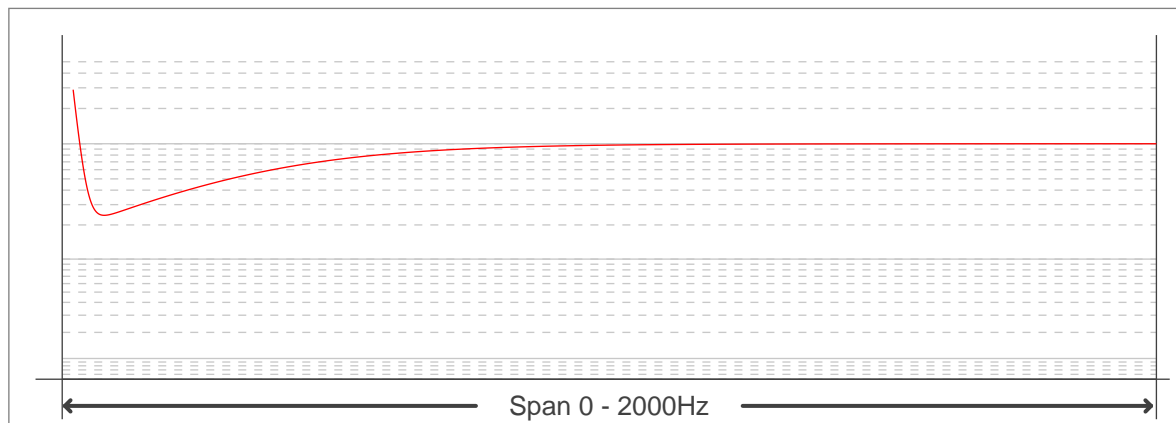
FLICKER CURVE (COMPLETE SAMPLED FLICKER)



FLICKER FRAME (FRAME OF ONE FLICKER PERIOD)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER CURVE)



FLICKER RESULTS:

Flicker frequency:	100.76 Hz
Flicker index:	0
Flicker percentage:	0.29 %
SVM: (Visual flicker)	0

FLICKER CONDITIONS:

Sample rate:	40000 samples/second
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