

PHOTOMETRIC TEST REPORT

CROMARTY 100 LED BRUSHED
STAINLESS STEEL

astro

LIGHT EFFICIENCY:

57 Lumen/Watt

LIGHT QUALITY:

CRI: 91.9

COLOR TEMPERATURE:

3060 K

OUTPUT: 489 lm

PEAK: 2484 cd

POWER: 8.5 W

PF: 0.91

Tracking number: [n/a](#)

Product name:

Cromarty 100 LED Brushed Stainless Steel

Item number:

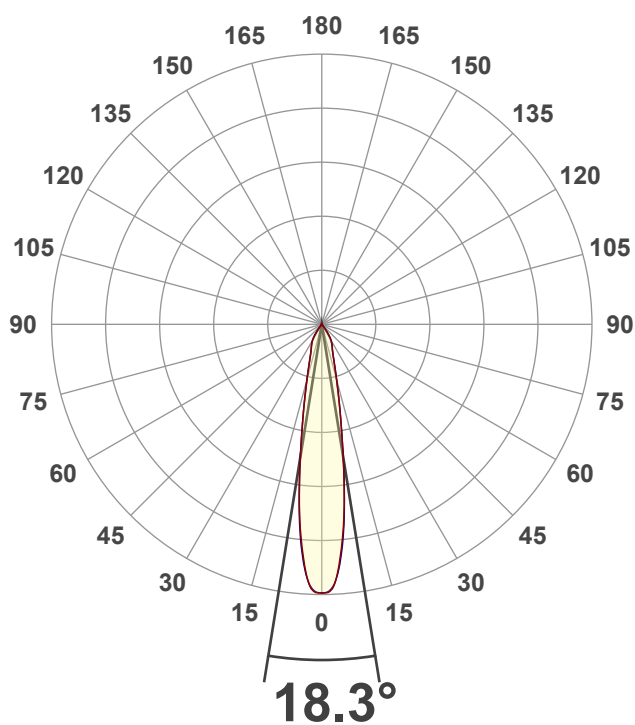
1378005

Date and time:

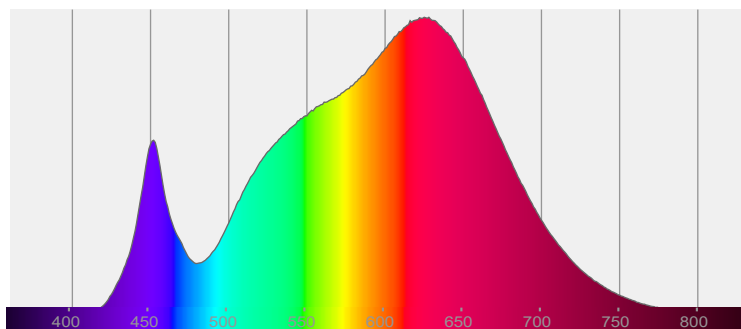
12/05/2022 11:12:32

Description:

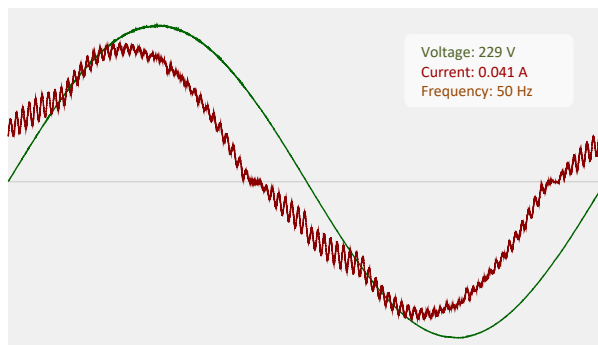
IP67 Recessed Adjustable Ground light

CIE 1931
x: 0.430
y: 0.397

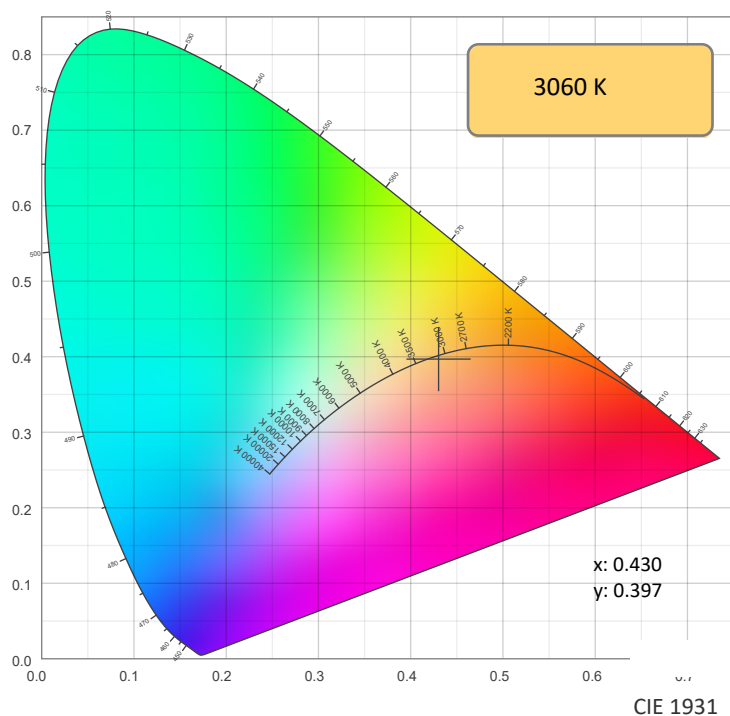
SPECTRA



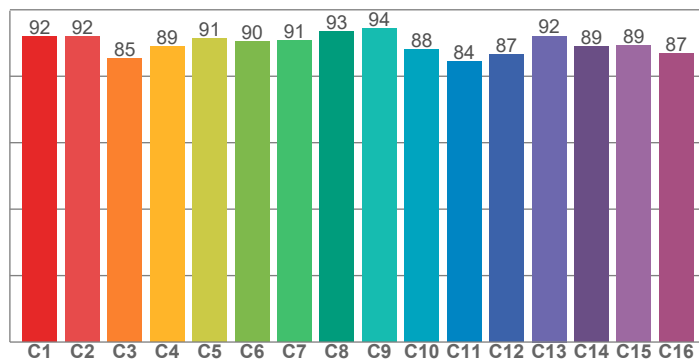
POWER



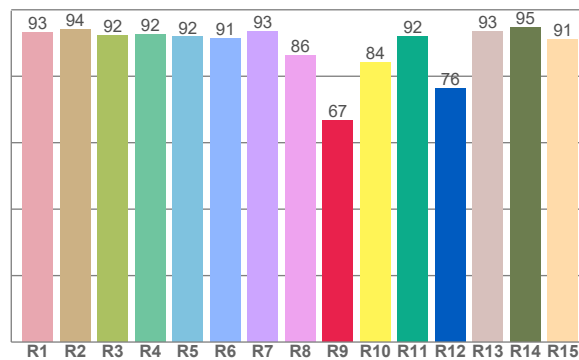
COLOR DETAILS



TM30: 89.8



CRI: 91.9 (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
93.3	94.1	92.3	92.5	91.8	91.3	93.4	86.3	66.8	84.0	92.0	76.3	93.4	94.7	91.1

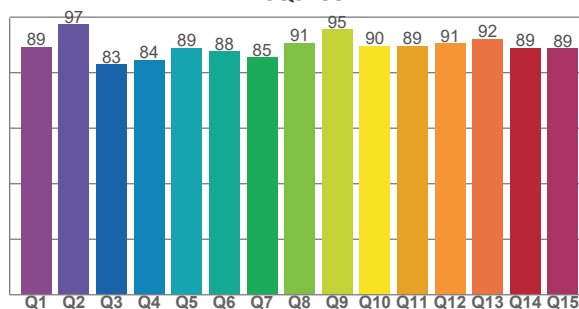
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
91.9	92.0	85.4	89.0	91.4	90.4	90.7	93.4	94.2	88.1	84.4	86.5	92.1	89.0	89.3	86.9

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89.3	97.3	82.9	84.5	88.9	87.6	85.4	90.6	95.5	89.7	89.5	90.5	92.1	88.8	88.6

CQS: 88.7



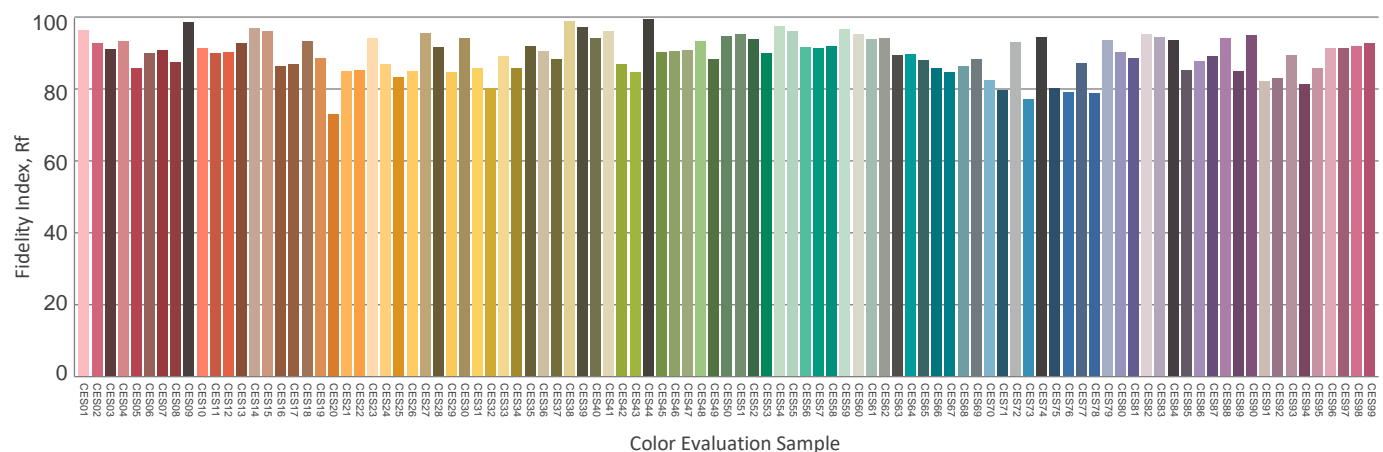
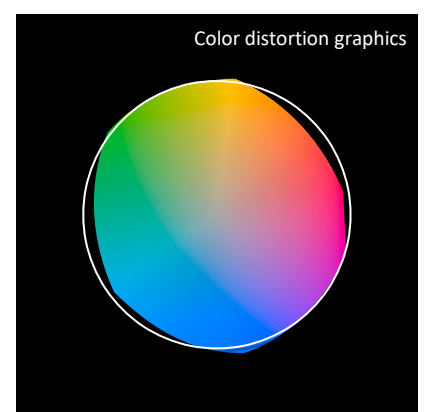
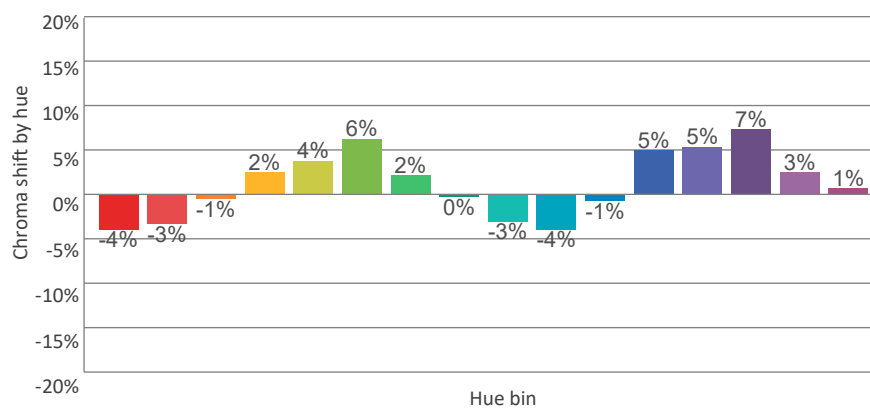
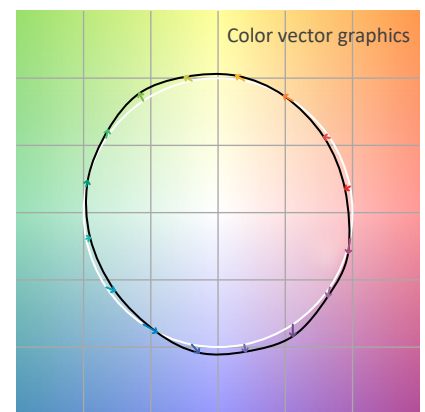
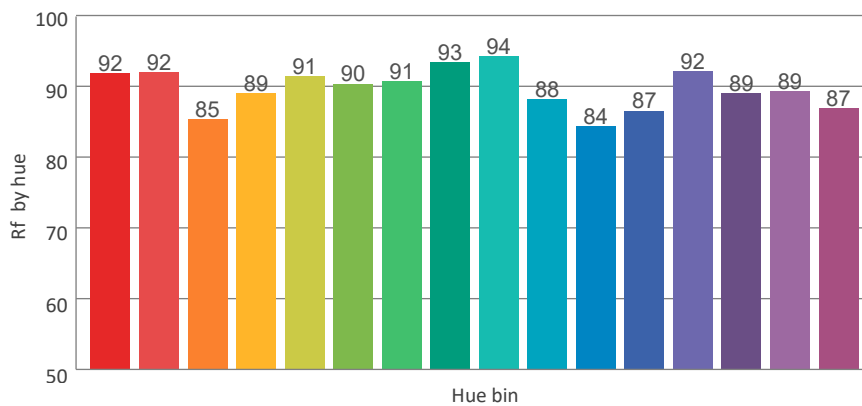
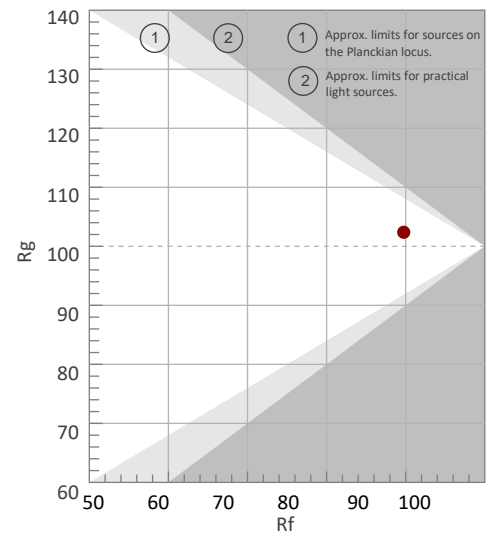
COLOR PARAMETERS

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
3060 K	91.9	66.8	89.8	102.4	88.7	0.430	0.397	0.249	0.345	-0.0020

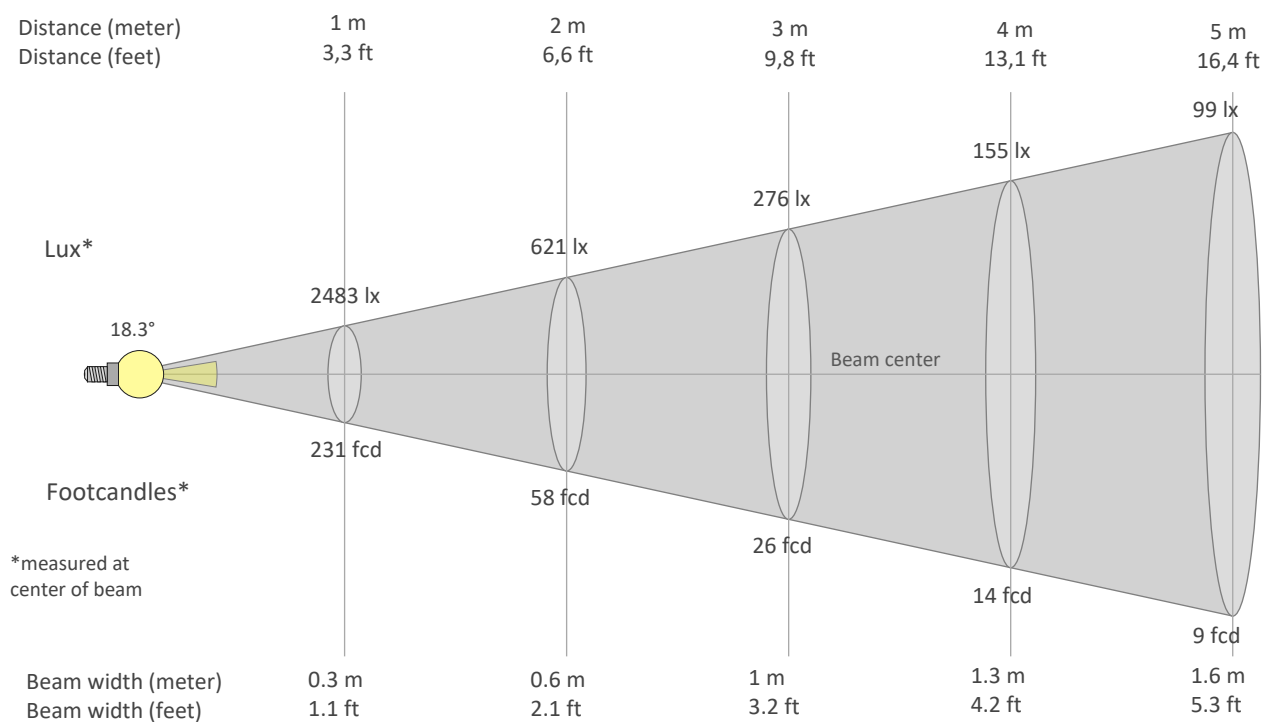
Rf 89.8
Fidelity index Rf

Rg 102.4
Gammut index Rg

Hue Bin	Graphic shifts (%)		
	R _f	Chroma	Hue
1	92	-4%	-1%
2	92	-3%	3%
3	85	-1%	8%
4	89	2%	7%
5	91	4%	5%
6	90	6%	-1%
7	91	2%	-5%
8	93	0%	-4%
9	94	-3%	0%
10	88	-4%	6%
11	84	-1%	11%
12	87	5%	6%
13	92	5%	0%
14	89	7%	-5%
15	89	3%	-7%
16	87	1%	-11%



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
2483lx	621lx	276lx	155lx	99lx	69lx	51lx	39lx	31lx	25lx	21lx	17lx	15lx	13lx	11lx	10lx	9lx	8lx	7lx	6lx
230.7fcd	57.7fcd	25.6fcd	14.4fcd	9.2fcd	6.4fcd	4.7fcd	3.6fcd	2.8fcd	2.3fcd	1.9fcd	1.6fcd	1.4fcd	1.2fcd	1fcd	0.9fcd	0.8fcd	0.7fcd	0.6fcd	0.6fcd

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°
2483	2455	2243	1897	1484	1093	808	606	468	373	309	266	238	216	194	171	139	95	49	23
100%	99%	90%	76%	60%	44%	33%	24%	19%	15%	12%	11%	10%	9%	8%	7%	6%	4%	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°
2483	2448	2263	1923	1490	1093	808	606	467	372	308	266	239	216	193	170	137	100	59	30
100%	99%	91%	77%	60%	44%	33%	24%	19%	15%	12%	11%	10%	9%	8%	7%	5%	4%	2%	1%

Intensities in 180° c-plane

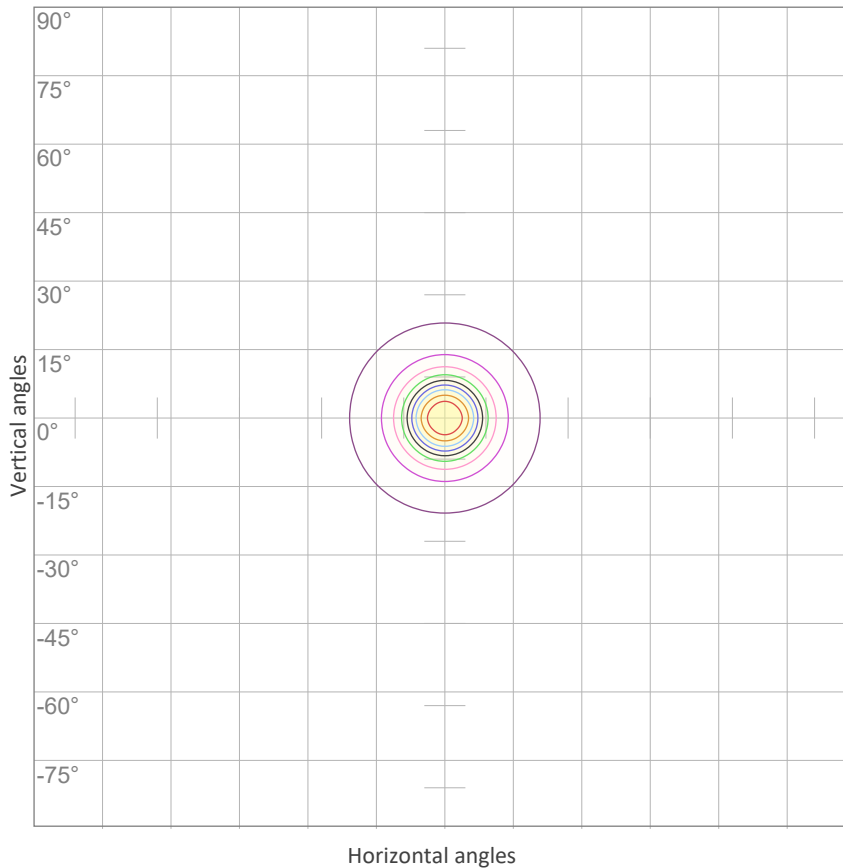
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
2483	2455	2243	1897	1484	1093	808	606	468	373	309	266	238	216	194	171	139	95	49	23
100%	99%	90%	76%	60%	44%	33%	24%	19%	15%	12%	11%	10%	9%	8%	7%	6%	4%	2%	1%

Intensities in 270° c-plane

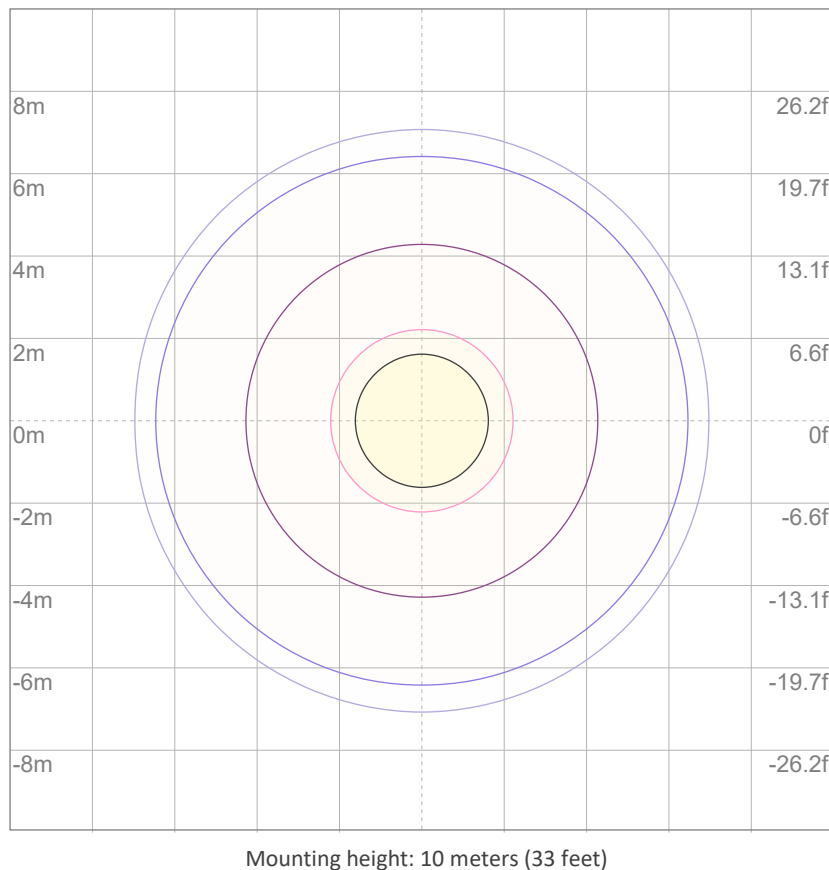
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
2483	2448	2263	1923	1490	1093	808	606	467	372	308	266	239	216	193	170	137	100	59	30
100%	99%	91%	77%	60%	44%	33%	24%	19%	15%	12%	11%	10%	9%	8%	7%	5%	4%	2%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
18.3°	46.4°	71.4°	98.9%	97.4%

ISO CANDELA DIAGRAM



ISO LUX DIAGRAM



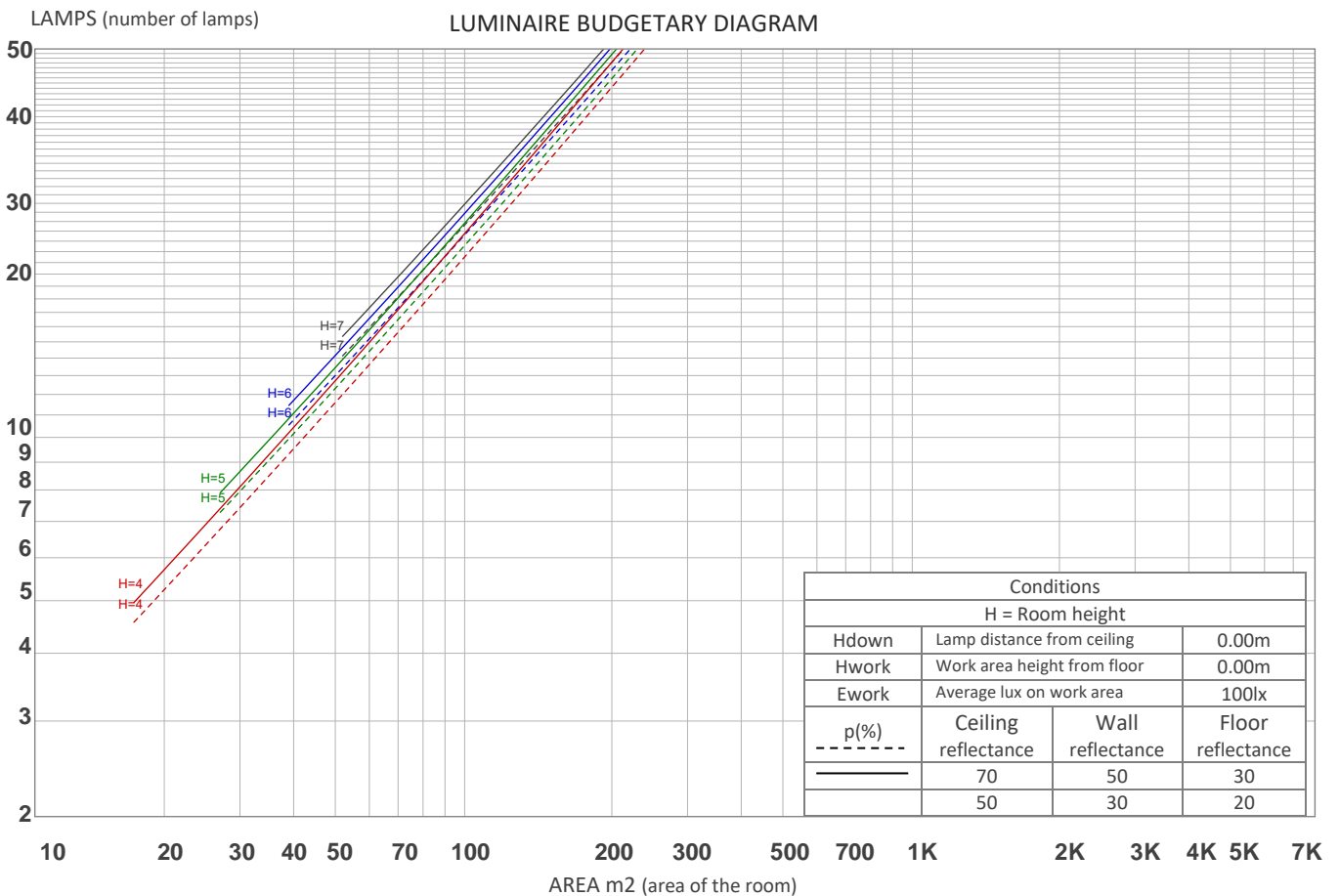
UGR

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	13.0	13.4	13.1	13.7	13.9	13.0	13.5	13.1	13.7	13.9
	3H	12.7	13.3	13.1	13.5	13.7	12.7	13.3	13.1	13.5	13.7
	4H	12.6	13.2	13.0	13.4	13.7	12.6	13.2	13.0	13.4	13.7
	6H	12.6	13.1	12.9	13.4	13.8	12.6	13.1	12.9	13.4	13.8
	8H	12.5	13.0	12.9	13.4	13.7	12.5	13.0	12.9	13.4	13.7
	12H	12.5	13.0	12.8	13.3	13.7	12.5	13.0	12.8	13.3	13.7
4H	2H	12.6	13.2	13.0	13.4	13.7	12.6	13.2	13.0	13.4	13.7
	3H	12.5	13.0	12.9	13.3	13.8	12.5	13.0	12.9	13.3	13.8
	4H	12.4	12.8	12.8	13.2	13.7	12.4	12.8	12.8	13.2	13.7
	6H	12.3	12.8	12.8	13.1	13.5	12.3	12.8	12.8	13.1	13.5
	8H	12.2	12.7	12.7	13.0	13.4	12.2	12.7	12.7	13.0	13.4
	12H	12.2	12.5	12.7	12.9	13.4	12.2	12.5	12.7	12.9	13.4
8H	4H	12.2	12.7	12.7	13.0	13.4	12.2	12.7	12.7	13.0	13.4
	6H	12.2	12.4	12.7	12.9	13.4	12.2	12.4	12.7	12.9	13.4
	8H	12.2	12.4	12.7	12.9	13.5	12.2	12.4	12.7	12.9	13.5
	12H	12.1	12.3	12.7	12.8	13.4	12.1	12.3	12.7	12.8	13.4
12H	4H	12.2	12.5	12.7	12.9	13.4	12.2	12.5	12.7	12.9	13.4
	6H	12.2	12.4	12.7	12.9	13.5	12.2	12.4	12.7	12.9	13.5
	8H	12.1	12.3	12.7	12.8	13.4	12.1	12.3	12.7	12.8	13.4
Variation of the observer position for the luminaire distance S											
S = 1.0H		6.4 / -9.8					6.4 / -9.8				
S = 1.5H		9.2 / -13.9					9.1 / -13.9				
S = 2.0H		11.2 / -15.8					11.1 / -15.9				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 489 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	101	101	101	99
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95
2	110	106	103	100	108	104	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	96	92	89	101	95	91	88	93	90	87	91	88	86	89	87	85	84
5	99	92	88	84	97	91	87	84	90	86	83	88	85	82	86	84	82	80
6	95	88	84	81	94	88	83	80	86	83	80	85	82	79	84	81	79	77
7	92	85	80	77	91	84	80	77	83	79	77	82	79	76	81	78	76	75
8	89	82	77	74	88	82	77	74	80	77	74	80	76	74	79	76	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

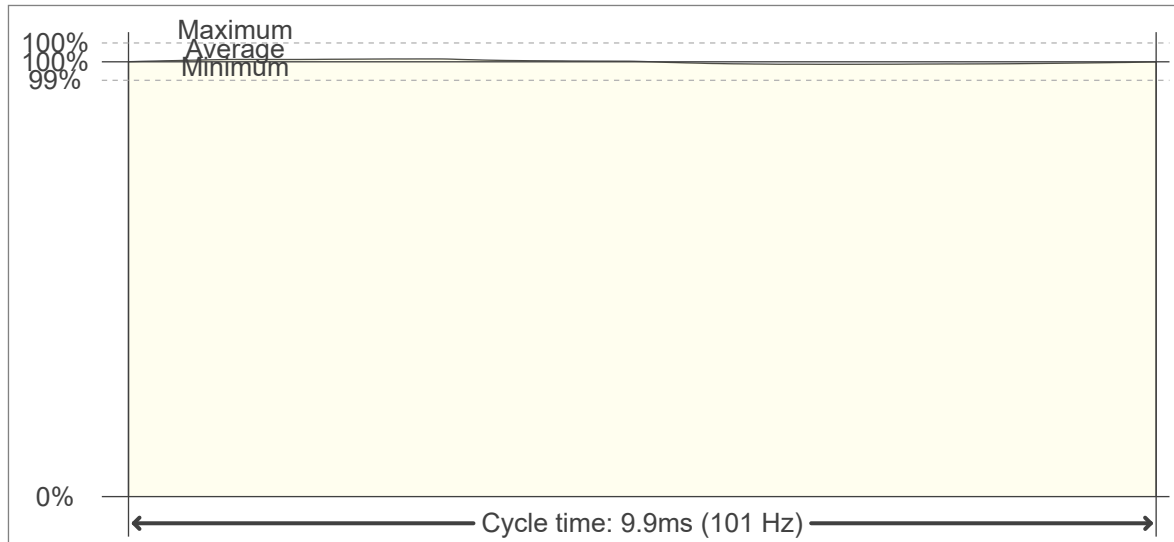
0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
165 lm	154 lm	105 lm	49.2 lm	7.02 lm	4.59 lm	1.43 lm	0.450 lm	0.239 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.193 lm	0.223 lm	0.316 lm	0.365 lm	0.488 lm	0.543 lm	0.518 lm	0.349 lm	0.105 lm

FLICKER

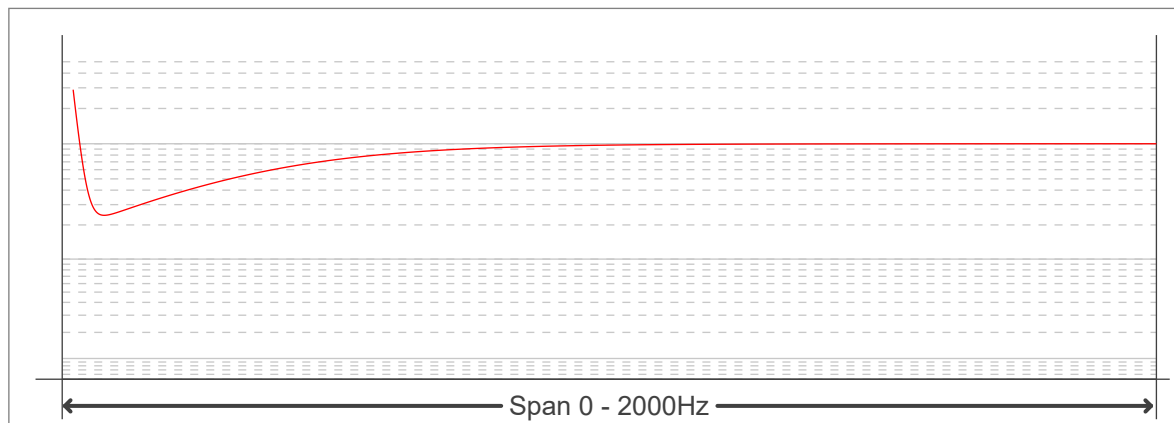
FLICKER CURVE (COMPLETE SAMPLED FLICKER)



FLICKER FRAME (FRAME OF ONE FLICKER PERIOD)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER CURVE)



FLICKER RESULTS:

Flicker frequency:	101.01 Hz
Flicker index:	0
Flicker percentage:	0.65 %
SVM: (Visual flicker)	0.02

FLICKER CONDITIONS:

Sample rate:	20000 samples/second
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