

PHOTOMETRIC TEST REPORT

CROMARTY 120 LED

astro

LIGHT EFFICIENCY:

73 Lumen/Watt

LIGHT QUALITY:

CRI: 92.0

COLOR TEMPERATURE:

3072 K

OUTPUT: 1115 lm

PEAK: 5940 cd

POWER: 15.2 W

PF: 0.96

Tracking number: [n/a](#)

Product name:

Cromarty 120 LED

Item number:

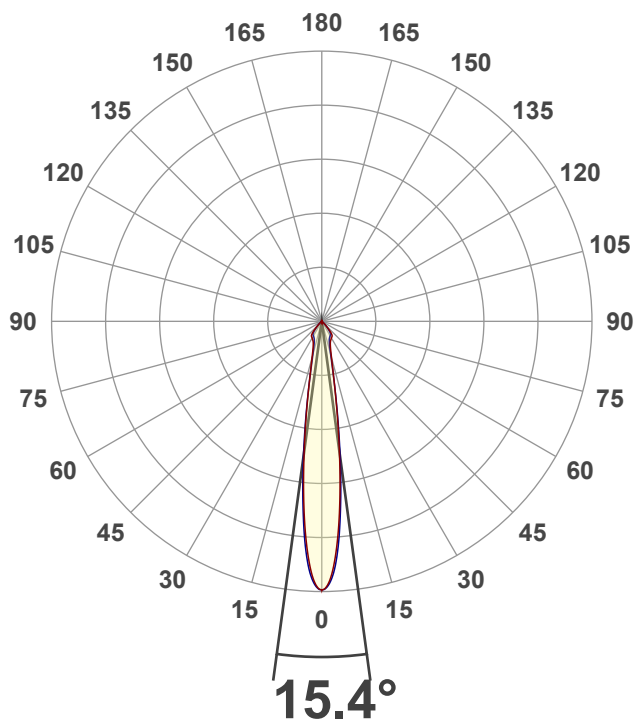
1378004

Date and time:

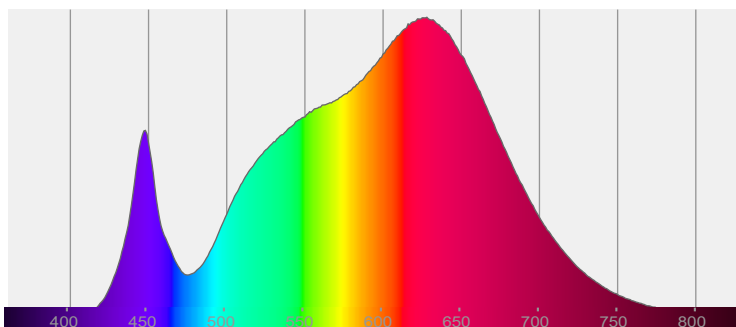
10/01/2022 15:28:58

Description:

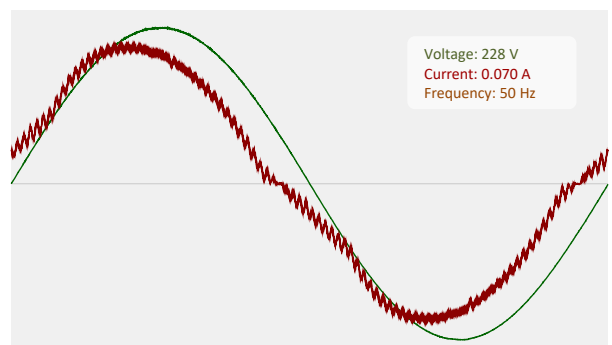
IP67 Recessed Adjustable Ground light

CIE 1931
x: 0.430
y: 0.397

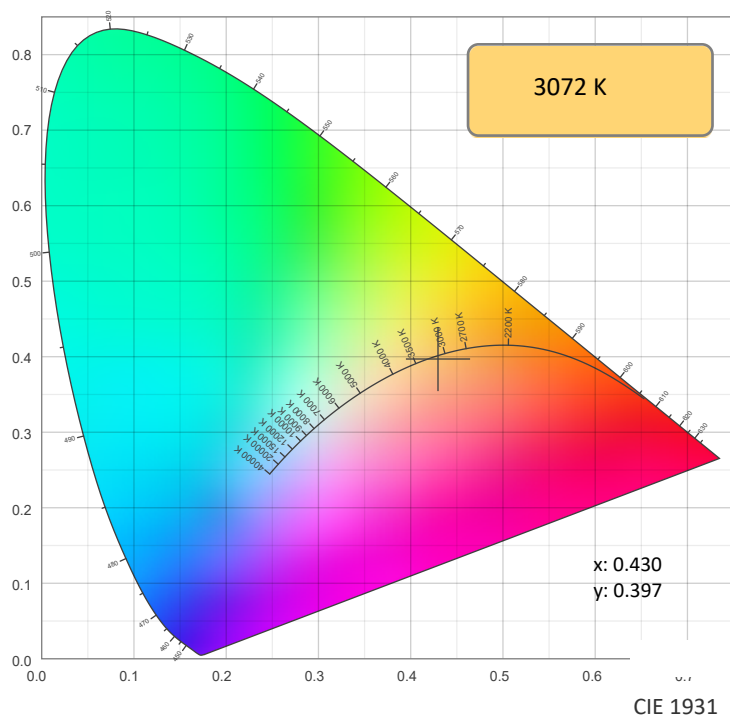
SPECTRA



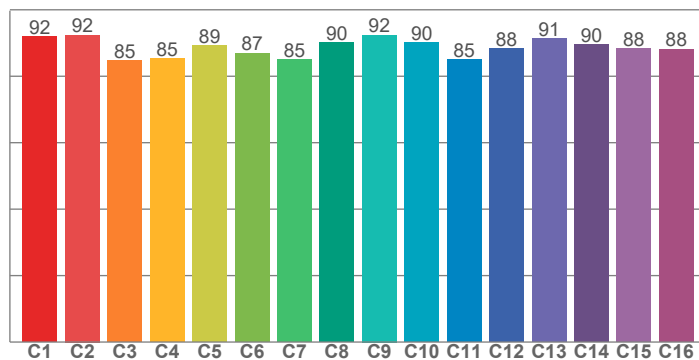
POWER



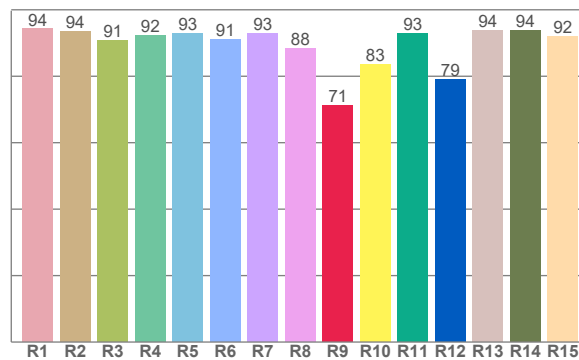
COLOR DETAILS



TM30: 88.8



CRI: 92.0 (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
94.2	93.6	90.8	92.4	92.8	91.1	92.8	88.3	71.2	83.5	93.0	79.1	93.8	93.9	92.0

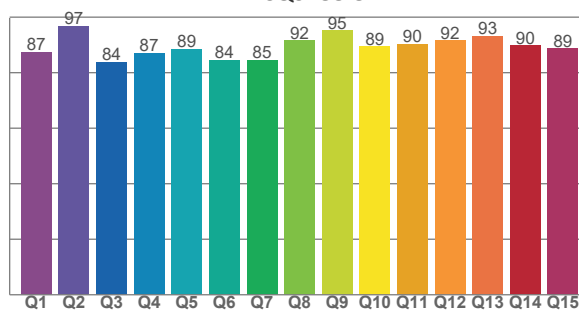
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
91.9	92.4	84.7	85.4	89.2	87.0	85.1	90.2	92.4	90.2	85.1	88.4	91.3	89.6	88.3	88.2

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
87.5	96.7	83.9	87.0	88.5	84.5	84.6	91.5	95.2	89.4	90.2	91.6	93.3	89.8	88.7

CQS: 88.8



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
3072 K	92.0	71.2	88.8	104.4	88.8	0.430	0.397	0.249	0.345	-0.0018

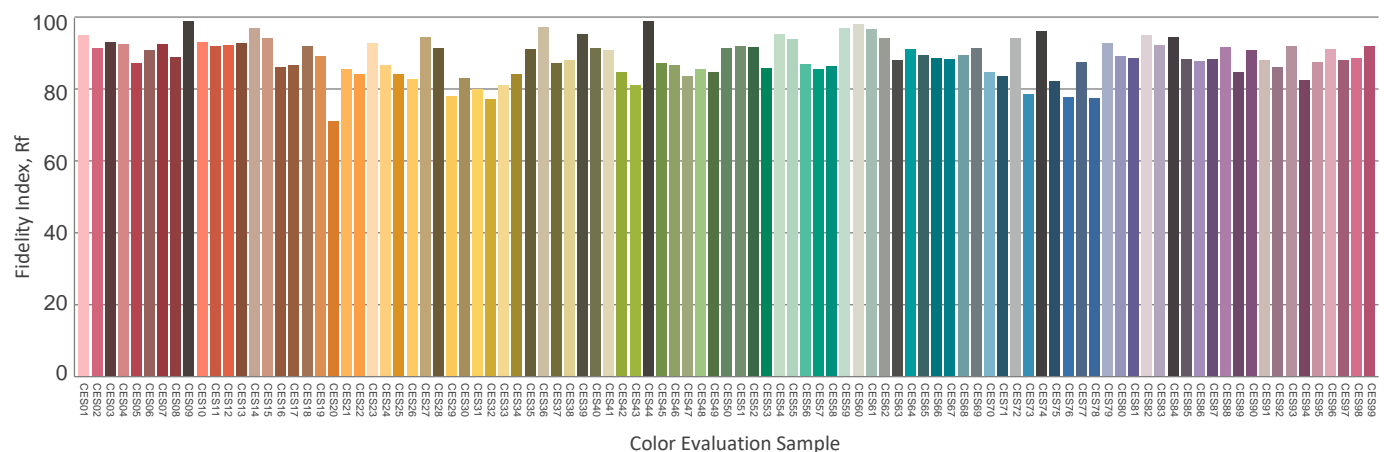
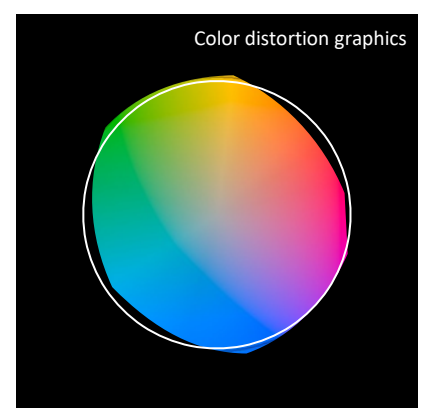
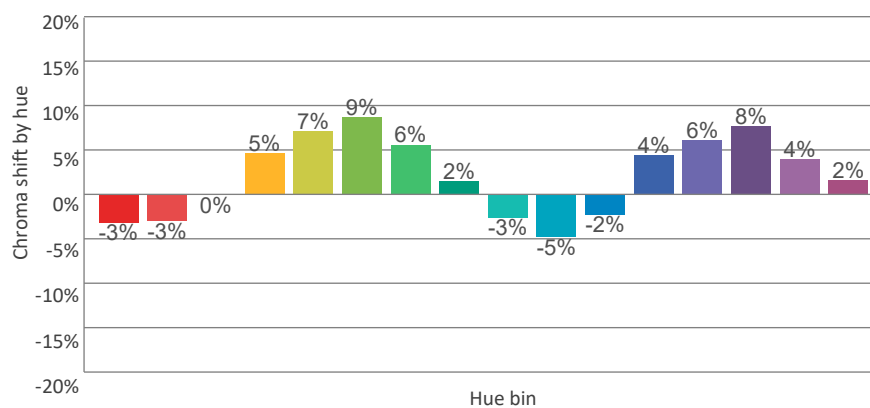
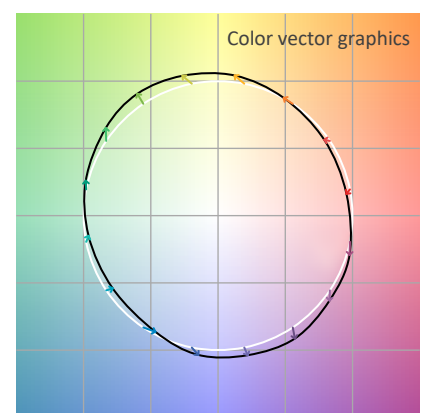
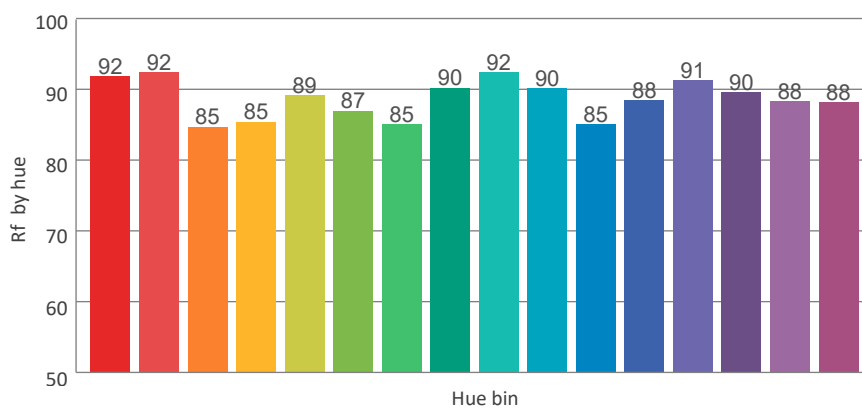
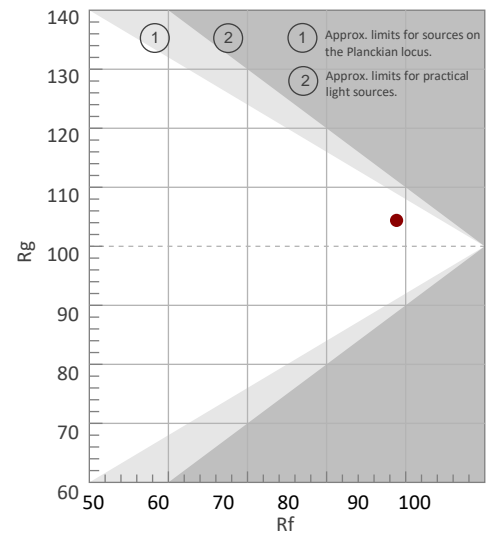
Rf 88.8

Fidelity index Rf

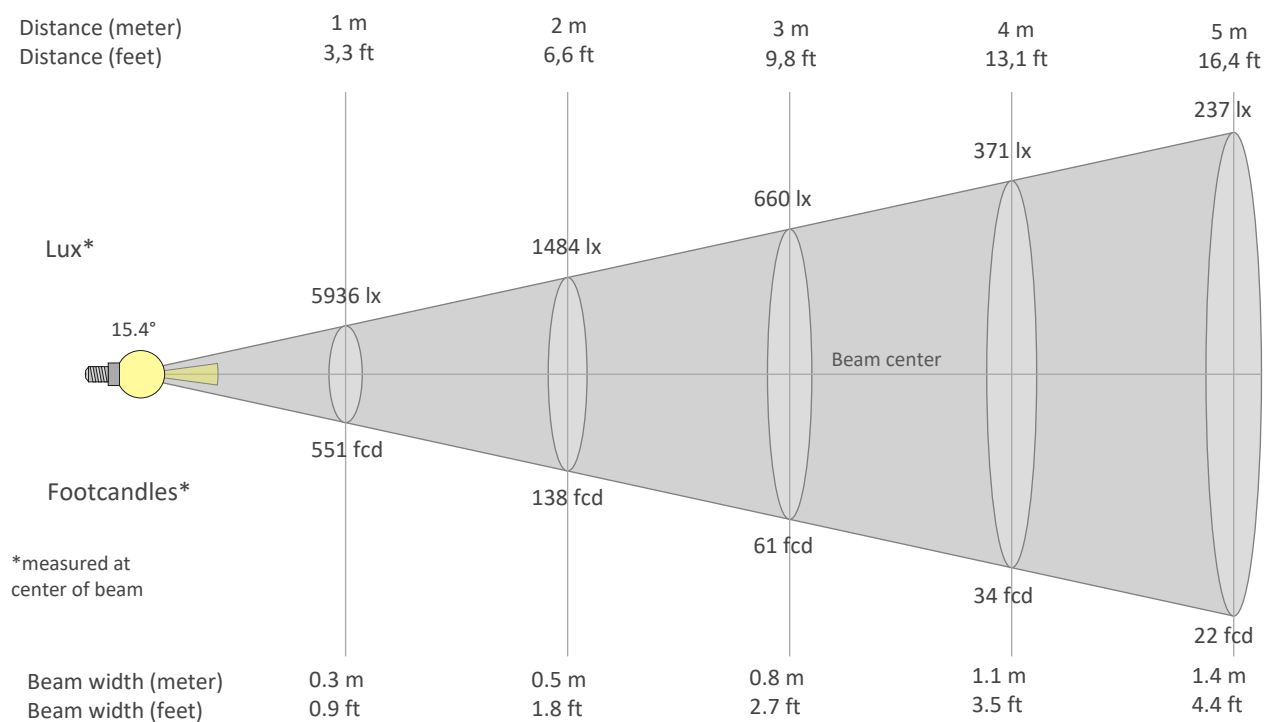
Rg 104.4

Gammut index Rg

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



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
5936lx	1484lx	660lx	371lx	237lx	165lx	121lx	93lx	73lx	59lx	49lx	41lx	35lx	30lx	26lx	23lx	21lx	18lx	16lx	15lx
551.4fcd	137.9fcd	61.3fcd	34.5fcd	22.1fcd	15.3fcd	11.3fcd	8.6fcd	6.8fcd	5.5fcd	4.6fcd	3.8fcd	3.3fcd	2.8fcd	2.5fcd	2.2fcd	1.9fcd	1.7fcd	1.5fcd	1.4fcd

Intensities in 0° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
5936	5868	5665	5329	4894	4391	3842	3283	2751	2272	1861	1530	1271	1081	940	831	745	677	625	584
100%	99%	95%	90%	82%	74%	65%	55%	46%	38%	31%	26%	21%	18%	16%	14%	13%	11%	11%	10%

Intensities in 90° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
5936	5886	5732	5464	5064	4556	3996	3427	2867	2353	1905	1535	1246	1029	873	759	673	607	556	516
100%	99%	97%	92%	85%	77%	67%	58%	48%	40%	32%	26%	21%	17%	15%	13%	11%	10%	9%	9%

Intensities in 180° c-plane

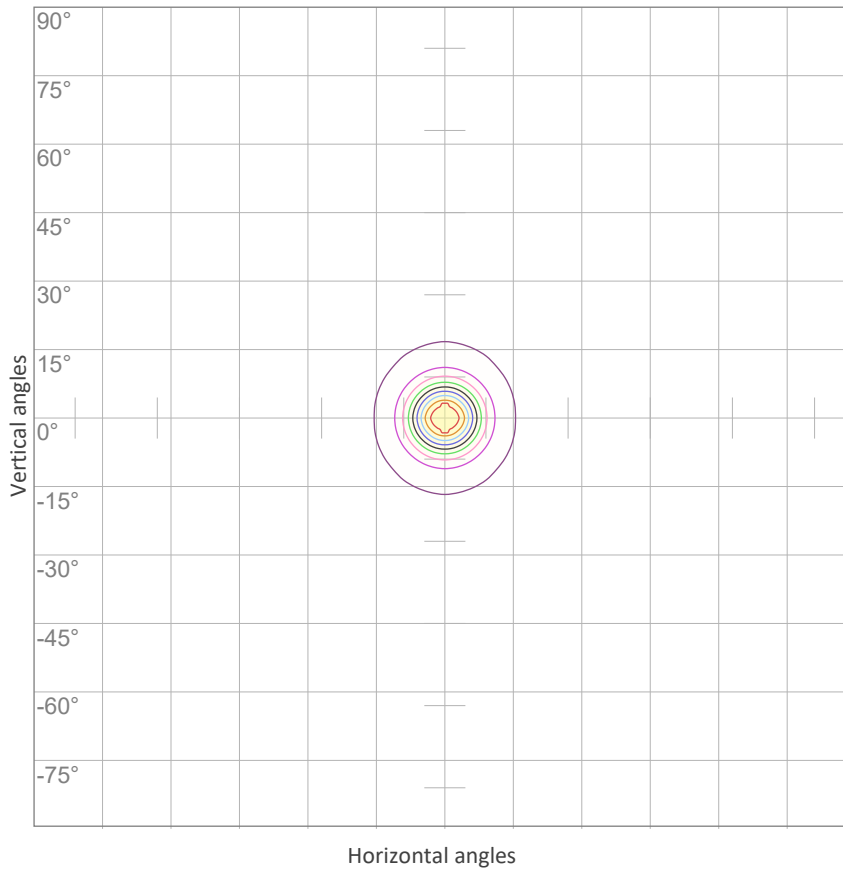
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
5936	5868	5665	5329	4894	4391	3842	3283	2751	2272	1861	1530	1271	1081	940	831	745	677	625	584
100%	99%	95%	90%	82%	74%	65%	55%	46%	38%	31%	26%	21%	18%	16%	14%	13%	11%	11%	10%

Intensities in 270° c-plane

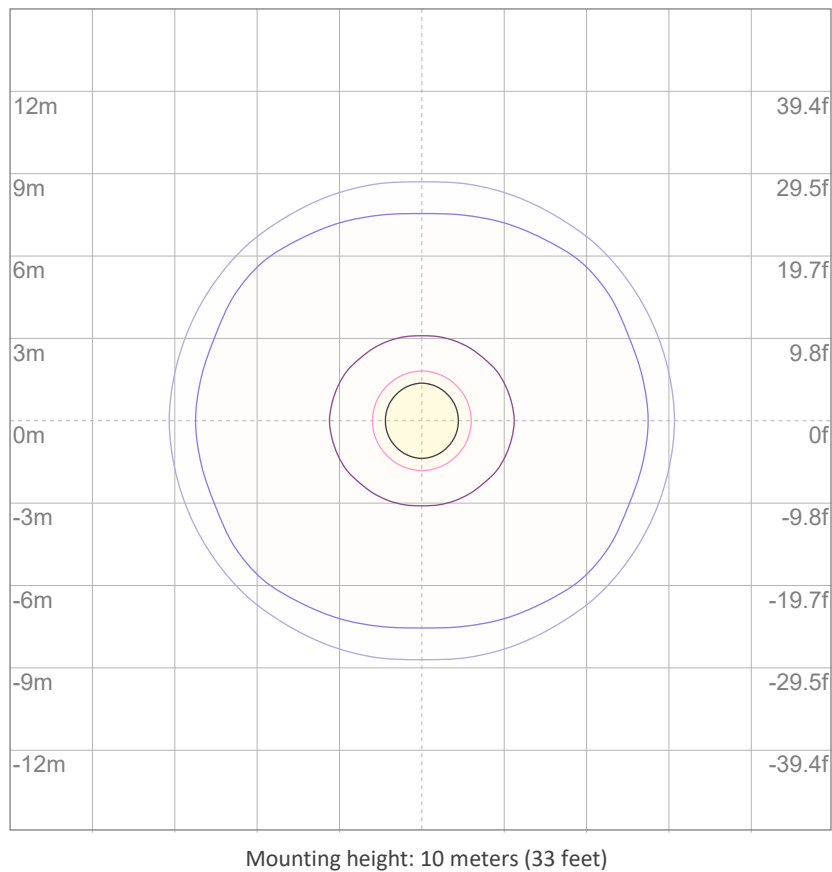
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
5936	5886	5732	5464	5064	4556	3996	3427	2867	2353	1905	1535	1246	1029	873	759	673	607	556	516
100%	99%	97%	92%	85%	77%	67%	58%	48%	40%	32%	26%	21%	17%	15%	13%	11%	10%	9%	9%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
15.4°	36°	85.7°	98.8%	94.6%

ISO CANDELA DIAGRAM



ISO LUX DIAGRAM



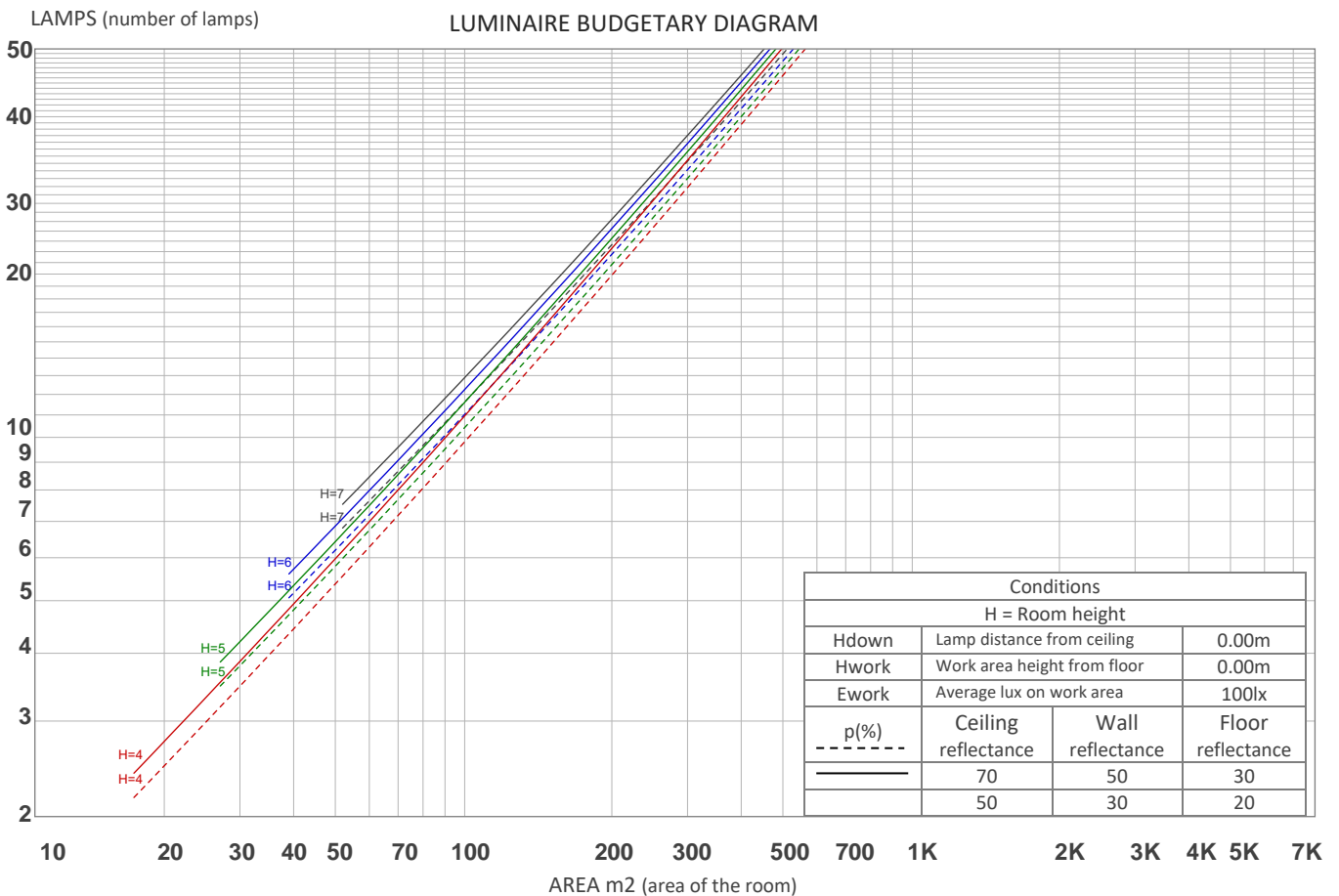
UGR

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	19.1	19.6	19.2	19.9	20.1	18.4	19.0	18.5	19.2	19.4
	3H	18.8	19.5	19.2	19.7	19.9	18.1	18.8	18.5	19.0	19.2
	4H	18.7	19.4	19.1	19.6	19.9	18.0	18.7	18.4	18.9	19.2
	6H	18.7	19.2	19.0	19.6	19.9	18.0	18.6	18.3	18.9	19.2
	8H	18.6	19.2	19.0	19.5	19.9	17.9	18.5	18.3	18.8	19.2
	12H	18.6	19.1	18.9	19.5	19.9	17.9	18.4	18.2	18.8	19.2
4H	2H	18.7	19.4	19.1	19.6	19.9	18.0	18.7	18.4	18.9	19.2
	3H	18.6	19.1	18.9	19.5	19.9	17.9	18.4	18.3	18.8	19.2
	4H	18.4	18.9	18.9	19.4	19.9	17.8	18.2	18.2	18.7	19.2
	6H	18.4	18.9	18.9	19.2	19.6	17.7	18.2	18.2	18.5	18.9
	8H	18.3	18.8	18.8	19.1	19.5	17.6	18.1	18.1	18.4	18.8
	12H	18.2	18.6	18.7	19.0	19.5	17.5	17.9	18.1	18.3	18.8
8H	4H	18.3	18.8	18.8	19.1	19.5	17.6	18.1	18.1	18.4	18.8
	6H	18.2	18.6	18.7	19.0	19.6	17.5	17.9	18.1	18.3	18.9
	8H	18.2	18.5	18.8	19.0	19.6	17.5	17.8	18.1	18.3	18.9
	12H	18.2	18.4	18.8	18.9	19.5	17.5	17.7	18.1	18.2	18.8
12H	4H	18.2	18.6	18.7	19.0	19.5	17.5	17.9	18.1	18.3	18.8
	6H	18.2	18.5	18.8	19.0	19.6	17.5	17.8	18.1	18.3	18.9
	8H	18.2	18.4	18.8	18.9	19.5	17.5	17.7	18.1	18.2	18.8
Variation of the observer position for the luminaire distance S											
S = 1.0H		3.9 / -14.3					3.9 / -14.1				
S = 1.5H		6.4 / -18.3					6.4 / -17.9				
S = 2.0H		8.4 / -19.5					8.3 / -19.1				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 1115 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	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	101	97	107	102	99	96	99	96	94	96	94	92	93	92	90	88
3	104	98	93	90	102	97	92	89	94	90	88	91	89	86	89	87	85	83
4	99	92	87	84	98	91	87	83	89	85	82	87	84	81	85	82	80	79
5	95	88	82	78	93	87	82	78	85	81	77	83	79	77	82	78	76	74
6	91	83	78	74	90	82	77	74	81	76	73	79	76	73	78	75	72	71
7	87	79	74	70	86	78	73	70	77	73	69	76	72	69	75	71	69	67
8	84	76	70	67	83	75	70	66	74	69	66	73	69	66	72	68	66	64
9	81	72	67	64	80	72	67	64	71	66	63	70	66	63	69	66	63	62
10	78	69	64	61	77	69	64	61	68	64	61	67	63	61	67	63	60	59



ZONAL LUMEN SUMMARY

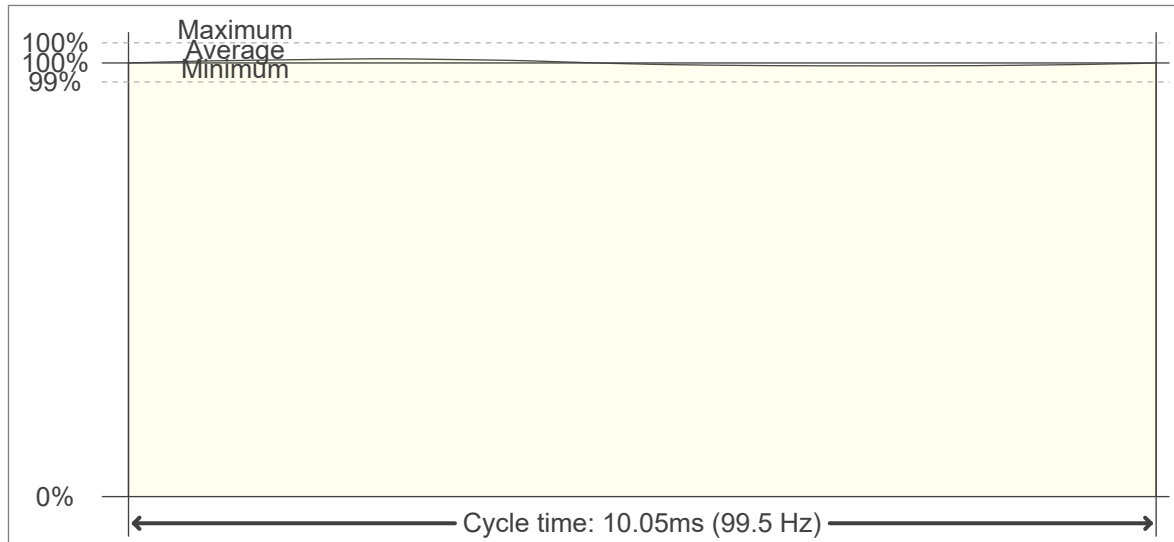
0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
330 lm	244 lm	203 lm	223 lm	80.6 lm	19.3 lm	2.81 lm	1.94 lm	0.652 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.417 lm	0.524 lm	0.719 lm	0.965 lm	1.23 lm	1.83 lm	1.19 lm	1.05 lm	0.360 lm

FLICKER

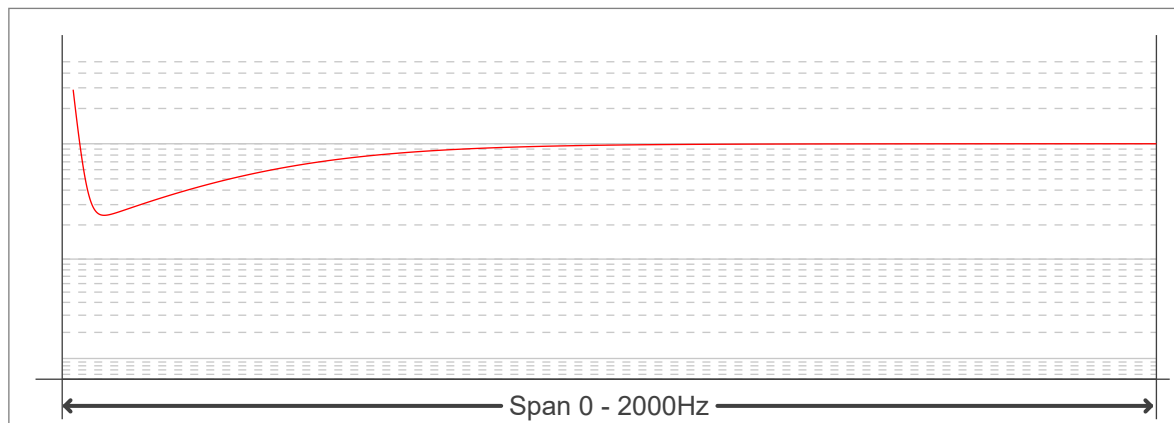
FLICKER CURVE (COMPLETE SAMPLED FLICKER)



FLICKER FRAME (FRAME OF ONE FLICKER PERIOD)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER CURVE)



FLICKER RESULTS:

Flicker frequency:	99.5 Hz
Flicker index:	0
Flicker percentage:	0.84 %
SVM: (Visual flicker)	0.03

FLICKER CONDITIONS:

Sample rate:	20000 samples/second
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