

# PHOTOMETRIC TEST REPORT

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CAN 50 RECESSED MATT BLACK &  
GLARE GUARD

astro

## CAN 50 RECESSED MATT BLACK & GLARE GUARD

astro

### LIGHT EFFICIENCY:

47 Lumen/Watt

### LIGHT QUALITY:

CRI: 82.2

### COLOR TEMPERATURE:

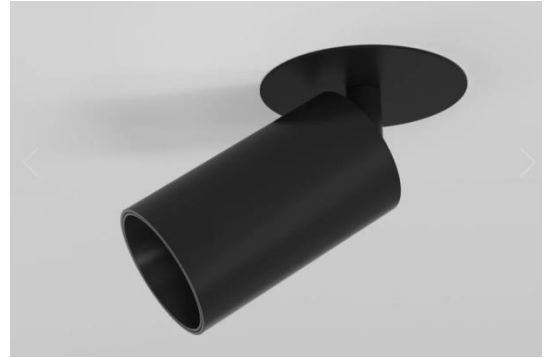
3053 K

OUTPUT: 351 lm

PEAK: 1380 cd

POWER: 7.4 W

PF: 0.99



Tracking number: [n/a](#)

Product name:

Can 50 Recessed Matt Black & Glare Guard

Item number:

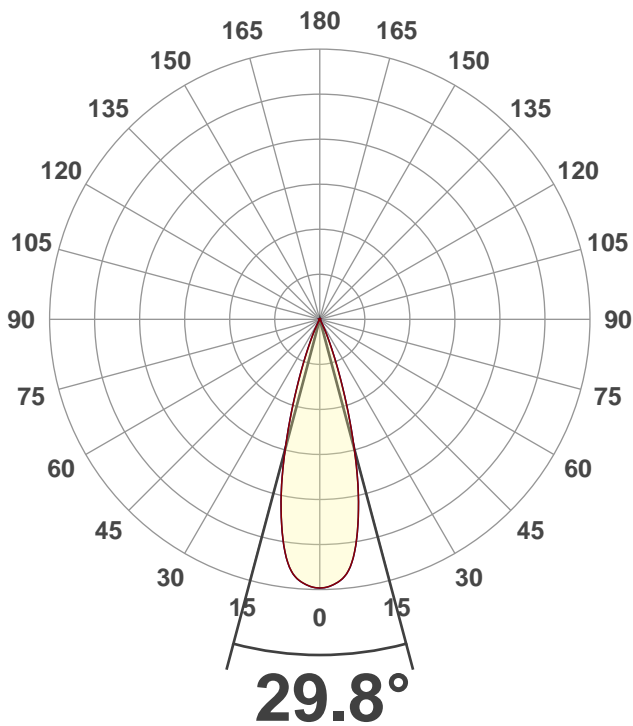
1396008

Date and time:

07/10/2020 15:35:11

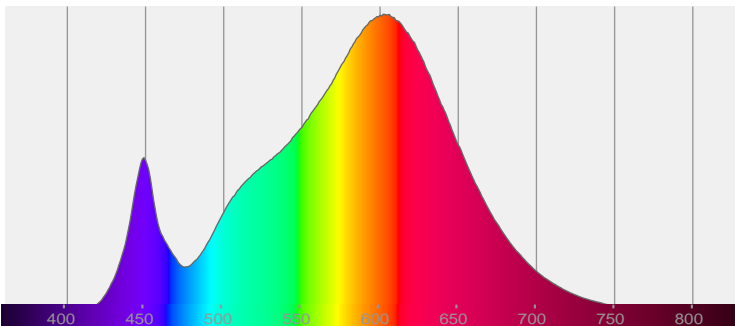
Description:

IP20 Recessed LED Spotlight

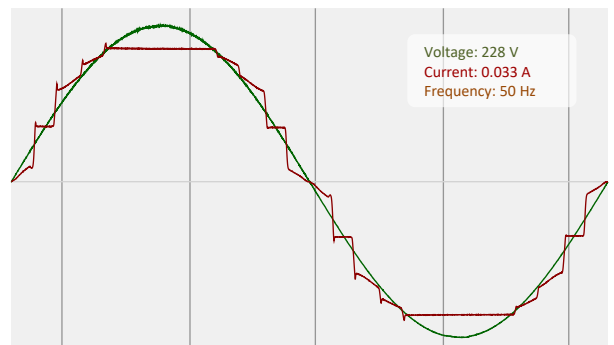


CIE 1931  
x: 0.435  
y: 0.406

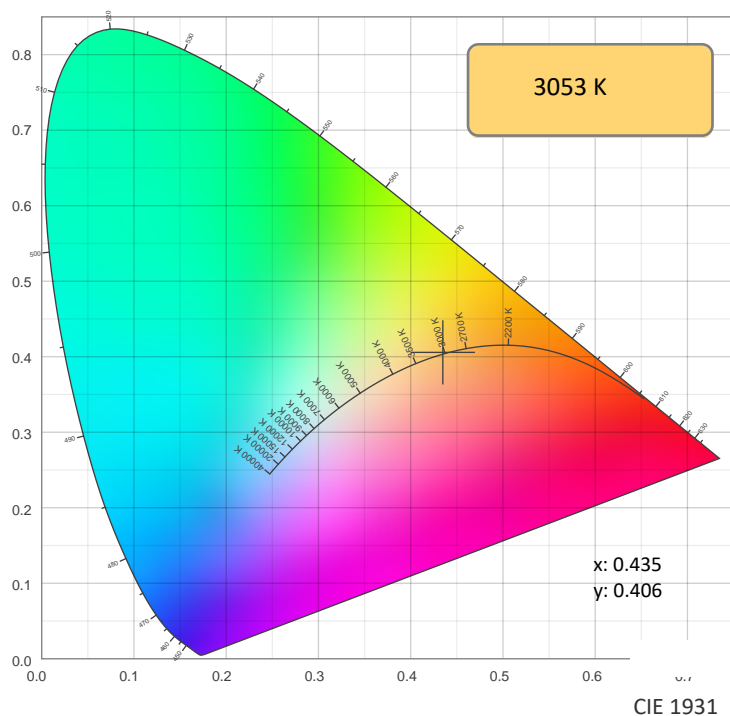
### SPECTRA



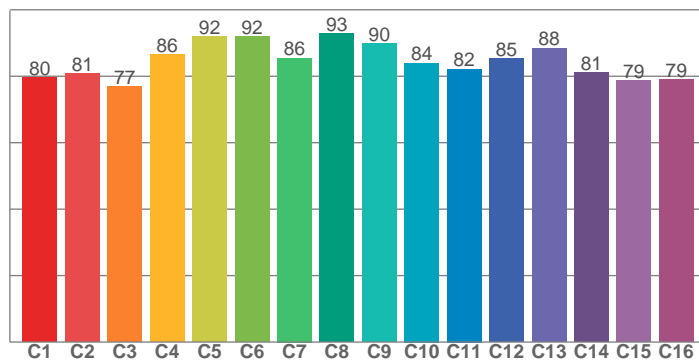
### POWER



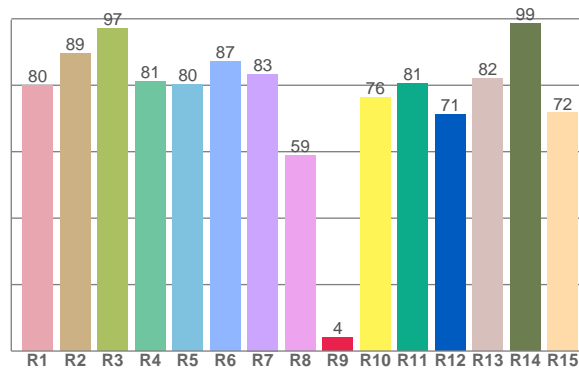
## COLOR DETAILS



TM30: 84.7



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
80.0	89.4	97.0	81.2	80.2	87.2	83.4	58.8	4.1	76.2	80.6	71.2	82.1	98.6	71.7

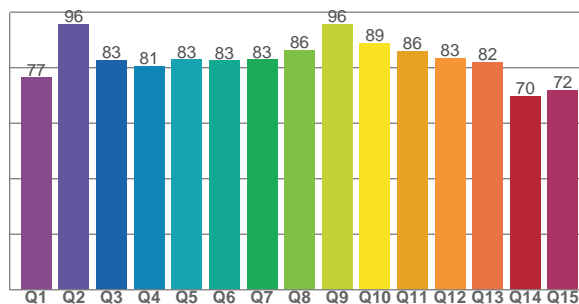
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
79.7	80.8	77.0	86.5	92.0	91.8	85.5	92.8	89.8	84.0	82.2	85.4	88.5	81.2	78.7	79.0

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
76.5	95.8	82.9	80.7	82.9	82.6	83.0	86.4	95.7	88.9	85.9	83.4	82.1	69.8	72.0

CQS: 81.7



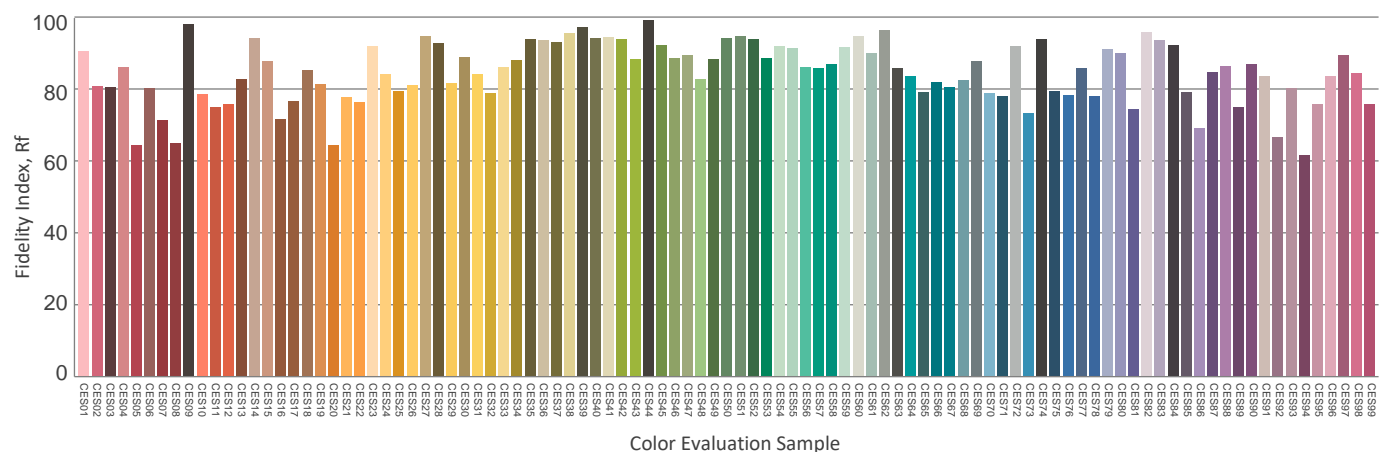
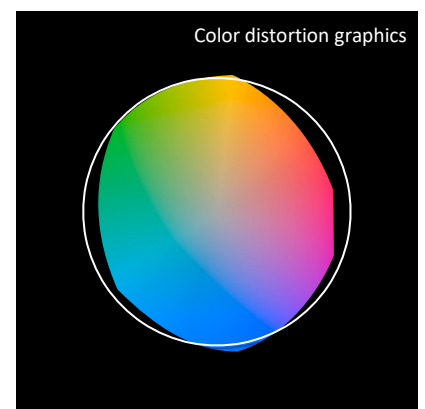
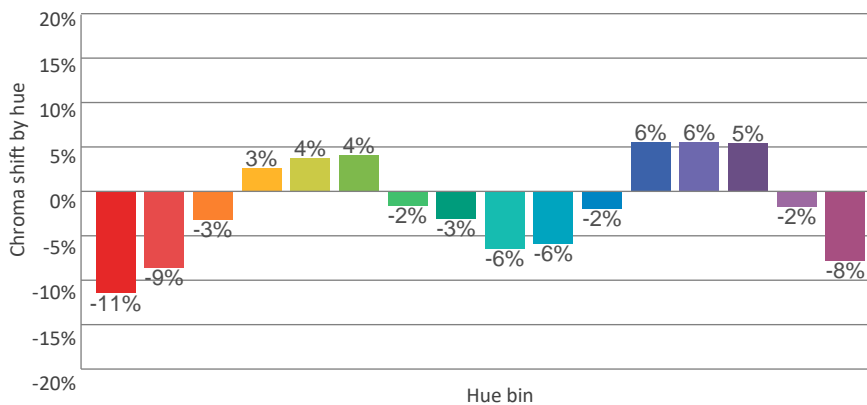
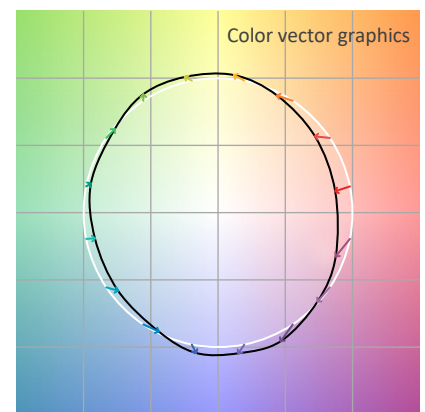
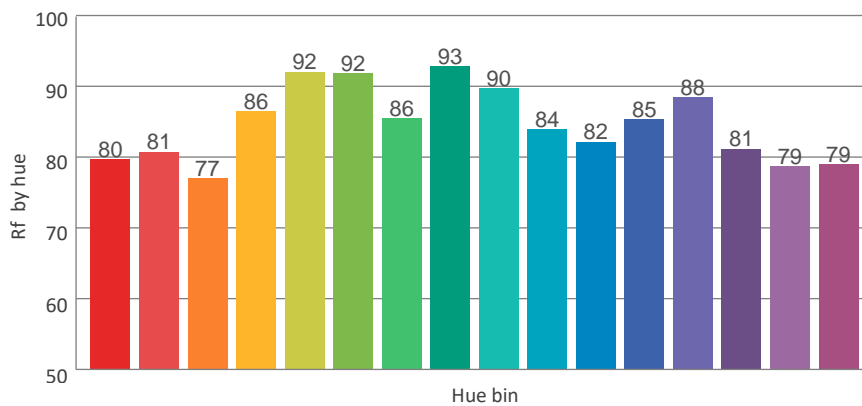
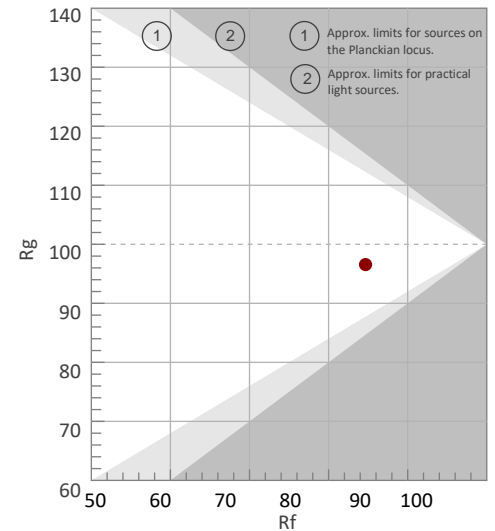
## COLOR PARAMETERS

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
3053 K	82.2	4.1	84.7	96.6	81.7	0.435	0.406	0.249	0.348	0.0010

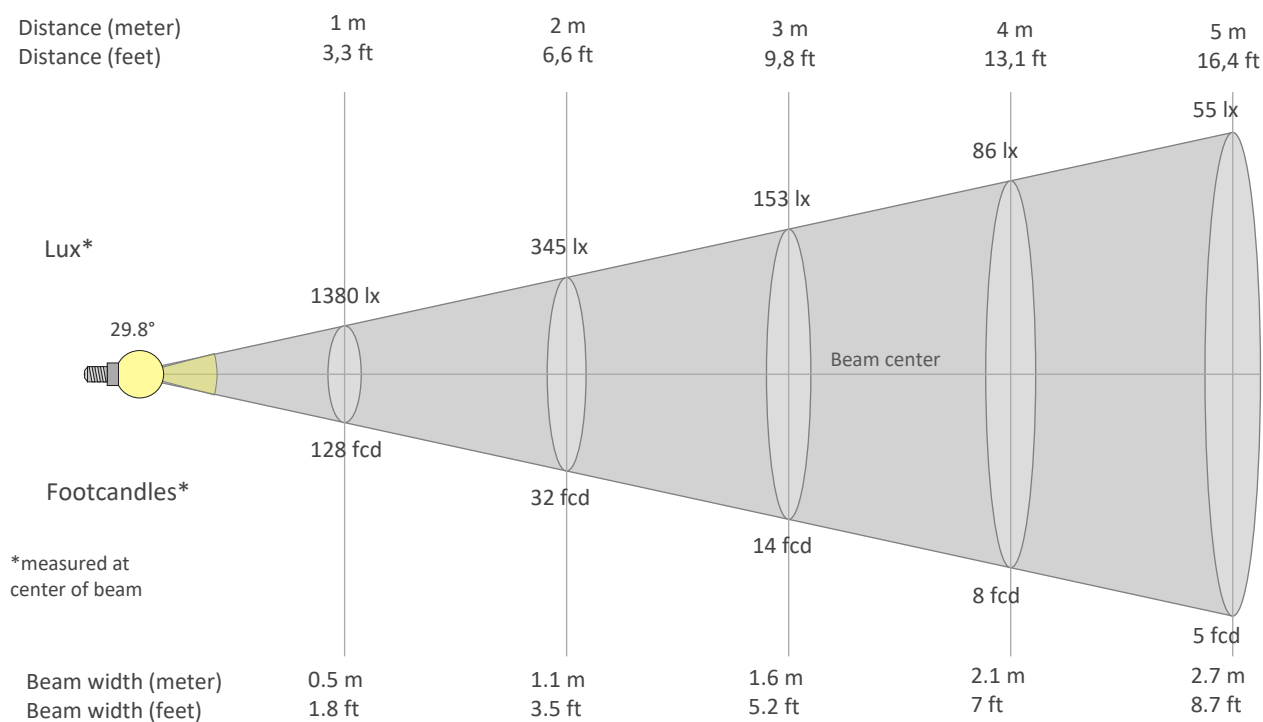
**Rf 84.7**  
Fidelity index Rf

**Rg 96.6**  
Gammut index Rg

Hue Bin	Graphic shifts (%)		
	R <sub>f</sub>	Chroma	Hue
1	80	-11%	-1%
2	81	-9%	7%
3	77	-3%	12%
4	86	3%	8%
5	92	4%	5%
6	92	4%	-3%
7	86	-2%	-9%
8	93	-3%	-3%
9	90	-6%	1%
10	84	-6%	7%
11	82	-2%	12%
12	85	6%	4%
13	88	6%	-6%
14	81	5%	-14%
15	79	-2%	-14%
16	79	-8%	-15%



## 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
1380lx	345lx	153lx	86lx	55lx	38lx	28lx	22lx	17lx	14lx	11lx	10lx	8lx	7lx	6lx	5lx	5lx	4lx	4lx	3lx
128.2fcd	32.1fcd	14.2fcd	8fcd	5.1fcd	3.6fcd	2.6fcd	2fcd	1.6fcd	1.3fcd	1.1fcd	0.9fcd	0.8fcd	0.7fcd	0.6fcd	0.5fcd	0.4fcd	0.4fcd	0.4fcd	0.3fcd

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°
1380	1373	1353	1314	1235	1110	956	777	588	413	271	166	96	51	25	15	11	9	7	6
100%	99%	98%	95%	89%	80%	69%	56%	43%	30%	20%	12%	7%	4%	2%	1%	1%	1%	1%	0%

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°
1380	1373	1353	1314	1235	1110	956	777	588	413	271	166	96	51	25	15	11	9	7	6
100%	99%	98%	95%	89%	80%	69%	56%	43%	30%	20%	12%	7%	4%	2%	1%	1%	1%	1%	0%

Intensities in 180° c-plane

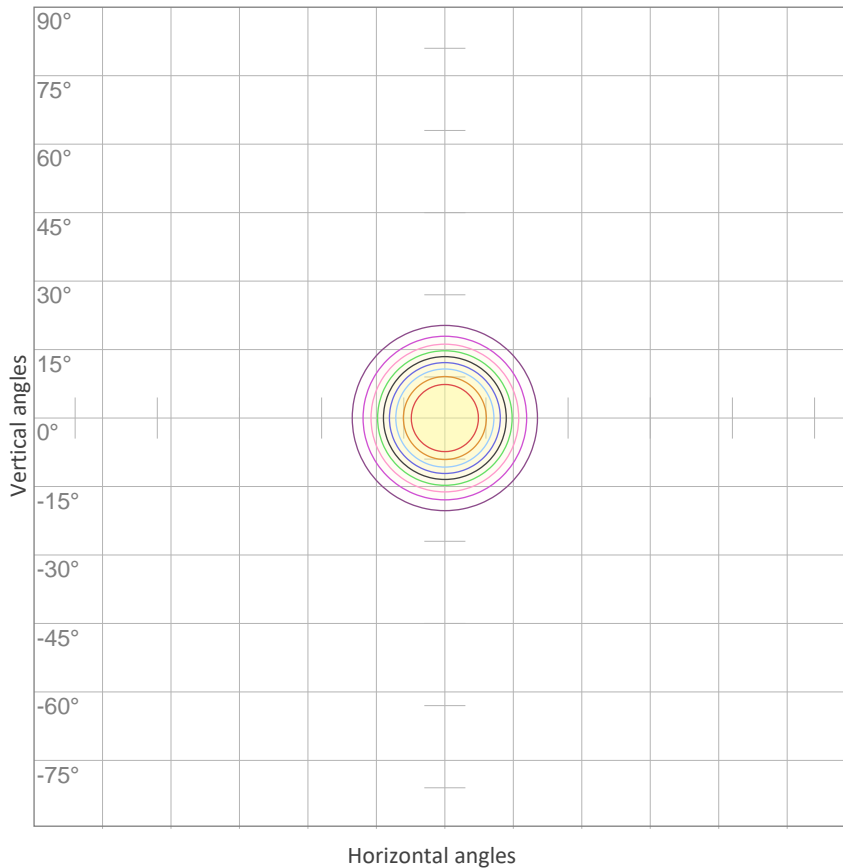
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1380	1373	1353	1314	1235	1110	956	777	588	413	271	166	96	51	25	15	11	9	7	6
100%	99%	98%	95%	89%	80%	69%	56%	43%	30%	20%	12%	7%	4%	2%	1%	1%	1%	1%	0%

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°
1380	1373	1353	1314	1235	1110	956	777	588	413	271	166	96	51	25	15	11	9	7	6
100%	99%	98%	95%	89%	80%	69%	56%	43%	30%	20%	12%	7%	4%	2%	1%	1%	1%	1%	0%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
29.8°	45.4°	54.2°	99.4%	99.1%

ISO CANDELA DIAGRAM



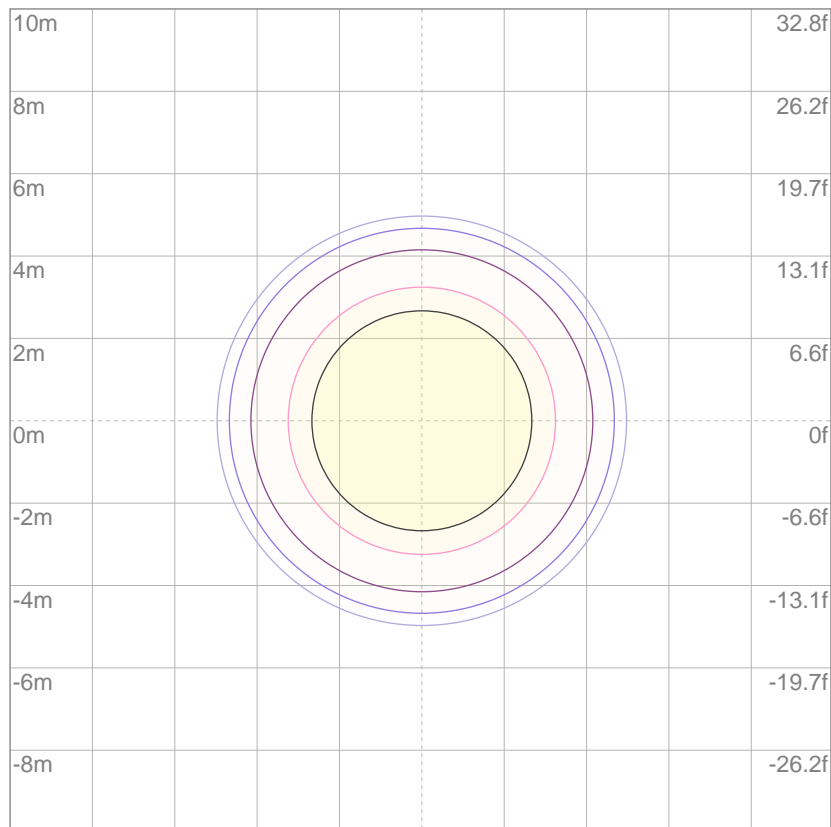
10%	138 cd
20%	276 cd
30%	414 cd
40%	552 cd
50%	690 cd
60%	828 cd
70%	966 cd
80%	1104 cd
90%	1242 cd

Conditions:

Number of c-planes: 8

Candela at center: 1380 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	0.414 lx
5%	0.690 lx
10%	1.38 lx
30%	4.14 lx
50%	{LUX_10M50} lx

Conditions:

Number of c-planes: 8

Lux at center: 13.8 lx

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

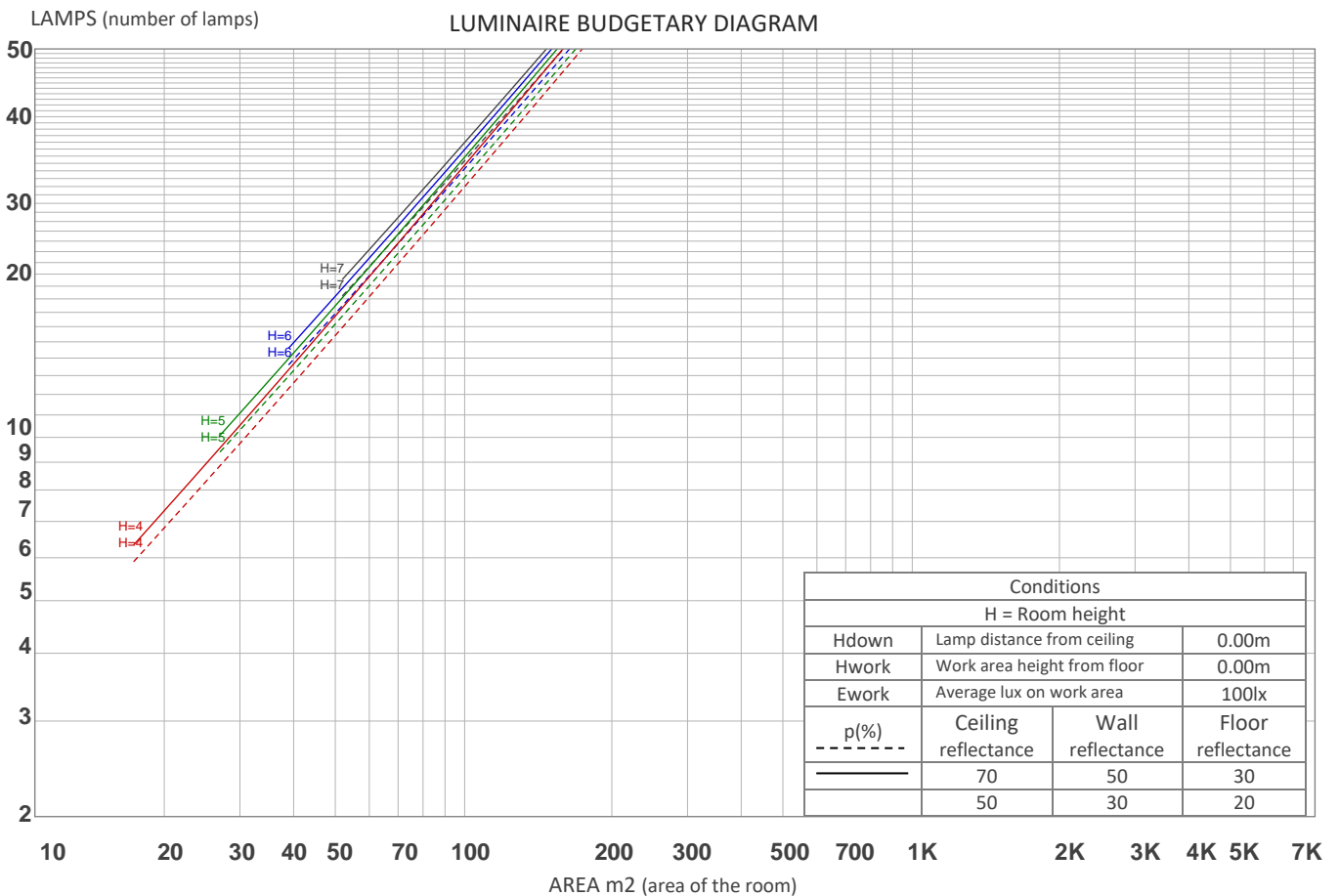
## UGR

## 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	-0.6	-0.3	-0.6	-0.1	0.1	-0.6	-0.3	-0.6	-0.1	0.1
	3H	-1.0	-0.4	-0.6	-0.2	0.0	-1.0	-0.4	-0.6	-0.2	0.0
	4H	-1.0	-0.5	-0.6	-0.3	0.0	-1.0	-0.5	-0.6	-0.3	0.0
	6H	-1.0	-0.6	-0.7	-0.3	0.1	-1.0	-0.6	-0.7	-0.3	0.1
	8H	-1.1	-0.7	-0.7	-0.3	0.1	-1.1	-0.7	-0.7	-0.3	0.1
	12H	-1.1	-0.7	-0.8	-0.4	0.1	-1.1	-0.7	-0.8	-0.4	0.1
4H	2H	-1.0	-0.5	-0.6	-0.3	0.0	-1.0	-0.5	-0.6	-0.3	0.0
	3H	-1.1	-0.7	-0.8	-0.4	0.0	-1.1	-0.7	-0.8	-0.4	0.0
	4H	-1.3	-0.9	-0.9	-0.5	0.0	-1.3	-0.9	-0.9	-0.5	0.0
	6H	-1.3	-0.9	-0.8	-0.6	-0.2	-1.3	-0.9	-0.8	-0.6	-0.2
	8H	-1.4	-1.0	-0.9	-0.6	-0.3	-1.4	-1.0	-0.9	-0.6	-0.3
	12H	-1.4	-1.1	-0.9	-0.7	-0.3	-1.4	-1.1	-0.9	-0.7	-0.3
8H	4H	-1.4	-1.0	-0.9	-0.7	-0.3	-1.4	-1.0	-0.9	-0.7	-0.3
	6H	-1.5	-1.2	-0.9	-0.7	-0.2	-1.5	-1.2	-0.9	-0.7	-0.2
	8H	-1.4	-1.3	-0.9	-0.7	-0.1	-1.4	-1.3	-0.9	-0.7	-0.1
	12H	-1.5	-1.3	-0.9	-0.8	-0.2	-1.5	-1.3	-0.9	-0.8	-0.2
12H	4H	-1.5	-1.2	-1.0	-0.8	-0.3	-1.5	-1.2	-1.0	-0.8	-0.3
	6H	-1.5	-1.3	-0.9	-0.7	-0.1	-1.5	-1.3	-0.9	-0.7	-0.1
	8H	-1.5	-1.4	-0.9	-0.8	-0.2	-1.5	-1.4	-0.9	-0.8	-0.2
Variation of the observer position for the luminaire distance S											
S = 1.0H		4.7 / -9.4					4.7 / -9.4				
S = 1.5H		7.3 / -10.5					7.3 / -10.5				
S = 2.0H		9.3 / -11.0					9.3 / -11.0				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 351 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	115	113	111	109	113	111	109	108	107	105	104	103	102	101	99	99	98	96
2	111	108	105	102	109	106	104	101	103	101	99	100	98	97	97	96	95	93
3	108	103	100	97	106	102	99	96	100	97	95	97	95	93	95	93	92	91
4	105	100	96	93	103	99	95	92	96	94	91	95	92	90	93	91	89	88
5	102	96	92	89	100	95	92	89	94	90	88	92	89	87	91	88	87	85
6	99	93	89	86	98	92	89	86	91	88	85	90	87	85	89	86	84	83
7	96	90	86	83	95	90	86	83	88	85	83	87	84	82	86	84	82	81
8	94	88	84	81	93	87	83	81	86	83	80	85	82	80	84	82	80	79
9	92	85	81	79	91	85	81	78	84	81	78	83	80	78	82	80	78	77
10	89	83	79	76	88	82	79	76	82	78	76	81	78	76	80	78	76	75



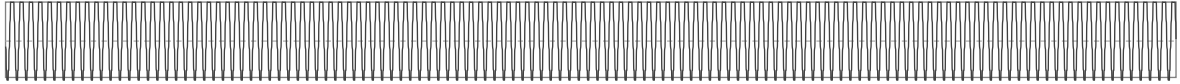
ZONAL LUMEN SUMMARY

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
121 lm	180 lm	39.7 lm	5.37 lm	1.94 lm	0.378 lm	0.145 lm	0.103 lm	0.106 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.126 lm	0.108 lm	0.124 lm	0.192 lm	0.262 lm	0.354 lm	0.378 lm	0.250 lm	0.071 lm

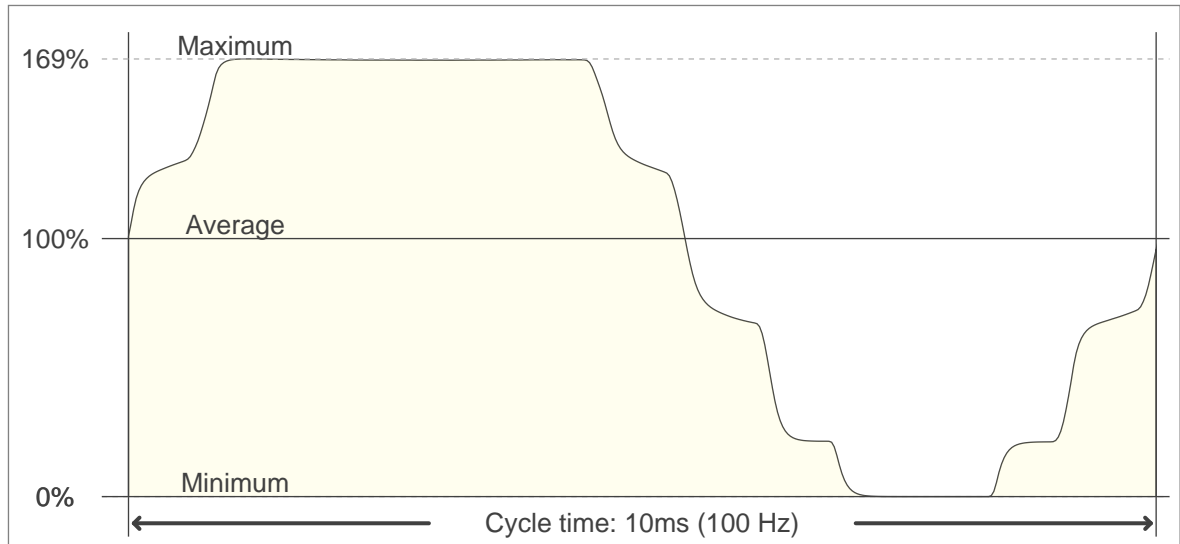


## FLICKER

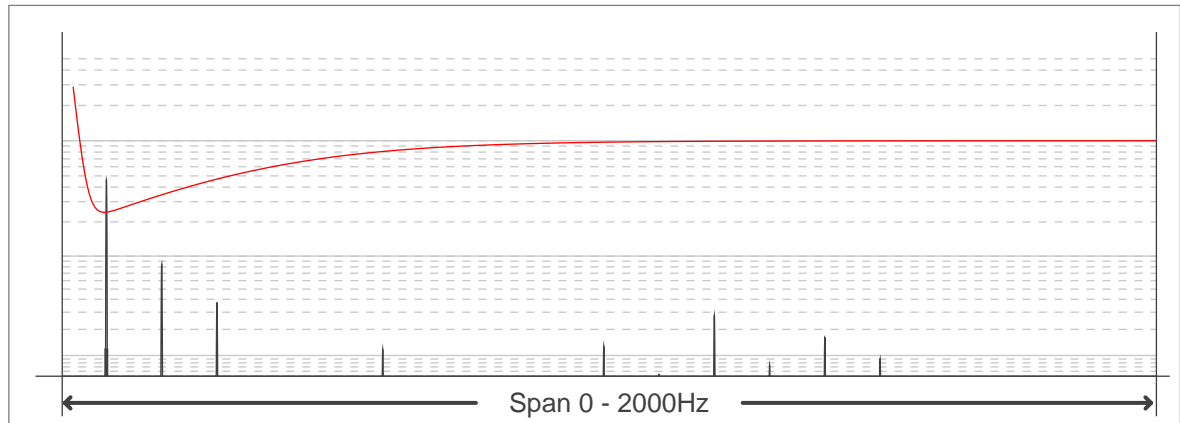
FLICKER CURVE (COMPLETE SAMPLED FLICKER)



FLICKER FRAME (FRAME OF ONE FLICKER PERIOD)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER CURVE)



## FLICKER RESULTS:

Flicker frequency:	100 Hz
Flicker index:	0.31
Flicker percentage:	100 %
SVM: (Visual flicker)	3.59

## FLICKER CONDITIONS:

Sample rate:	40000 samples/second
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