

# PHOTOMETRIC TEST REPORT

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CAN 50 RECESSED MATT BLACK &  
GLARE GUARD

astro

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### LIGHT EFFICIENCY:

47 Lumen/Watt

### LIGHT QUALITY:

CRI: 92.0

### COLOR TEMPERATURE:

3029 K

OUTPUT: 386 lm

PEAK: 1846 cd

POWER: 8.2 W

PF: 0.95



Tracking number: [n/a](#)

Product name:

Can 50 Recessed Matt Black & Glare Guard

Item number:

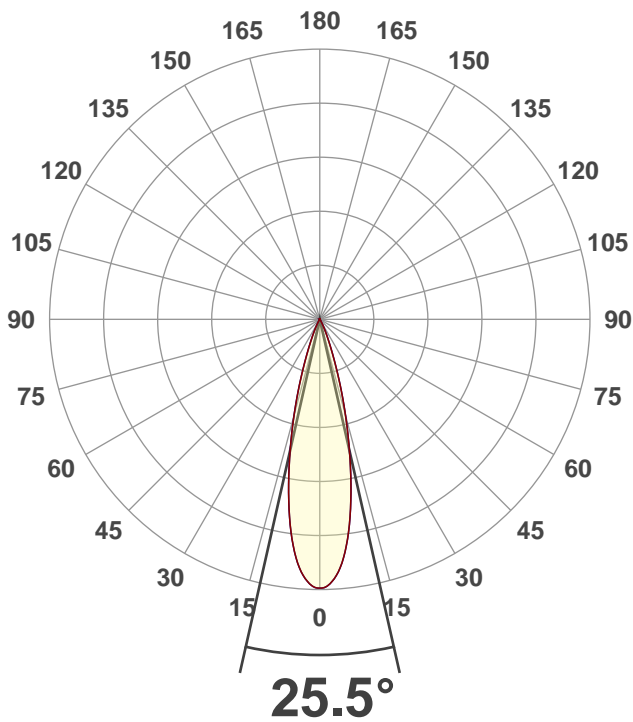
1396029

Date and time:

02/12/2020 15:30:05

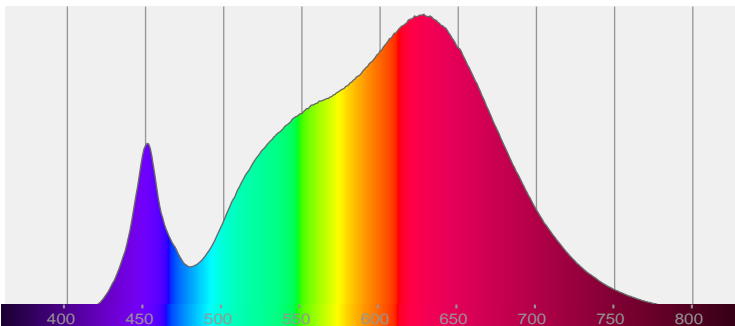
Description:

IP20 Recessed LED Spotlight with Glare Guard

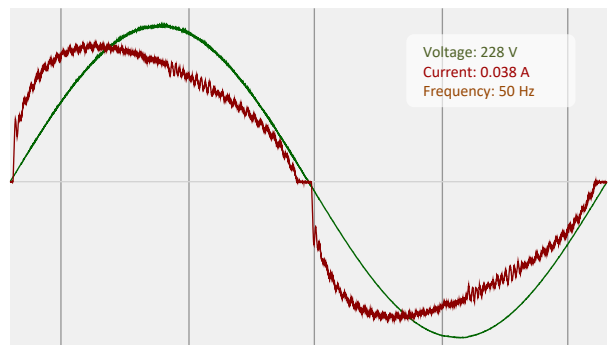


CIE 1931  
x: 0.434  
y: 0.401

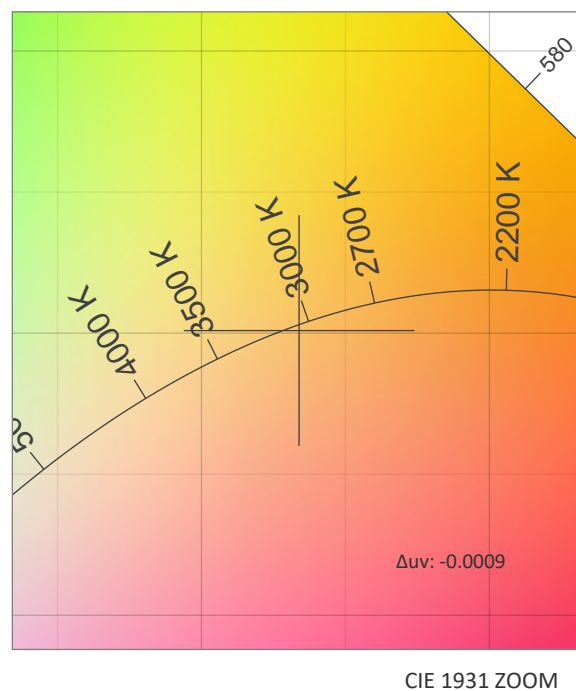
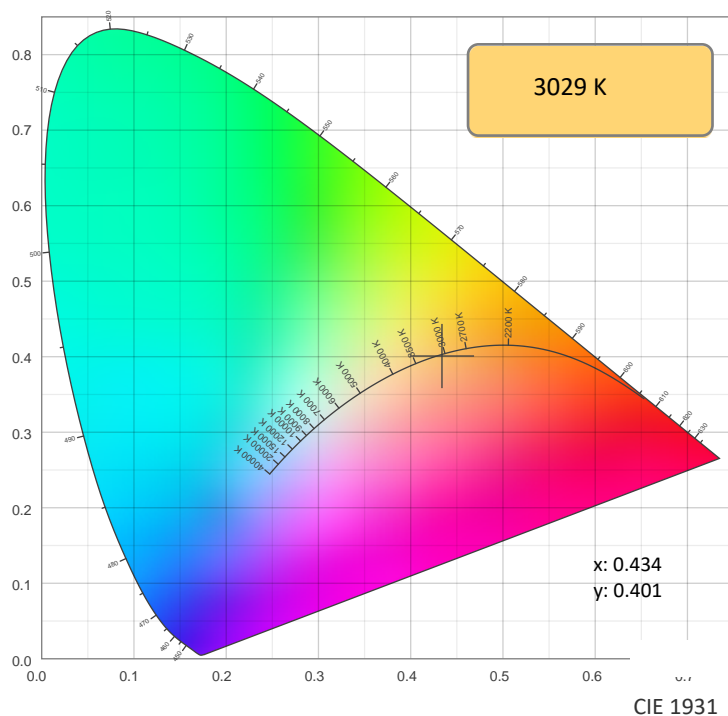
### SPECTRA



### POWER

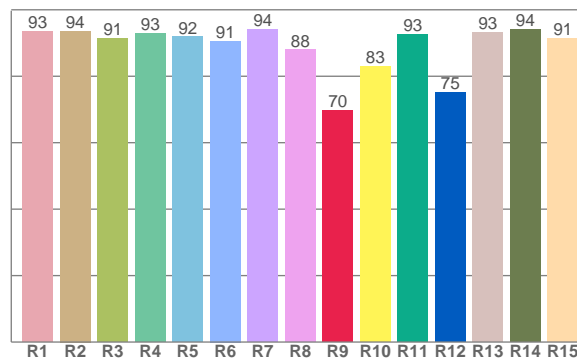
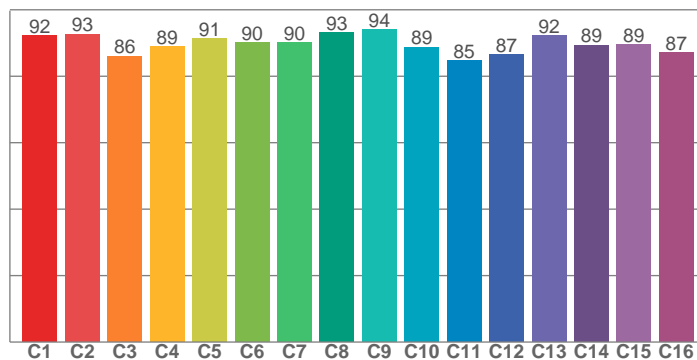


## COLOR DETAILS



TM30: 89.9

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
93.5	93.6	91.2	92.9	91.8	90.6	94.1	87.9	69.8	83.0	92.6	75.1	93.3	94.1	91.5

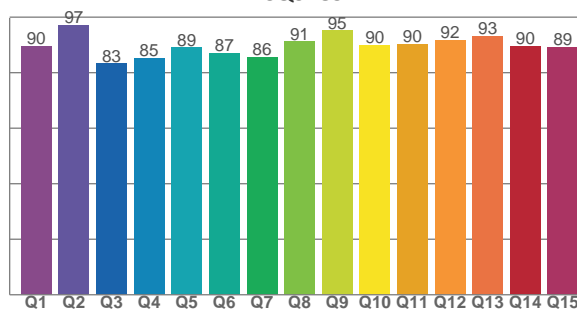
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92.3	92.7	86.0	88.9	91.3	90.1	90.2	93.1	94.1	88.8	84.6	86.5	92.2	89.4	89.5	87.2

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89.7	97.2	83.3	85.3	89.1	87.0	85.6	91.3	95.1	90.0	90.4	91.7	93.1	89.6	89.3

CQS: 89.1



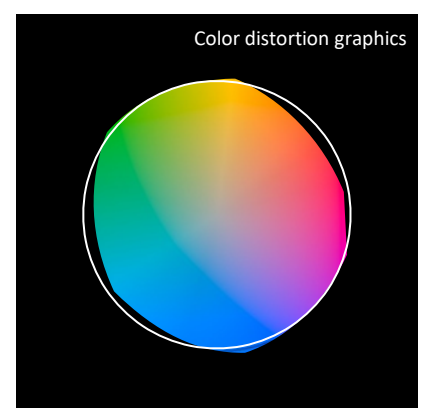
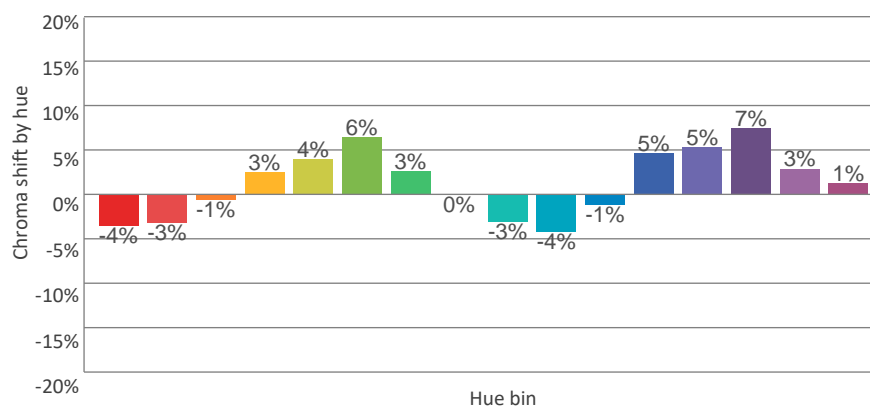
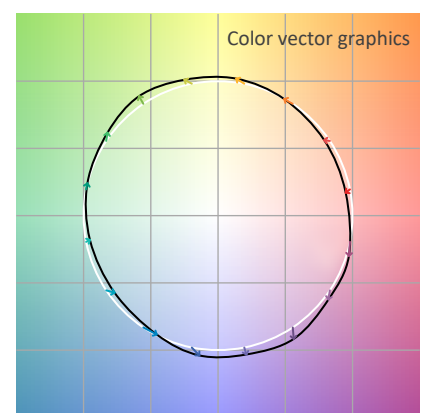
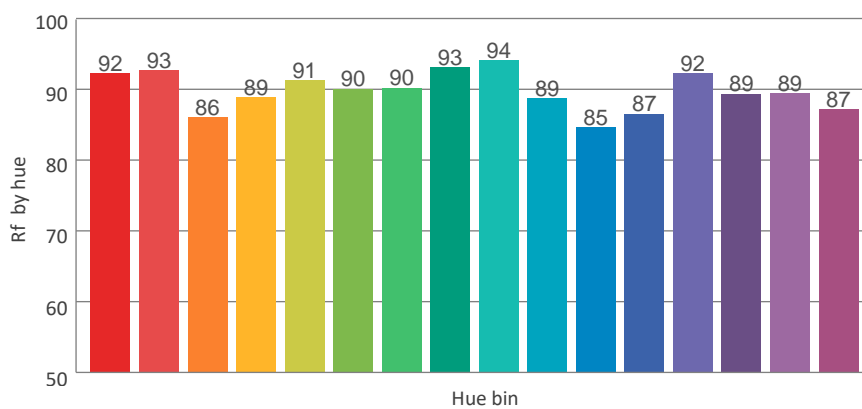
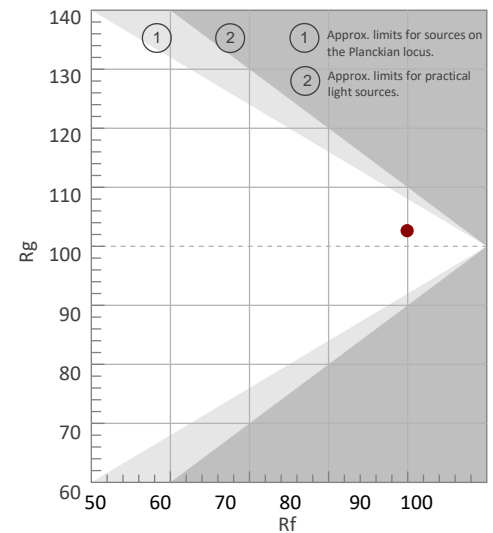
## COLOR PARAMETERS

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	$\Delta uv$
3029 K	92.0	69.8	89.9	102.6	89.1	0.434	0.401	0.250	0.346	-0.0009

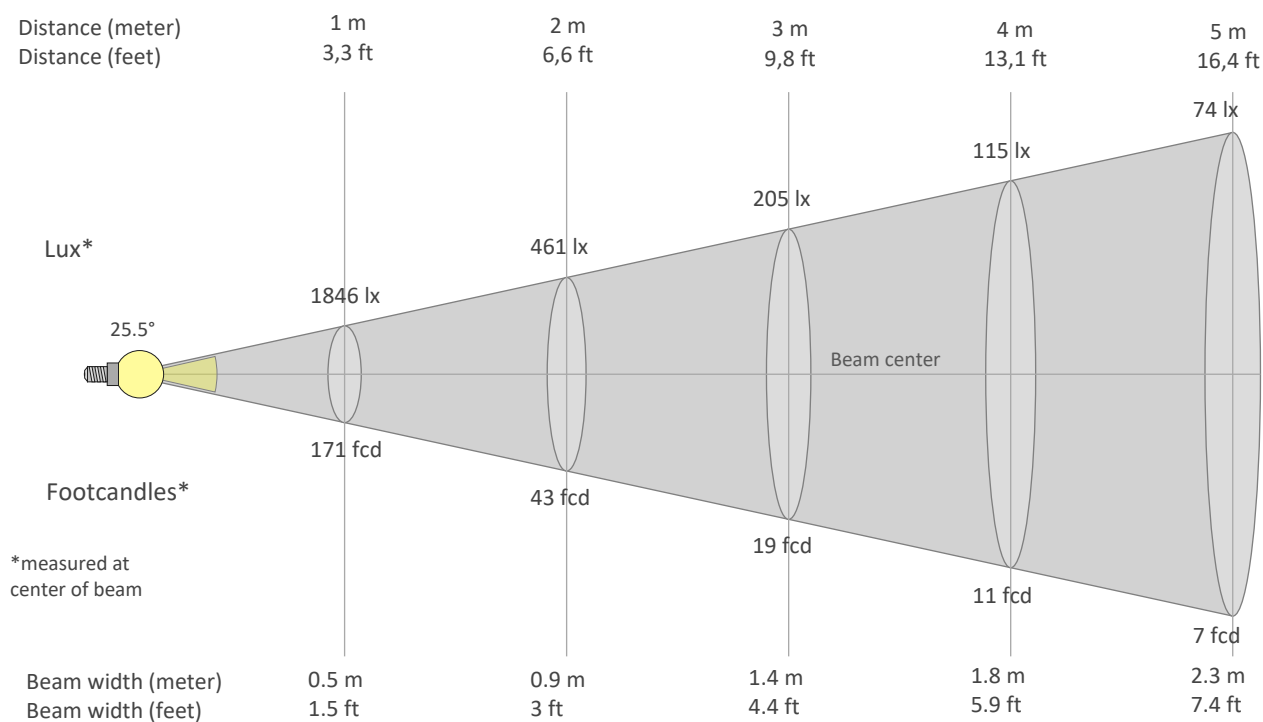
**Rf 89.9**  
Fidelity index Rf

**Rg 102.6**  
Gammut index Rg

Hue Bin	Graphic shifts (%)		
	R <sub>f</sub>	Chroma	Hue
1	92	-4%	-2%
2	93	-3%	3%
3	86	-1%	7%
4	89	3%	7%
5	91	4%	5%
6	90	6%	0%
7	90	3%	-6%
8	93	0%	-5%
9	94	-3%	-1%
10	89	-4%	5%
11	85	-1%	11%
12	87	5%	7%
13	92	5%	0%
14	89	7%	-4%
15	89	3%	-6%
16	87	1%	-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
1846lx	461lx	205lx	115lx	74lx	51lx	38lx	29lx	23lx	18lx	15lx	13lx	11lx	9lx	8lx	7lx	6lx	6lx	5lx	5lx
171.5fcd	42.9fcd	19.1fcd	10.7fcd	6.9fcd	4.8fcd	3.5fcd	2.7fcd	2.1fcd	1.7fcd	1.4fcd	1.2fcd	1fcd	0.9fcd	0.8fcd	0.7fcd	0.6fcd	0.5fcd	0.5fcd	0.4fcd

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°
1846	1823	1749	1622	1445	1231	1006	787	586	408	270	174	110	68	42	25	15	9	6	4
100%	99%	95%	88%	78%	67%	54%	43%	32%	22%	15%	9%	6%	4%	2%	1%	1%	0%	0%	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°
1846	1823	1749	1622	1445	1231	1006	787	586	408	270	174	110	68	42	25	15	9	6	4
100%	99%	95%	88%	78%	67%	54%	43%	32%	22%	15%	9%	6%	4%	2%	1%	1%	0%	0%	0%

Intensities in 180° c-plane

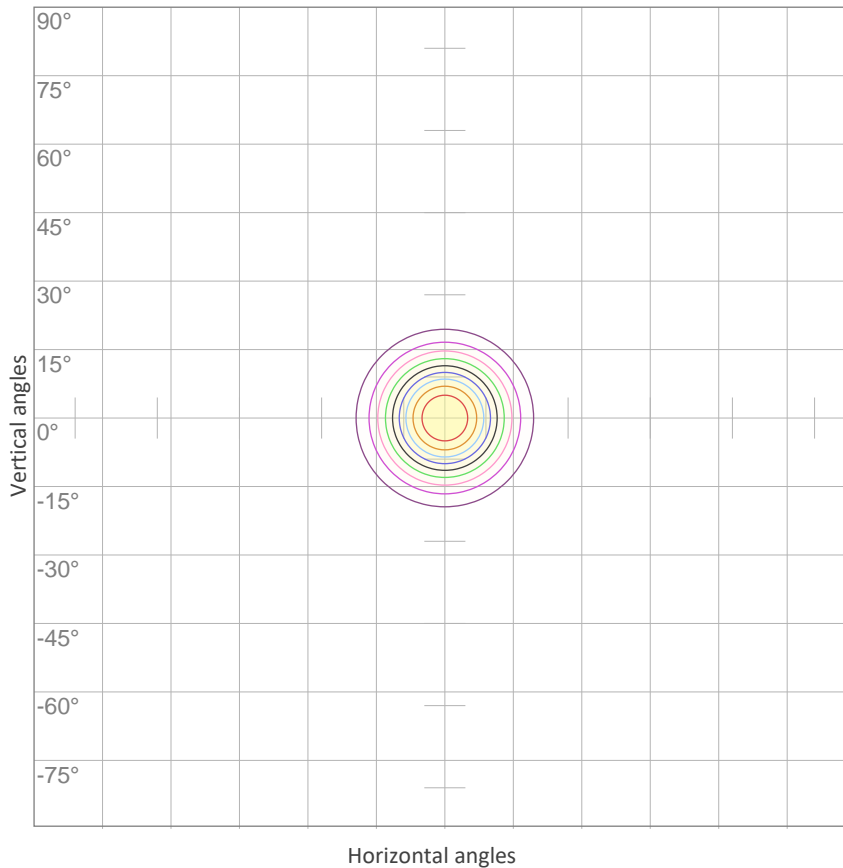
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1846	1823	1749	1622	1445	1231	1006	787	586	408	270	174	110	68	42	25	15	9	6	4
100%	99%	95%	88%	78%	67%	54%	43%	32%	22%	15%	9%	6%	4%	2%	1%	1%	0%	0%	0%

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°
1846	1823	1749	1622	1445	1231	1006	787	586	408	270	174	110	68	42	25	15	9	6	4
100%	99%	95%	88%	78%	67%	54%	43%	32%	22%	15%	9%	6%	4%	2%	1%	1%	0%	0%	0%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
25.5°	43.4°	55.3°	99.5%	99.3%

ISO CANDELA DIAGRAM



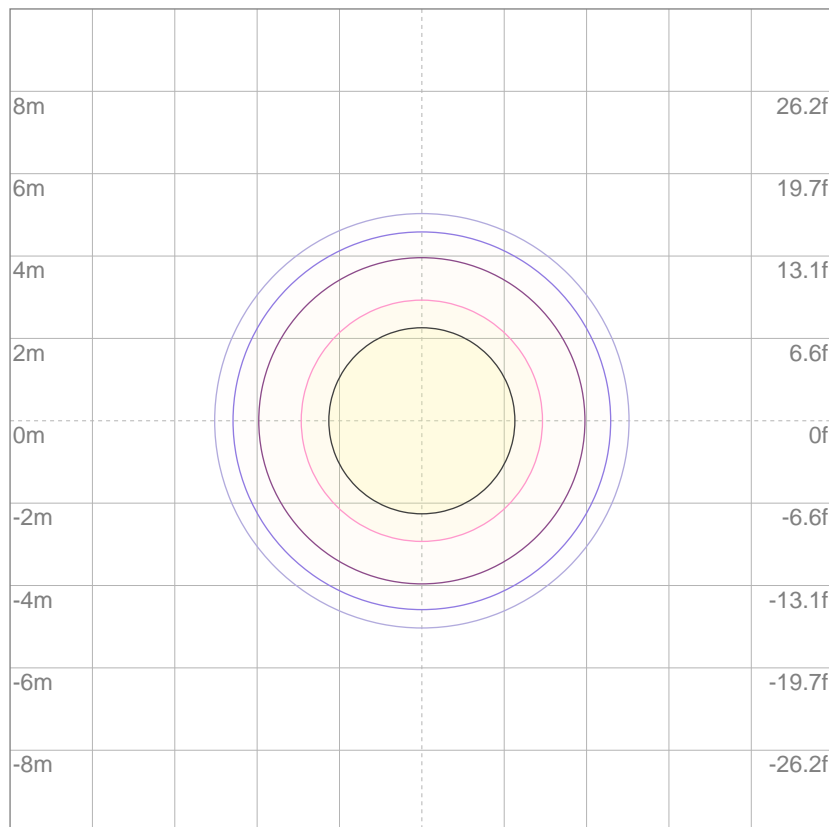
10%	185 cd
20%	369 cd
30%	554 cd
40%	738 cd
50%	923 cd
60%	1108 cd
70%	1292 cd
80%	1477 cd
90%	1661 cd

Conditions:

Number of c-planes: 8

Candela at center: 1846 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	0.554 lx
5%	0.923 lx
10%	1.85 lx
30%	5.54 lx
50%	{LUX_10M50} lx

Conditions:

Number of c-planes: 8

Lux at center: 18.5 lx

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

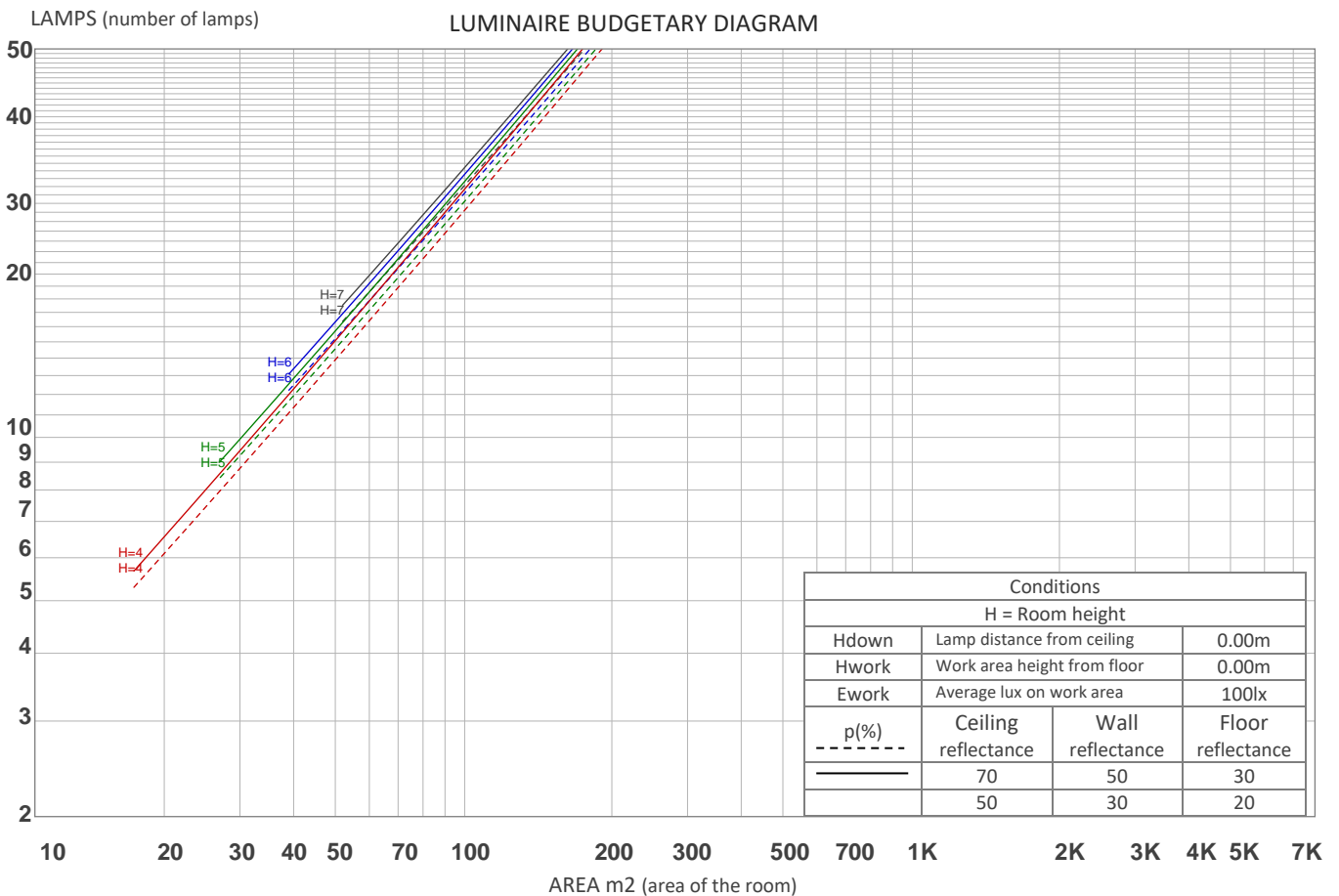
## UGR

## 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	-1.0	-0.7	-1.0	-0.5	-0.3	-1.0	-0.7	-1.0	-0.5	-0.3
	3H	-1.3	-0.8	-1.0	-0.6	-0.4	-1.3	-0.8	-1.0	-0.6	-0.4
	4H	-1.4	-0.9	-1.0	-0.6	-0.4	-1.4	-0.9	-1.0	-0.6	-0.4
	6H	-1.4	-1.0	-1.1	-0.7	-0.3	-1.4	-1.0	-1.1	-0.7	-0.3
	8H	-1.4	-1.0	-1.1	-0.7	-0.3	-1.4	-1.0	-1.1	-0.7	-0.3
	12H	-1.5	-1.1	-1.1	-0.7	-0.3	-1.5	-1.1	-1.1	-0.7	-0.3
4H	2H	-1.4	-0.9	-1.0	-0.7	-0.4	-1.4	-0.9	-1.0	-0.7	-0.4
	3H	-1.5	-1.1	-1.2	-0.7	-0.3	-1.5	-1.1	-1.2	-0.7	-0.3
	4H	-1.6	-1.3	-1.2	-0.8	-0.3	-1.6	-1.3	-1.2	-0.8	-0.3
	6H	-1.7	-1.3	-1.2	-0.9	-0.6	-1.7	-1.3	-1.2	-0.9	-0.6
	8H	-1.8	-1.4	-1.2	-1.0	-0.6	-1.8	-1.4	-1.2	-1.0	-0.6
	12H	-1.8	-1.5	-1.3	-1.1	-0.6	-1.8	-1.5	-1.3	-1.1	-0.6
8H	4H	-1.8	-1.4	-1.3	-1.0	-0.7	-1.8	-1.4	-1.3	-1.0	-0.7
	6H	-1.8	-1.6	-1.3	-1.1	-0.6	-1.8	-1.6	-1.3	-1.1	-0.6
	8H	-1.8	-1.6	-1.3	-1.1	-0.5	-1.8	-1.6	-1.3	-1.1	-0.5
	12H	-1.9	-1.7	-1.3	-1.2	-0.6	-1.9	-1.7	-1.3	-1.2	-0.6
12H	4H	-1.8	-1.5	-1.3	-1.1	-0.7	-1.8	-1.5	-1.3	-1.1	-0.7
	6H	-1.8	-1.6	-1.3	-1.1	-0.5	-1.8	-1.6	-1.3	-1.1	-0.5
	8H	-1.9	-1.7	-1.3	-1.2	-0.6	-1.9	-1.7	-1.3	-1.2	-0.6
Variation of the observer position for the luminaire distance S											
S = 1.0H		6.4 / -10.2					6.4 / -10.2				
S = 1.5H		9.1 / -10.5					9.1 / -10.5				
S = 2.0H		11.1 / -10.7					11.1 / -10.7				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 386 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	113	111	110	113	111	109	108	107	106	104	103	102	101	100	99	98	97
2	112	108	105	103	109	106	104	102	103	101	99	100	99	97	98	96	95	94
3	108	104	100	98	106	103	99	97	100	97	95	98	96	94	96	94	92	91
4	105	100	96	94	104	99	96	93	97	94	92	95	93	91	93	91	90	89
5	102	97	93	90	101	96	92	90	94	91	89	93	90	88	91	89	87	86
6	100	94	90	87	98	93	89	87	92	89	86	90	88	86	89	87	85	84
7	97	91	87	84	96	90	87	84	89	86	84	88	85	83	87	85	83	82
8	95	89	85	82	94	88	84	82	87	84	81	86	83	81	85	83	81	80
9	92	86	82	80	92	86	82	80	85	82	79	84	81	79	83	81	79	78
10	90	84	80	78	89	84	80	78	83	80	77	82	79	77	82	79	77	76



ZONAL LUMEN SUMMARY

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
147 lm	185 lm	46.0 lm	5.44 lm	0.762 lm	0.180 lm	0.123 lm	0.105 lm	0.103 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.098 lm	0.095 lm	0.105 lm	0.155 lm	0.250 lm	0.371 lm	0.377 lm	0.254 lm	0.062 lm

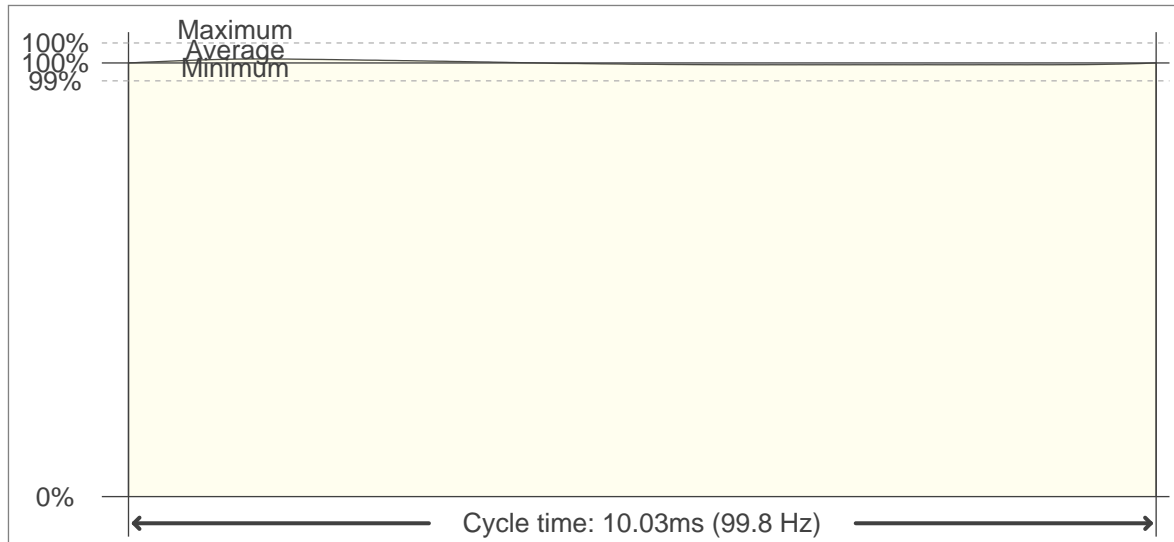


## FLICKER

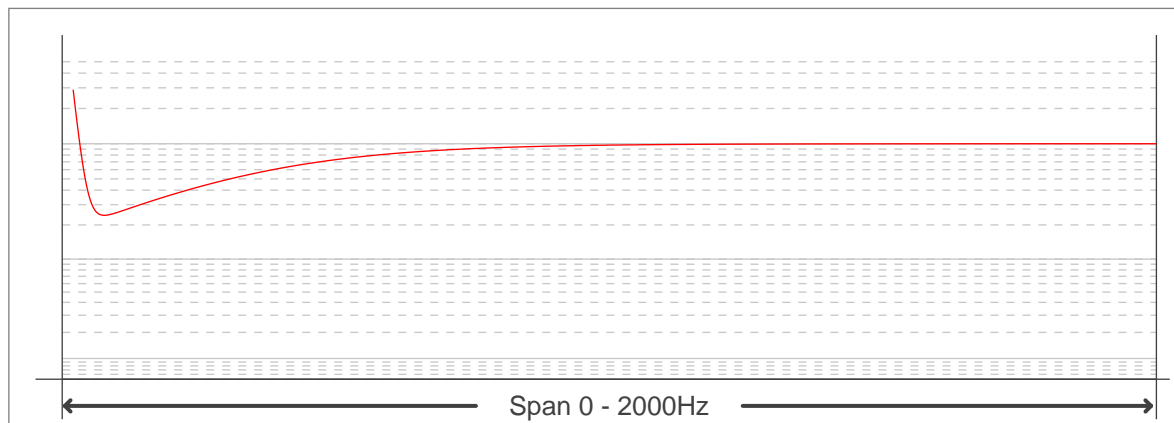
FLICKER CURVE (COMPLETE SAMPLED FLICKER)



FLICKER FRAME (FRAME OF ONE FLICKER PERIOD)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER CURVE)



## FLICKER RESULTS:

Flicker frequency:	99.75 Hz
Flicker index:	0
Flicker percentage:	0.7 %
SVM: (Visual flicker)	0.02

## FLICKER CONDITIONS:

Sample rate:	40000 samples/second
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