

PHOTOMETRIC TEST REPORT

CAN 50 RECESSED MATT BLACK

astro

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LIGHT EFFICIENCY:

61 Lumen/Watt

LIGHT QUALITY:

CRI: 82.1

COLOR TEMPERATURE:

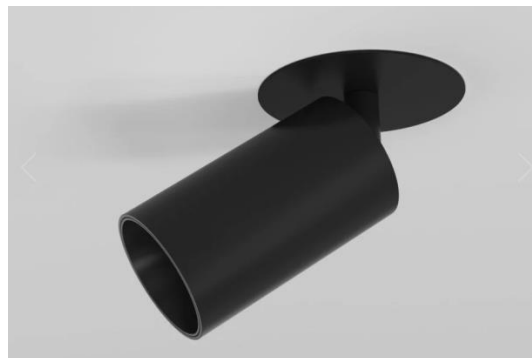
3056 K

OUTPUT: 447 lm

PEAK: 1476 cd

POWER: 7.4 W

PF: 0.99



Tracking number: [n/a](#)

Product name:

Can 50 Recessed Matt Black

Item number:

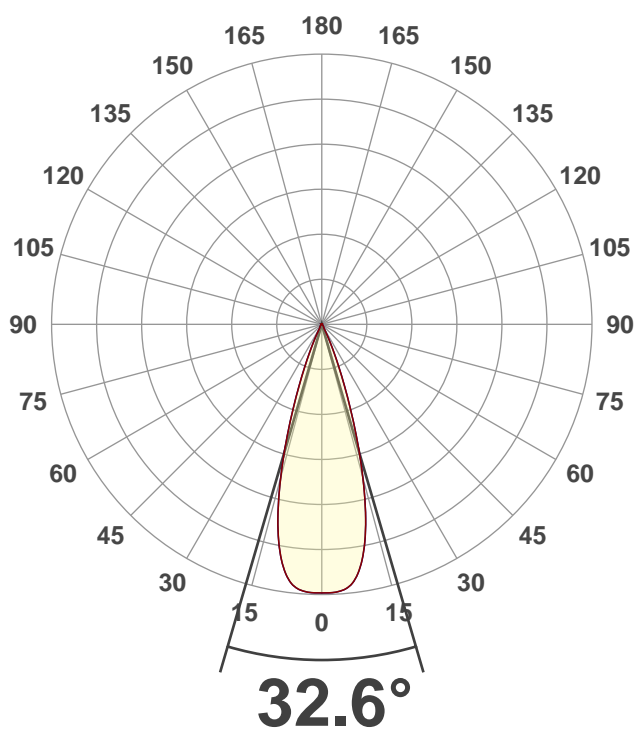
1396008

Date and time:

07/10/2020 15:28:44

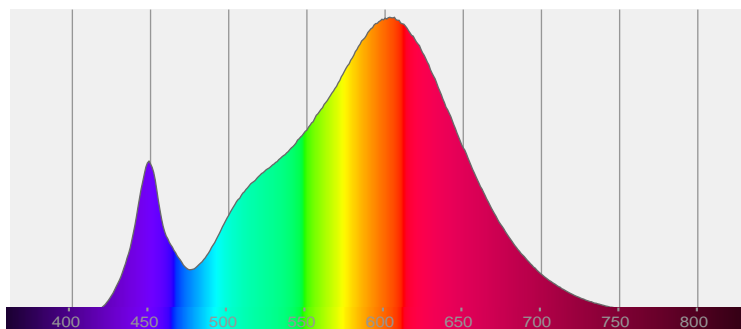
Description:

IP20 Recessed LED Spotlight

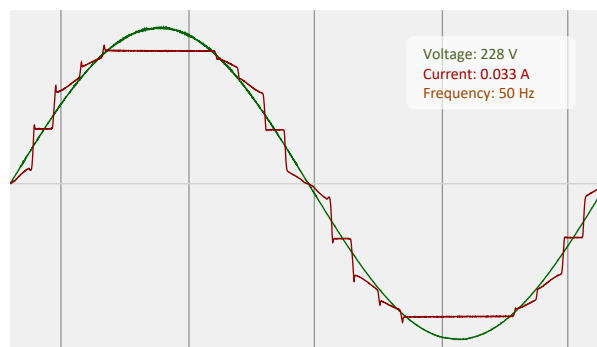


CIE 1931
x: 0.435
y: 0.406

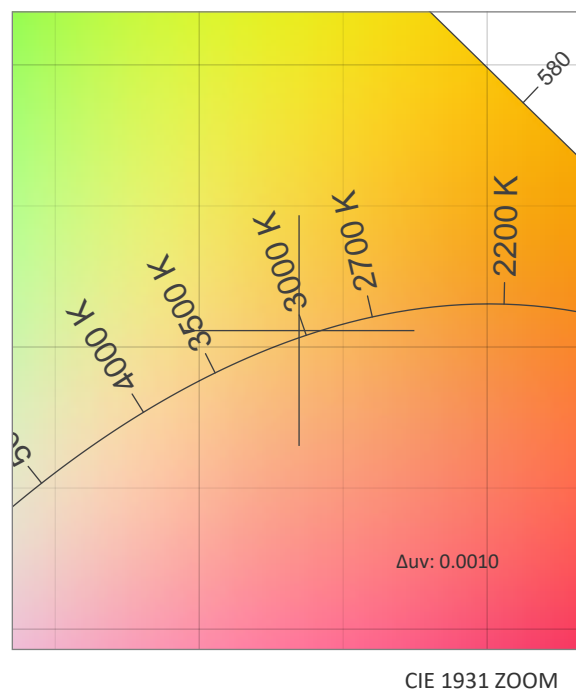
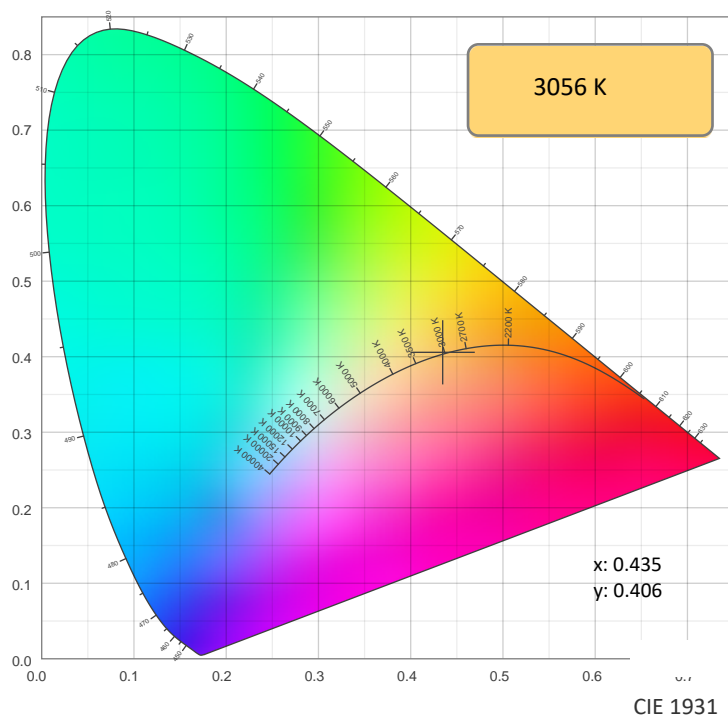
SPECTRA



POWER

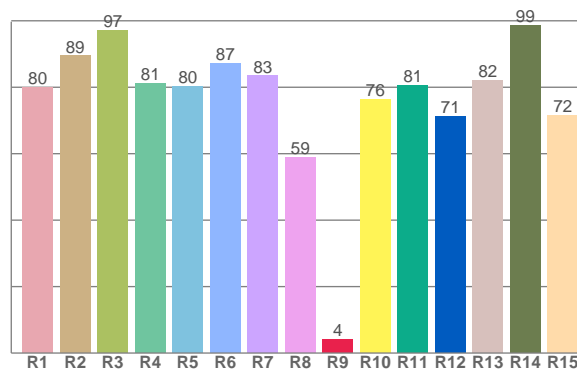
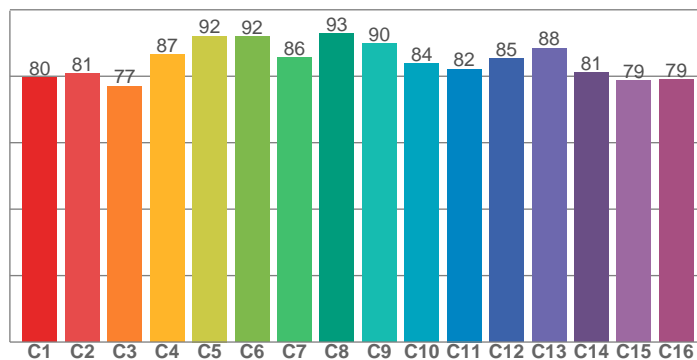


COLOR DETAILS



TM30: 84.7

CRI: 82.1 (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	81.1	80.2	87.2	83.4	58.8	4.1	76.2	80.6	71.1	82.1	98.6	71.6

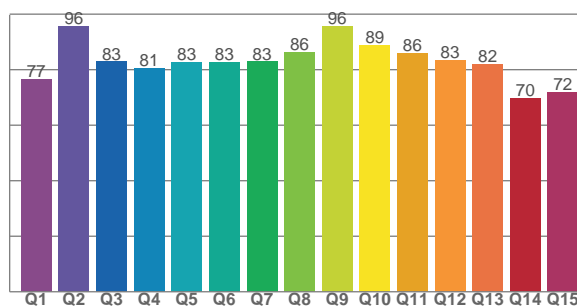
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
79.7	80.8	77.0	86.6	92.1	91.9	85.6	92.9	89.8	83.9	82.2	85.4	88.5	81.2	78.8	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	82.8	82.6	83.0	86.4	95.7	88.9	85.9	83.4	82.1	69.8	72.0

CQS: 81.7



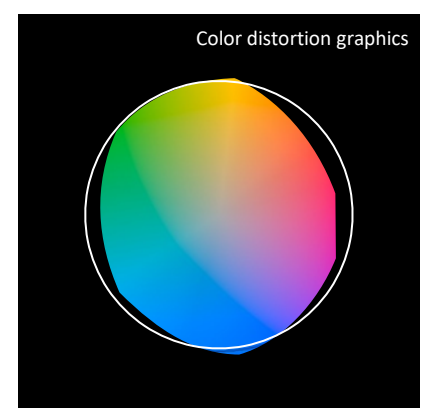
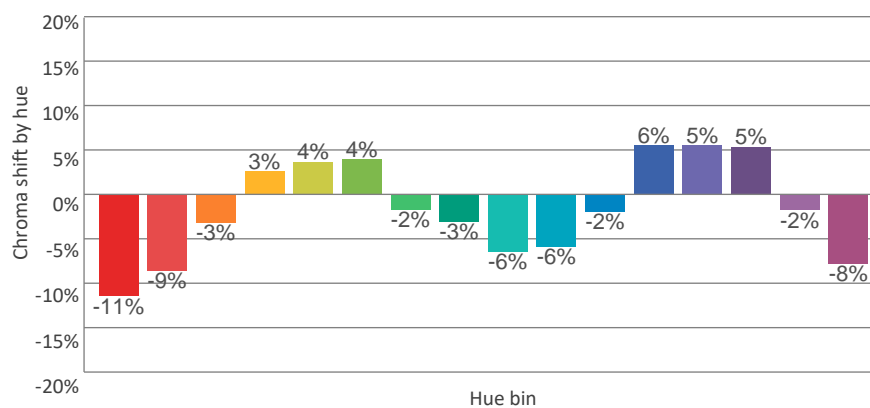
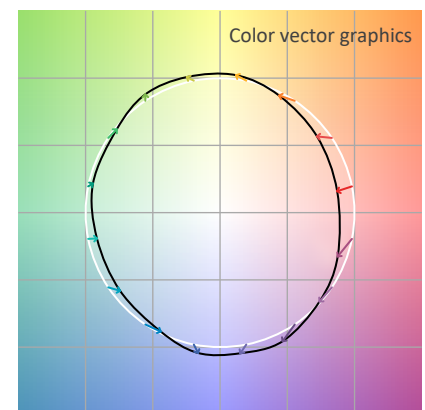
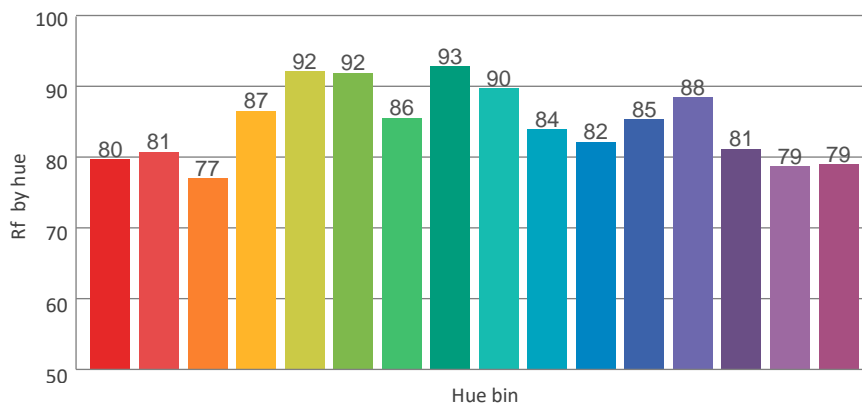
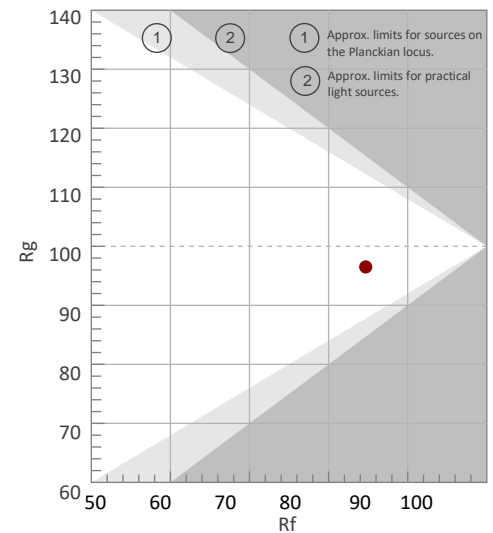
COLOR PARAMETERS

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
3056 K	82.1	4.1	84.7	96.5	81.7	0.435	0.406	0.248	0.348	0.0010

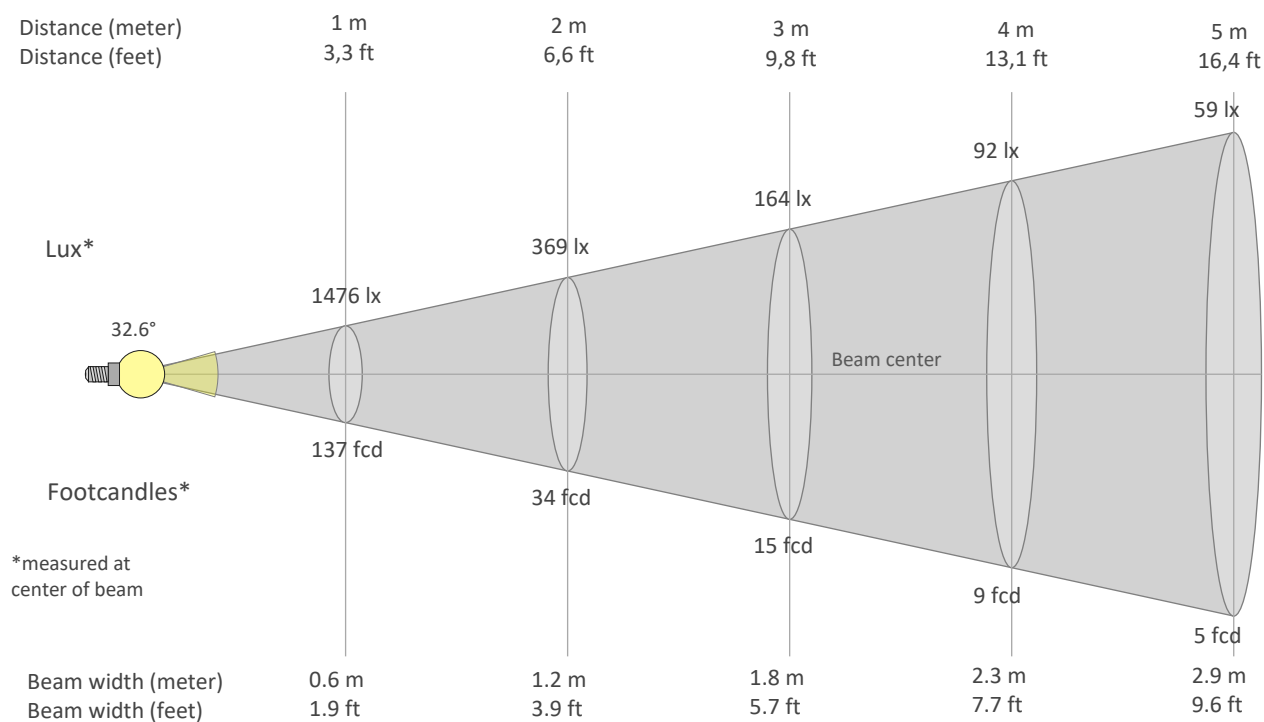
Rf 84.7
Fidelity index Rf

Rg 96.5
Gammut index Rg

Hue Bin	Graphic shifts (%)		
	R _f	Chroma	Hue
1	80	-11%	-1%
2	81	-9%	7%
3	77	-3%	12%
4	87	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	5%	-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
1476lx	369lx	164lx	92lx	59lx	41lx	30lx	23lx	18lx	15lx	12lx	10lx	9lx	8lx	7lx	6lx	5lx	5lx	4lx	4lx
137.2fcd	34.3fcd	15.2fcd	8.6fcd	5.5fcd	3.8fcd	2.8fcd	2.1fcd	1.7fcd	1.4fcd	1.1fcd	1fcd	0.8fcd	0.7fcd	0.6fcd	0.5fcd	0.5fcd	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°
1476	1476	1469	1446	1392	1295	1154	973	768	563	381	242	144	77	39	24	20	18	17	16
100%	100%	99%	98%	94%	88%	78%	66%	52%	38%	26%	16%	10%	5%	3%	2%	1%	1%	1%	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°
1476	1476	1469	1446	1392	1295	1154	973	768	563	381	242	144	77	39	24	20	18	17	16
100%	100%	99%	98%	94%	88%	78%	66%	52%	38%	26%	16%	10%	5%	3%	2%	1%	1%	1%	1%

Intensities in 180° c-plane

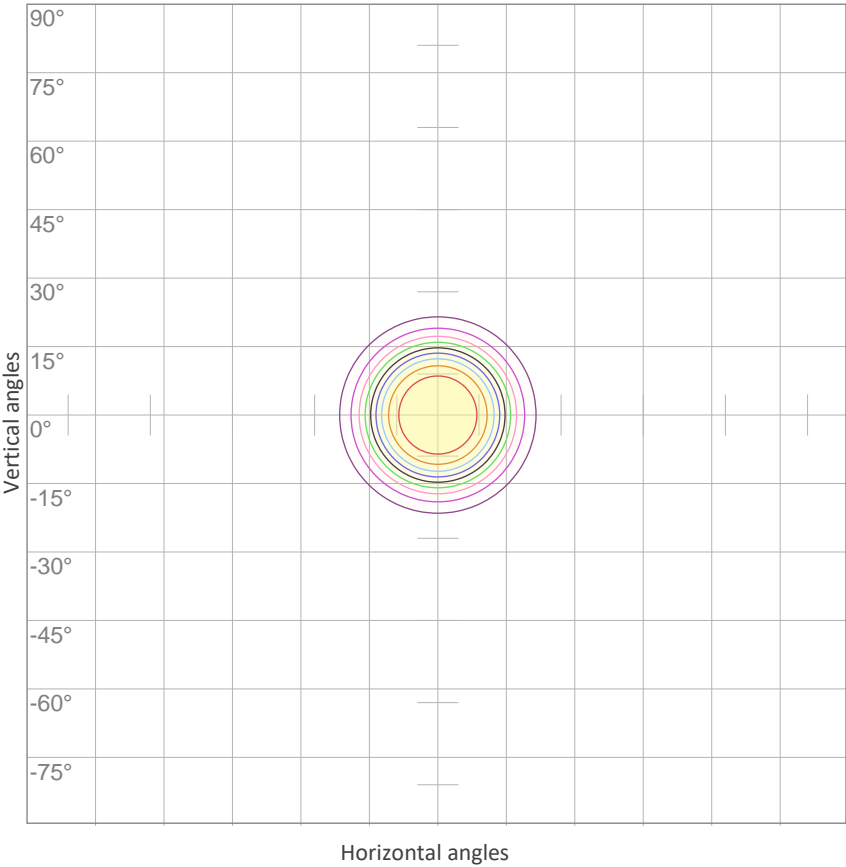
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1476	1476	1469	1446	1392	1295	1154	973	768	563	381	242	144	77	39	24	20	18	17	16
100%	100%	99%	98%	94%	88%	78%	66%	52%	38%	26%	16%	10%	5%	3%	2%	1%	1%	1%	1%

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°
1476	1476	1469	1446	1392	1295	1154	973	768	563	381	242	144	77	39	24	20	18	17	16
100%	100%	99%	98%	94%	88%	78%	66%	52%	38%	26%	16%	10%	5%	3%	2%	1%	1%	1%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
32.6°	47.8°	56.3°	99.3%	97.9%

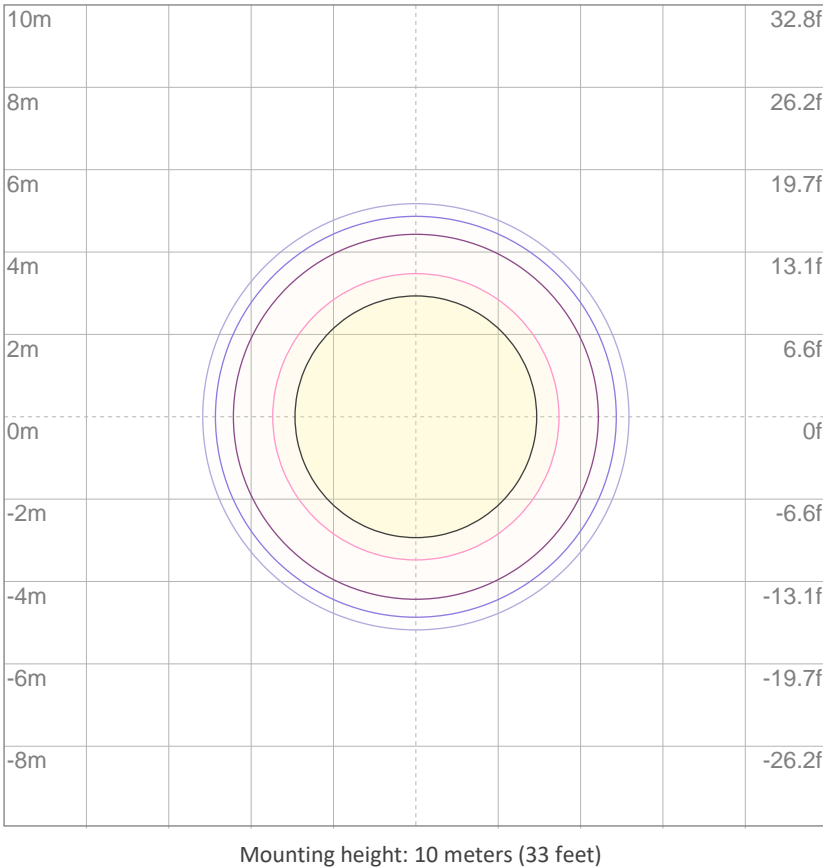
ISO CANDELA DIAGRAM



10%	148 cd
20%	295 cd
30%	443 cd
40%	591 cd
50%	738 cd
60%	886 cd
70%	1033 cd
80%	1181 cd
90%	1329 cd

Conditions:
Number of c-planes: 8
Candela at center: 1476 cd

ISO LUX DIAGRAM



3%	0.443 lx
5%	0.738 lx
10%	1.48 lx
30%	4.43 lx
50%	{LUX_10M50} lx

Conditions:
Number of c-planes: 8
Lux at center: 14.8 lx

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

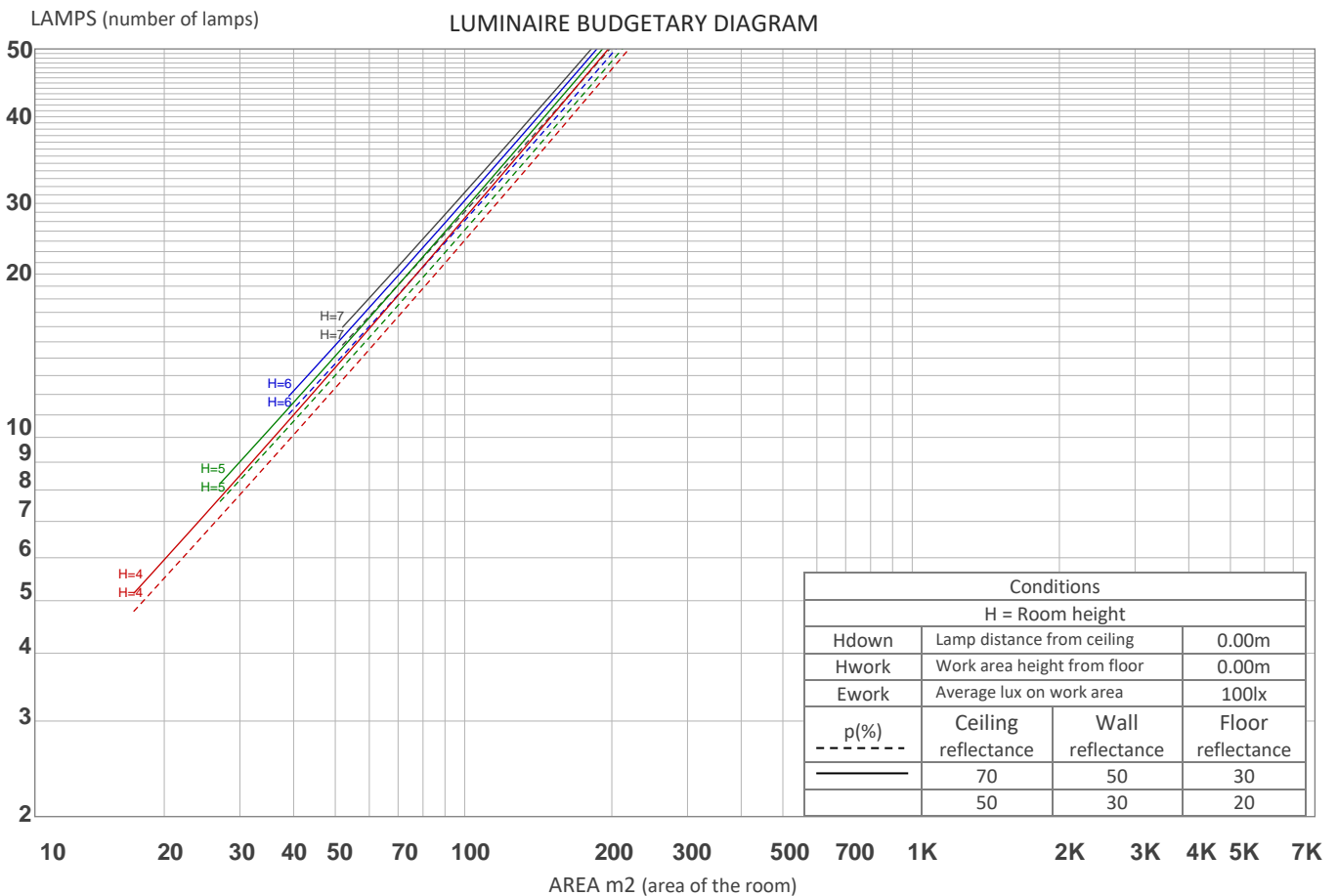
UGR

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	5.7	6.1	5.8	6.3	6.5	5.7	6.1	5.8	6.3	6.5
	3H	5.4	5.9	5.7	6.1	6.3	5.4	5.9	5.7	6.1	6.3
	4H	5.3	5.8	5.7	6.1	6.3	5.3	5.8	5.7	6.1	6.3
	6H	5.3	5.7	5.6	6.0	6.4	5.3	5.7	5.6	6.0	6.4
	8H	5.2	5.7	5.6	6.0	6.4	5.2	5.7	5.6	6.0	6.4
	12H	5.2	5.6	5.5	6.0	6.4	5.2	5.6	5.5	6.0	6.4
4H	2H	5.3	5.9	5.7	6.1	6.4	5.3	5.9	5.7	6.1	6.4
	3H	5.2	5.7	5.6	6.0	6.4	5.2	5.7	5.6	6.0	6.4
	4H	5.1	5.5	5.5	5.9	6.4	5.1	5.5	5.5	5.9	6.4
	6H	5.0	5.5	5.5	5.8	6.2	5.0	5.5	5.5	5.8	6.2
	8H	5.0	5.4	5.5	5.7	6.1	5.0	5.4	5.5	5.7	6.1
	12H	4.9	5.2	5.4	5.6	6.1	4.9	5.2	5.4	5.6	6.1
8H	4H	4.9	5.4	5.5	5.7	6.1	4.9	5.4	5.5	5.7	6.1
	6H	4.9	5.1	5.4	5.6	6.1	4.9	5.1	5.4	5.6	6.1
	8H	4.9	5.1	5.4	5.6	6.2	4.9	5.1	5.4	5.6	6.2
	12H	4.8	5.0	5.4	5.5	6.1	4.8	5.0	5.4	5.5	6.1
12H	4H	4.9	5.2	5.4	5.6	6.1	4.9	5.2	5.4	5.6	6.1
	6H	4.9	5.1	5.4	5.6	6.2	4.9	5.1	5.4	5.6	6.2
	8H	4.8	5.0	5.4	5.5	6.1	4.8	5.0	5.4	5.5	6.1
Variation of the observer position for the luminaire distance S											
S = 1.0H		2.2 / -5.0					2.2 / -5.0				
S = 1.5H		4.4 / -12.9					4.4 / -12.9				
S = 2.0H		6.2 / -14.8					6.2 / -14.8				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 447 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	112	110	109	107	106	105	104	103	102	101	99	98	98	96
2	111	107	104	101	109	105	103	100	102	100	98	99	97	96	97	95	94	92
3	107	102	99	96	105	101	98	95	98	96	93	96	94	92	94	92	90	89
4	104	98	94	91	102	97	93	91	95	92	89	93	91	88	91	89	87	86
5	100	94	90	87	99	94	90	87	92	89	86	90	87	85	89	86	84	83
6	97	91	87	84	96	90	86	83	89	85	83	88	85	82	86	84	82	81
7	95	88	84	81	93	87	83	80	86	83	80	85	82	80	84	81	79	78
8	92	85	81	78	91	85	81	78	84	80	77	83	79	77	82	79	77	76
9	89	83	78	75	88	82	78	75	81	78	75	80	77	75	80	77	75	74
10	87	80	76	73	86	80	76	73	79	75	73	78	75	73	78	75	73	72

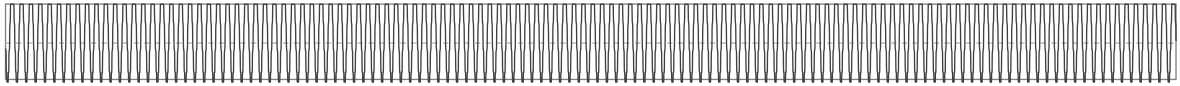


ZONAL LUMEN SUMMARY

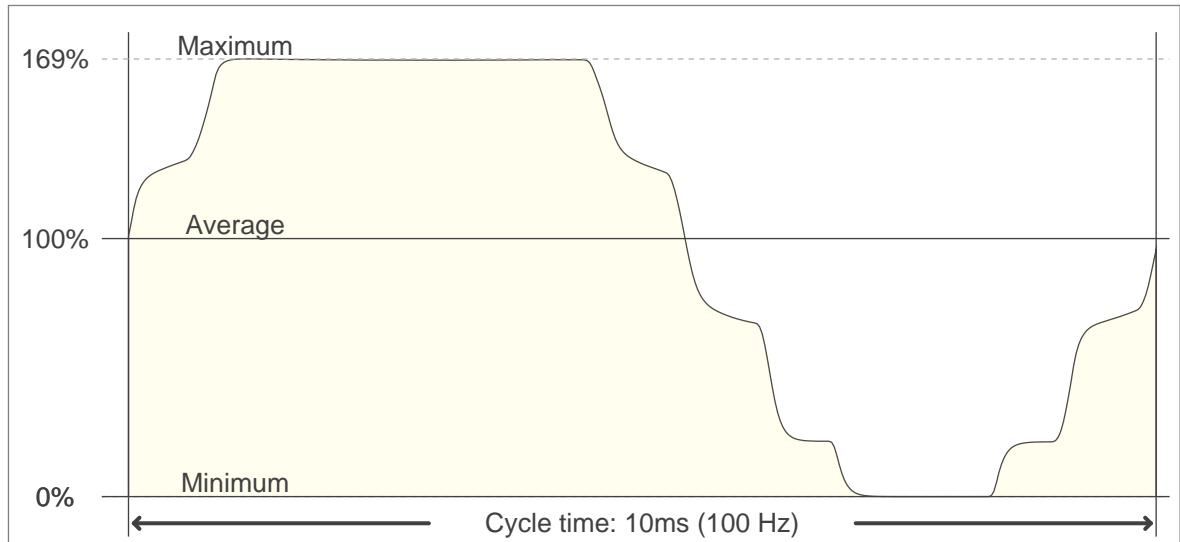
0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
135 lm	229 lm	58.9 lm	11.0 lm	7.66 lm	2.93 lm	0.417 lm	0.173 lm	0.154 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.150 lm	0.145 lm	0.202 lm	0.271 lm	0.378 lm	0.499 lm	0.503 lm	0.334 lm	0.097 lm

FLICKER

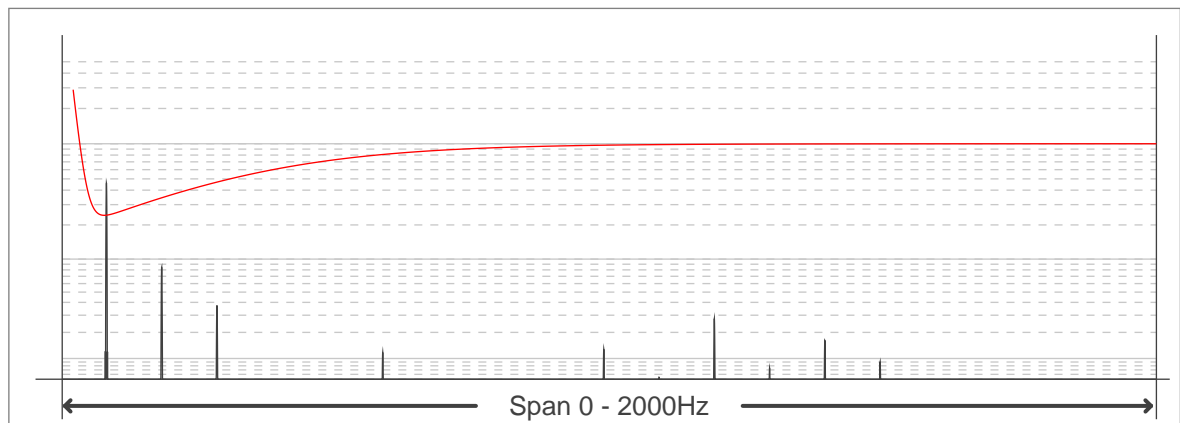
FLICKER CURVE (COMPLETE SAMPLED FLICKER)



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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