

PHOTOMETRIC TEST REPORT

OBSCURA SQUARE MATT WHITE

astro

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LIGHT EFFICIENCY:

54 Lumen/Watt

LIGHT QUALITY:

CRI: 93.9

COLOR TEMPERATURE:

2745 K

OUTPUT: 426 lm

PEAK: 977 cd

POWER: 7.8 W

PF: 0.93



Tracking number: [n/a](#)

Product name:

Obscura Square Matt White

Item number:

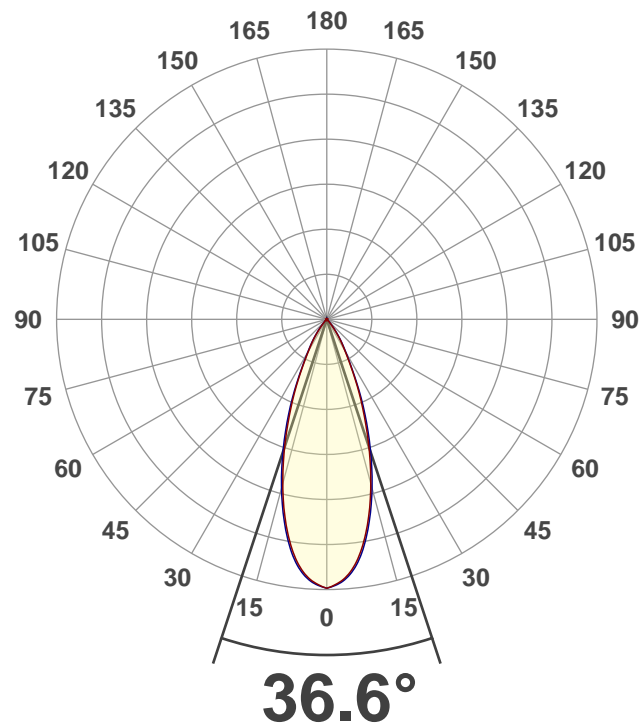
1381008

Date and time:

20/09/2019 12:12:30

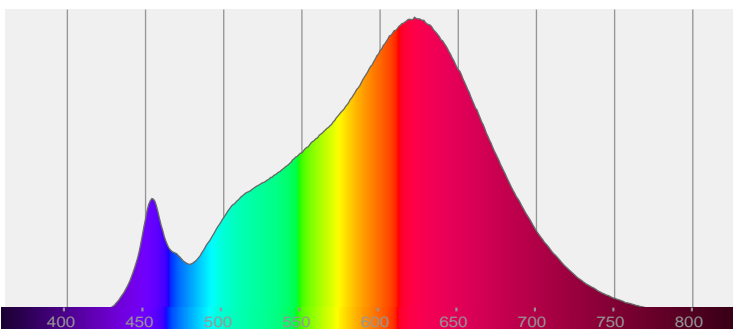
Description:

IP65 LED Downlight

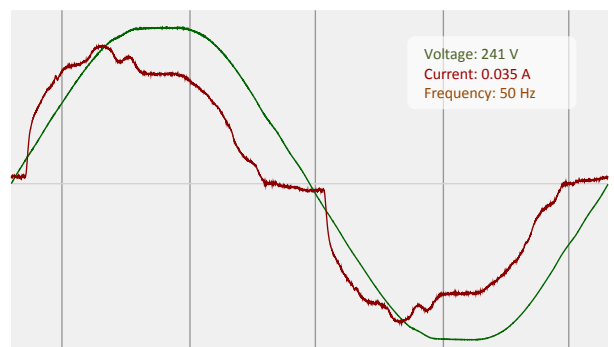


CIE 1931
x: 0.456
y: 0.410

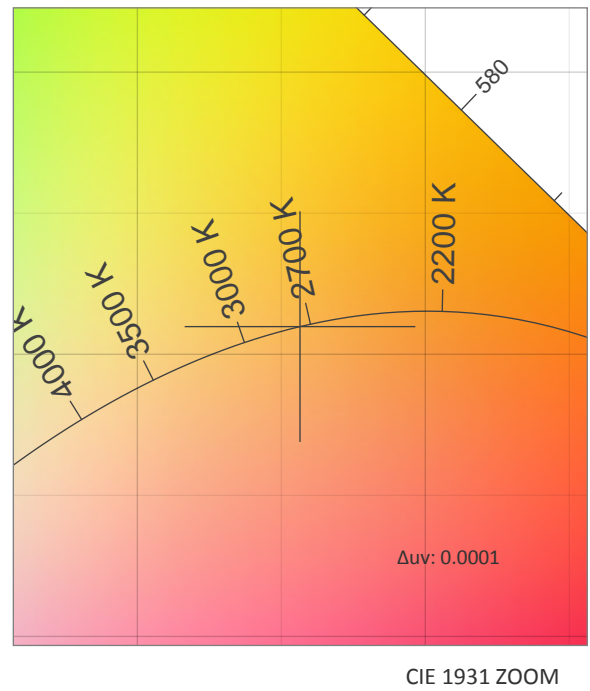
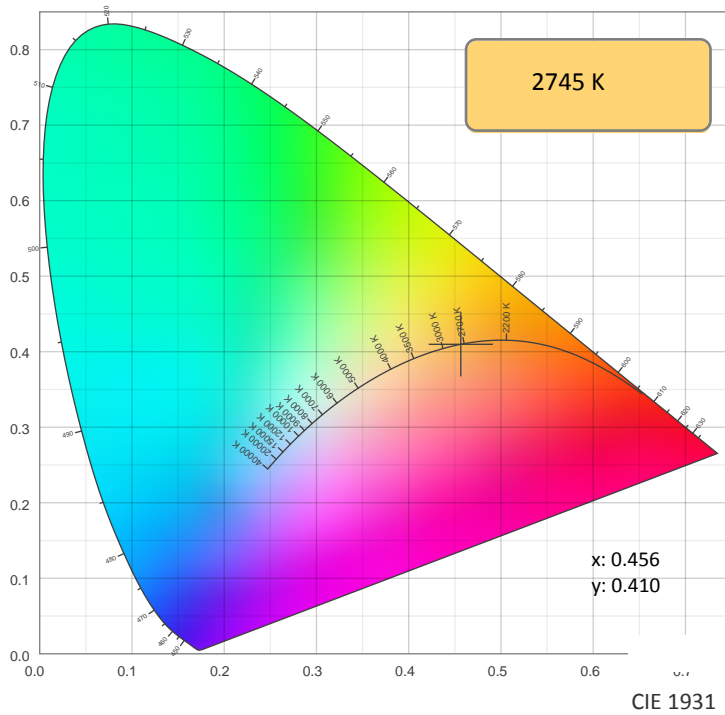
SPECTRA



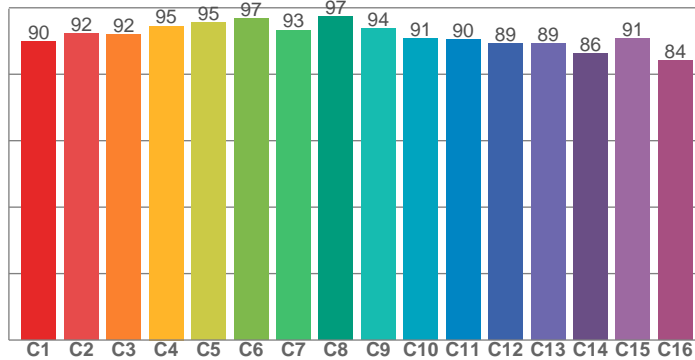
POWER



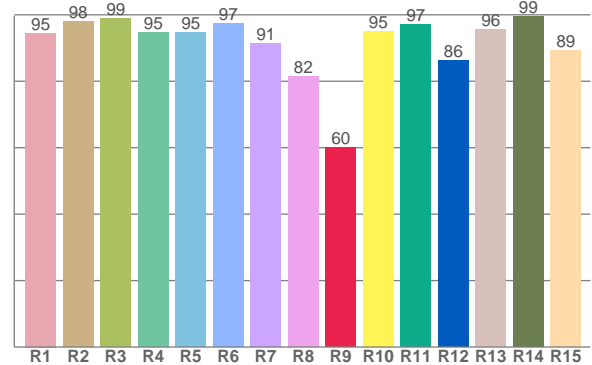
COLOR DETAILS



TM30: 91.7



CRI: 93.9 (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
94.5	98.0	98.9	94.7	94.7	97.4	91.3	81.5	60.1	94.9	97.0	86.2	95.7	99.5	89.3

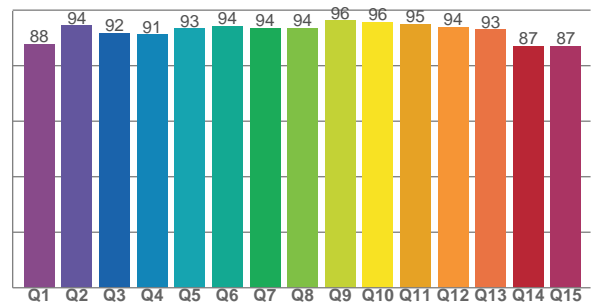
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
89.8	92.2	91.8	94.5	95.4	96.7	93.3	97.3	93.7	90.7	90.4	89.2	89.3	86.2	90.9	84.2

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
87.8	94.4	91.7	91.2	93.3	94.4	93.6	93.6	96.3	95.7	95.1	93.9	92.9	87.0	87.2

CQS: 91.8



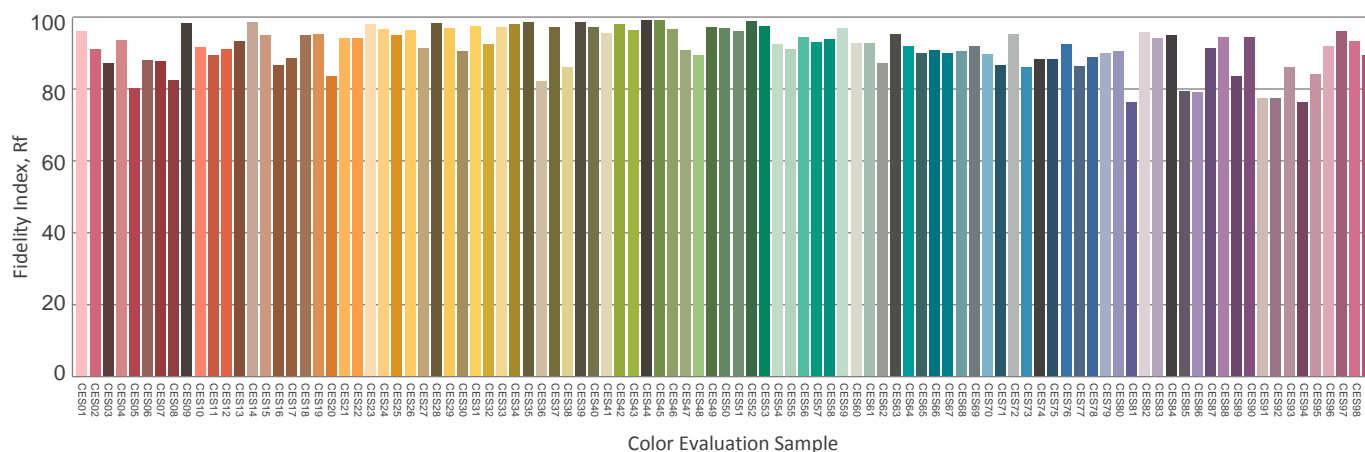
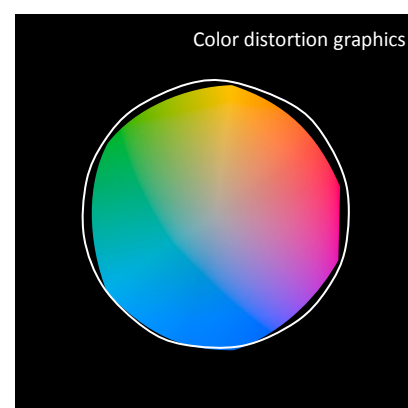
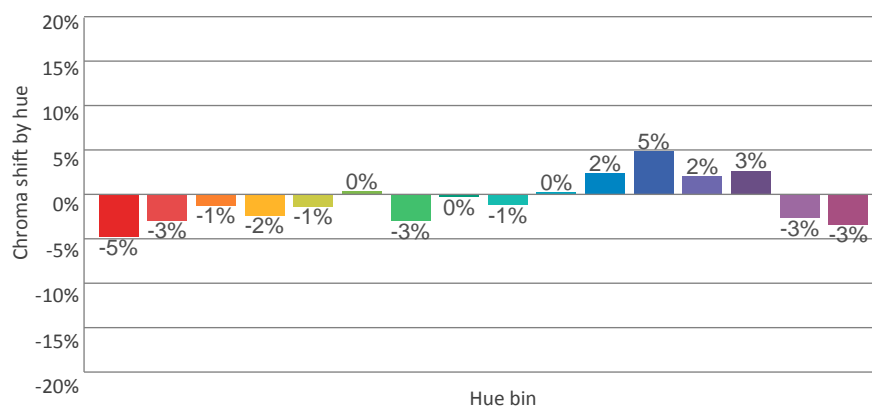
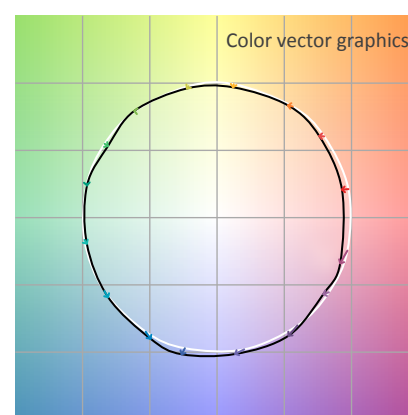
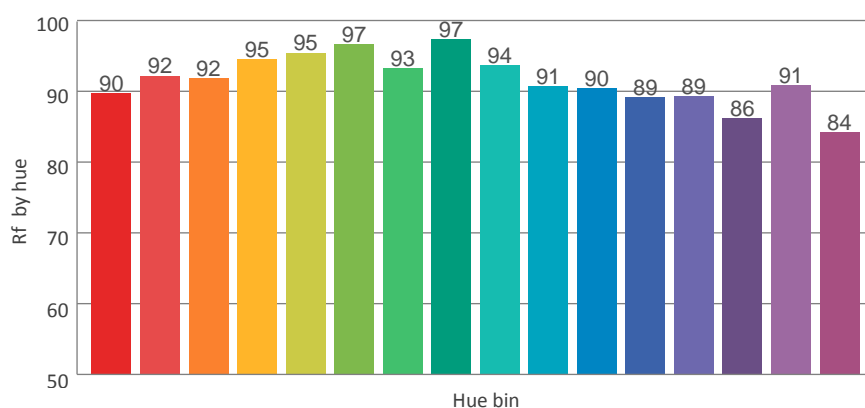
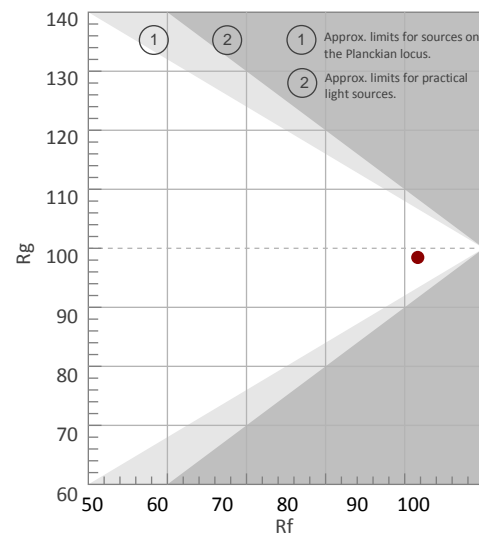
COLOR PARAMETERS

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
2745 K	93.9	60.1	91.7	98.5	91.8	0.456	0.410	0.261	0.351	0.0001

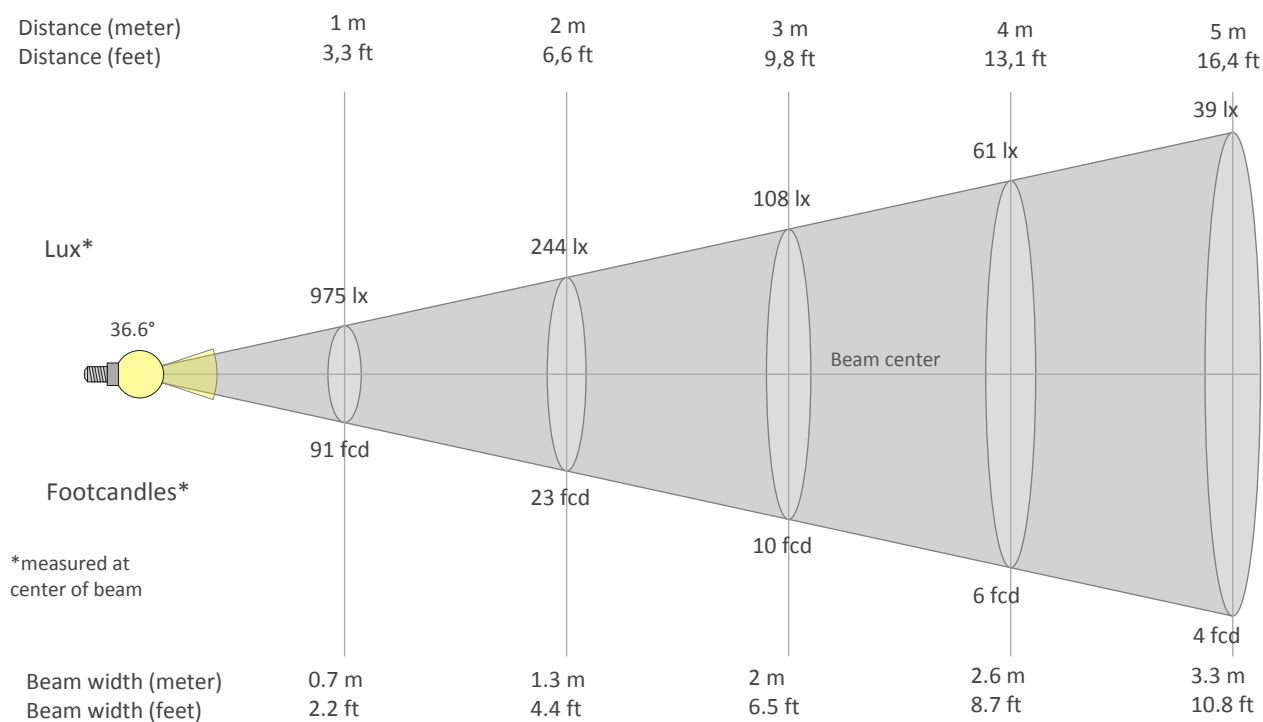
Rf 91.7
Fidelity index Rf

Rg 98.5
Gammut index Rg

Hue Bin	Graphic shifts (%)		
	Rf	Chroma	Hue
1	90	-5%	1%
2	92	-3%	2%
3	92	-1%	3%
4	95	-2%	0%
5	95	-1%	2%
6	97	0%	0%
7	93	-3%	0%
8	97	0%	1%
9	94	-1%	3%
10	91	0%	5%
11	90	2%	6%
12	89	5%	-1%
13	89	2%	-7%
14	86	3%	-10%
15	91	-3%	-3%
16	84	-3%	-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
975lx	244lx	108lx	61lx	39lx	27lx	20lx	15lx	12lx	10lx	8lx	7lx	6lx	5lx	4lx	4lx	3lx	3lx	3lx	2lx
90.6fcd	22.7fcd	10.1fcd	5.7fcd	3.6fcd	2.5fcd	1.8fcd	1.4fcd	1.1fcd	0.9fcd	0.7fcd	0.6fcd	0.5fcd	0.5fcd	0.4fcd	0.4fcd	0.3fcd	0.3fcd	0.3fcd	0.2fcd

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°
975	965	943	909	862	802	733	658	579	500	422	349	284	223	172	133	105	80	57	37
100%	99%	97%	93%	88%	82%	75%	67%	59%	51%	43%	36%	29%	23%	18%	14%	11%	8%	6%	4%

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°
975	968	948	917	873	814	747	674	598	520	443	369	298	232	179	139	110	86	63	43
100%	99%	97%	94%	89%	83%	77%	69%	61%	53%	45%	38%	31%	24%	18%	14%	11%	9%	6%	4%

Intensities in 180° c-plane

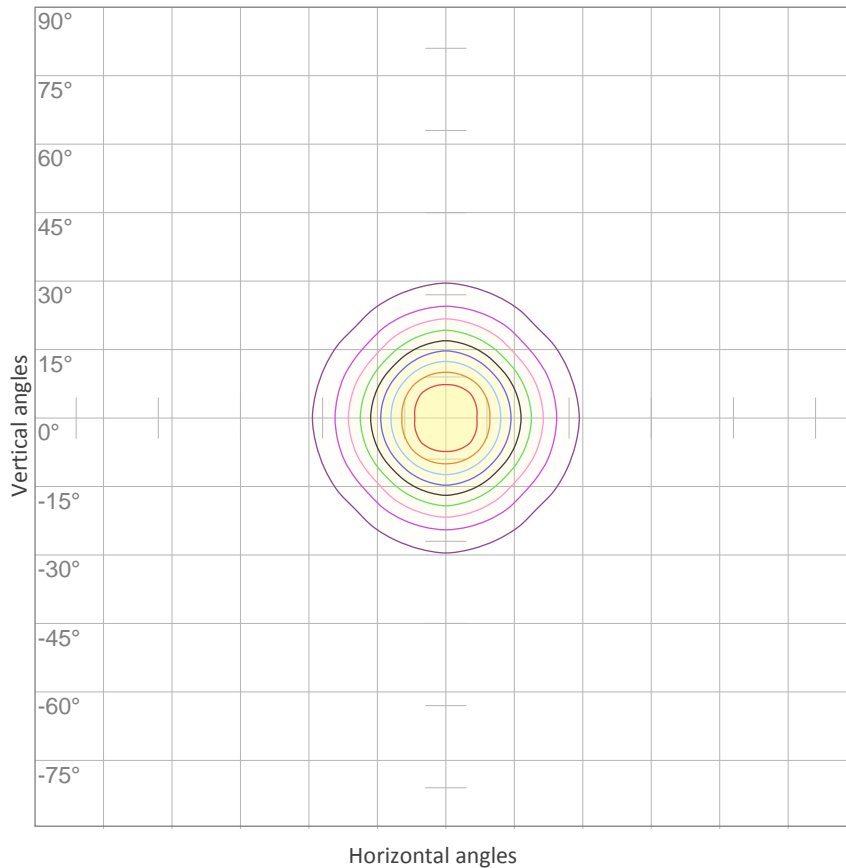
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
975	965	943	909	862	802	733	658	579	500	422	349	284	223	172	133	105	80	57	37
100%	99%	97%	93%	88%	82%	75%	67%	59%	51%	43%	36%	29%	23%	18%	14%	11%	8%	6%	4%

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°
975	968	948	917	873	814	747	674	598	520	443	369	298	232	179	139	110	86	63	43
100%	99%	97%	94%	89%	83%	77%	69%	61%	53%	45%	38%	31%	24%	18%	14%	11%	9%	6%	4%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
36.6°	64.4°	79.5°	99.0%	97.6%

ISO CANDELA DIAGRAM



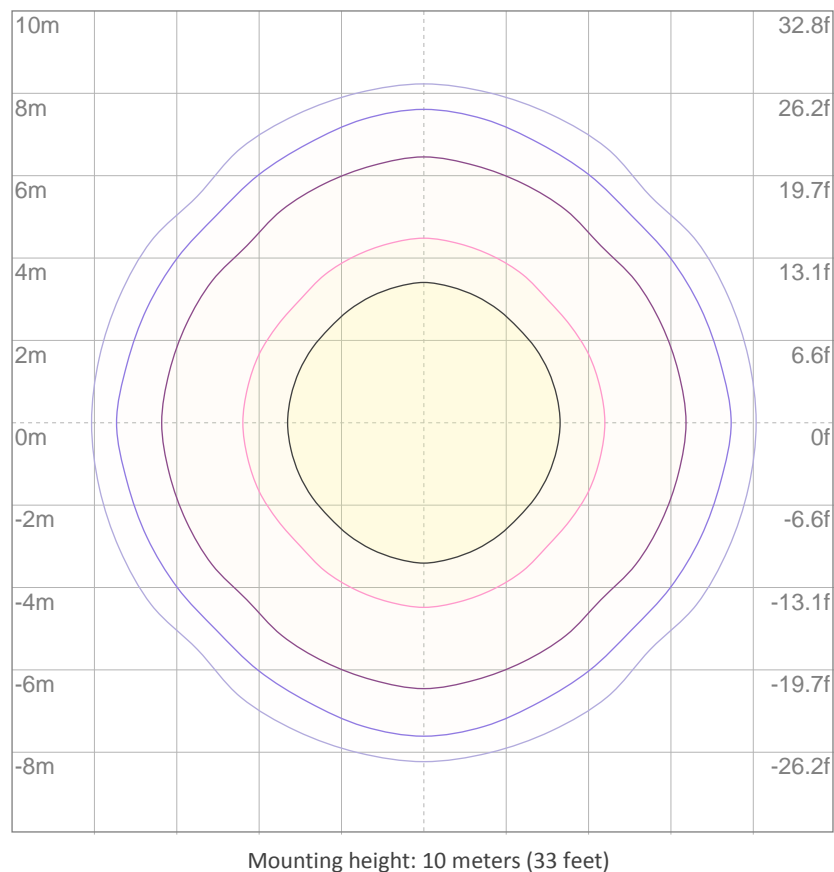
10%	98 cd
20%	195 cd
30%	293 cd
40%	390 cd
50%	488 cd
60%	585 cd
70%	683 cd
80%	780 cd
90%	878 cd

Conditions:

Number of c-planes: 8

Candela at center: 975 cd

ISO LUX DIAGRAM



3%	0.293 lx
5%	0.488 lx
10%	0.975 lx
30%	2.93 lx
50%	{LUX_10M50} lx

Conditions:

Number of c-planes: 8

Lux at center: 9.75 lx

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

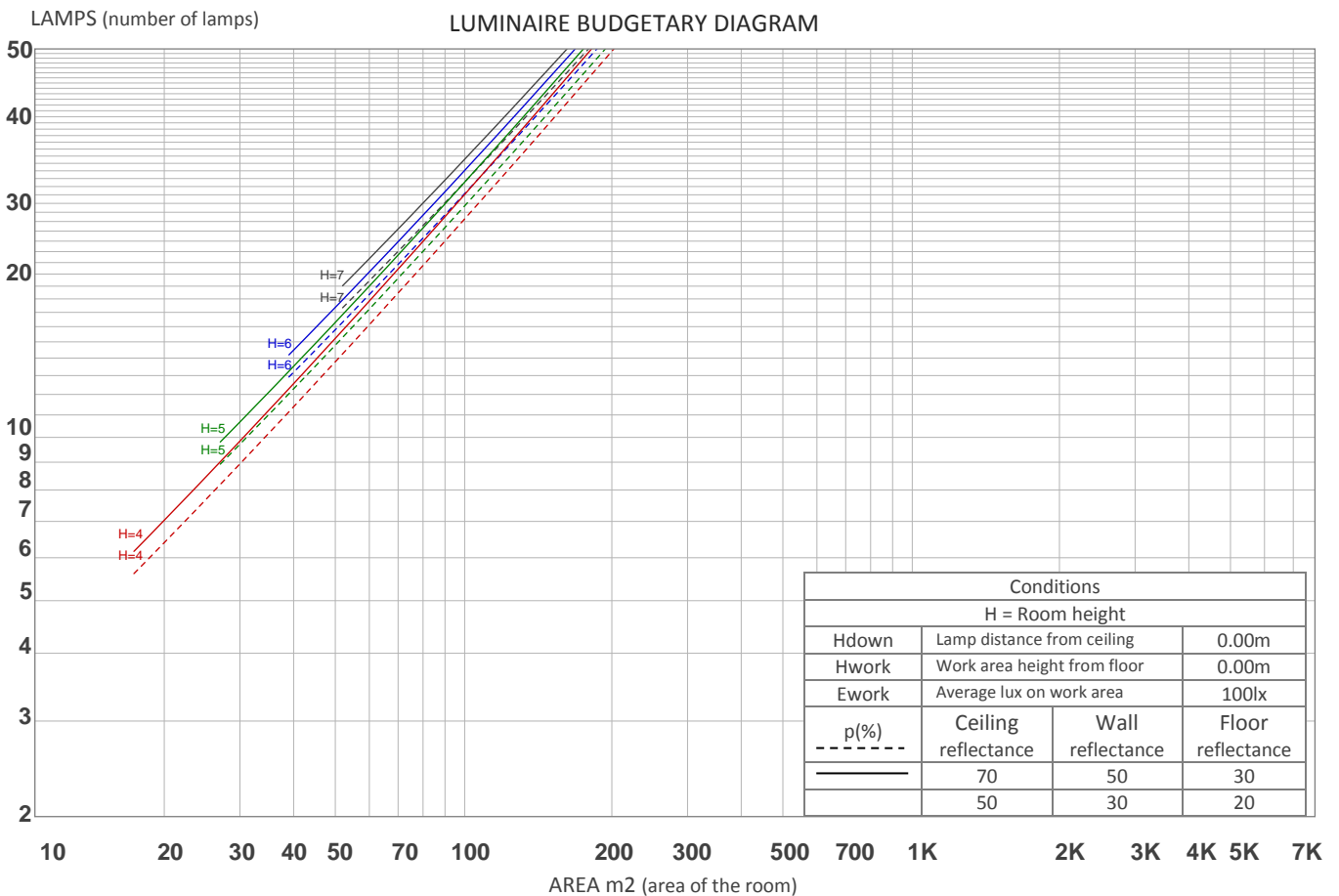
UGR

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	14.3	15.0	14.5	15.2	15.4	14.7	15.3	14.9	15.5	15.7
	3H	14.2	14.8	14.5	15.1	15.3	14.6	15.2	14.9	15.4	15.7
	4H	14.2	14.7	14.5	15.0	15.2	14.5	15.1	14.8	15.4	15.6
	6H	14.1	14.6	14.4	14.9	15.2	14.5	15.0	14.8	15.3	15.6
	8H	14.1	14.6	14.4	14.8	15.2	14.4	14.9	14.8	15.2	15.5
	12H	14.0	14.5	14.4	14.8	15.1	14.4	14.9	14.8	15.2	15.5
4H	2H	14.2	14.7	14.5	15.0	15.2	14.5	15.1	14.8	15.3	15.6
	3H	14.1	14.5	14.4	14.9	15.2	14.4	14.9	14.8	15.2	15.5
	4H	14.0	14.4	14.4	14.8	15.1	14.4	14.8	14.8	15.1	15.5
	6H	14.0	14.3	14.4	14.7	15.0	14.3	14.7	14.7	15.0	15.4
	8H	13.9	14.2	14.3	14.6	15.0	14.3	14.6	14.7	15.0	15.4
	12H	13.9	14.2	14.3	14.6	15.0	14.3	14.5	14.7	14.9	15.4
8H	4H	13.9	14.2	14.3	14.6	15.0	14.3	14.6	14.7	15.0	15.4
	6H	13.8	14.1	14.3	14.5	14.9	14.2	14.4	14.7	14.9	15.3
	8H	13.8	14.0	14.3	14.4	14.9	14.2	14.4	14.6	14.8	15.3
	12H	13.8	13.9	14.3	14.4	14.9	14.1	14.3	14.6	14.8	15.3
12H	4H	13.9	14.1	14.3	14.5	15.0	14.2	14.5	14.7	14.9	15.3
	6H	13.8	14.0	14.3	14.4	14.9	14.2	14.3	14.6	14.8	15.3
	8H	13.8	13.9	14.3	14.4	14.9	14.1	14.3	14.6	14.7	15.3
Variation of the observer position for the luminaire distance S											
S = 1.0H	+5.5 / -6.8					+5.4 / -6.5					
S = 1.5H	+8.2 / -8.3					+8.2 / -7.8					
S = 2.0H	+10.2 / -9.8					+10.2 / -9.5					
Standard table	BK00					BK00					
Correction summand	-4.3					-3.9					
Corrected glare indices referring to 426 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	114	112	110	108	112	110	108	106	105	104	102	102	100	99	98	97	96	95
2	109	105	102	99	107	104	100	98	100	98	96	97	95	93	95	93	91	90
3	105	100	95	92	103	98	94	91	96	92	90	93	90	88	91	89	87	85
4	101	94	90	86	99	93	89	86	91	87	85	89	86	84	87	85	83	81
5	97	90	85	81	95	89	84	81	87	83	80	85	82	79	84	81	79	77
6	93	86	81	77	92	85	80	77	83	79	76	82	78	76	81	78	75	74
7	90	82	77	73	88	81	76	73	80	76	72	79	75	72	78	74	72	71
8	86	78	73	70	85	78	73	70	77	72	69	76	72	69	75	71	69	67
9	83	75	70	67	82	74	70	67	74	69	66	73	69	66	72	68	66	65
10	80	72	67	64	79	72	67	64	71	66	64	70	66	63	69	66	63	62

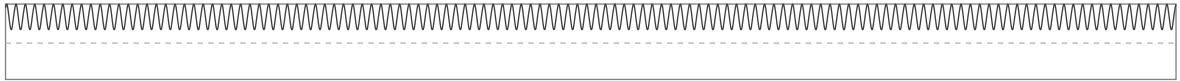


ZONAL LUMEN SUMMARY

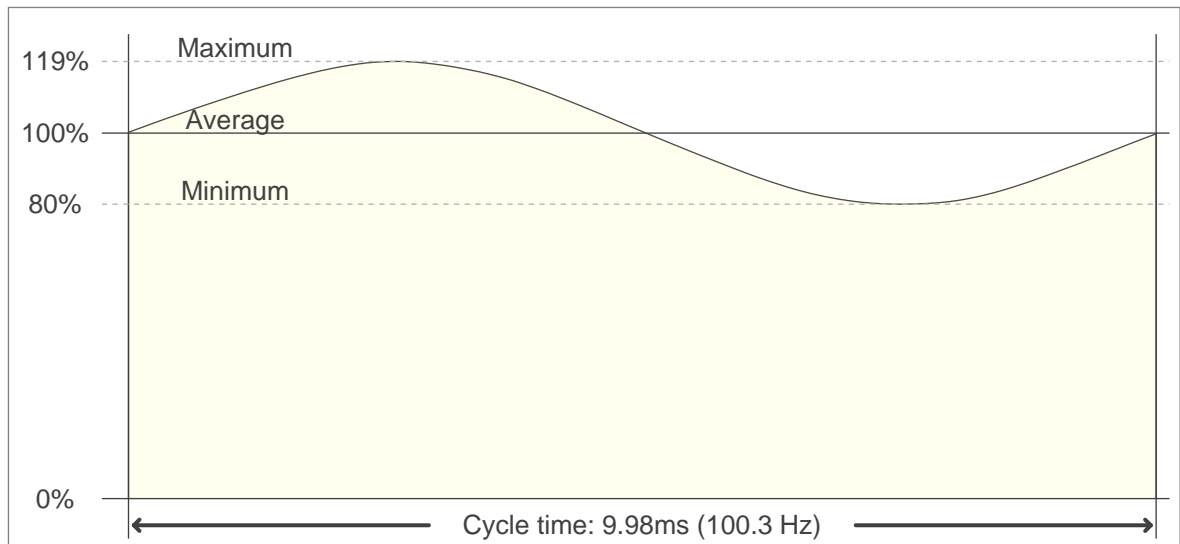
0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
85.3 lm	170 lm	114 lm	40.8 lm	8.37 lm	3.28 lm	1.57 lm	0.356 lm	0.186 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.140 lm	0.144 lm	0.159 lm	0.218 lm	0.290 lm	0.346 lm	0.335 lm	0.227 lm	0.074 lm

FLICKER

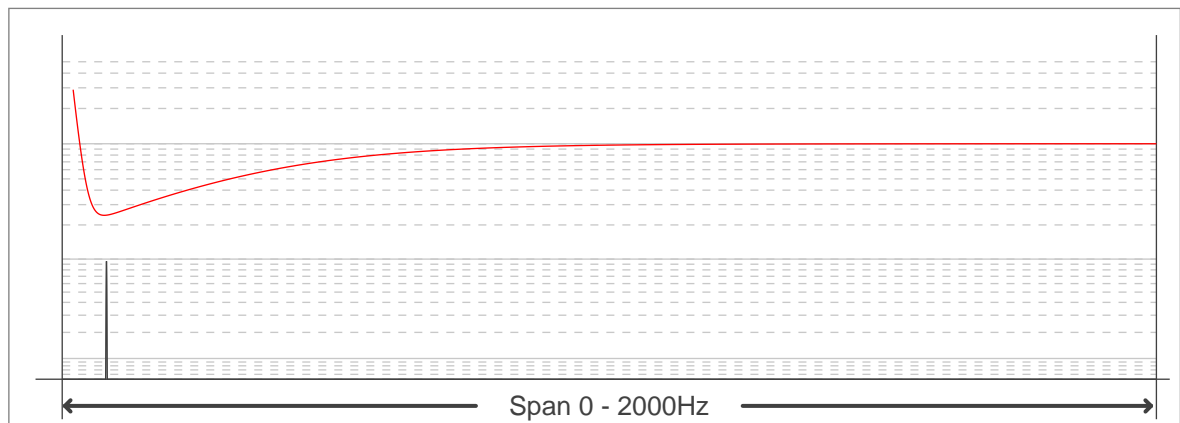
FLICKER CURVE (COMPLETE SAMPLED FLICKER)



FLICKER FRAME (FRAME OF ONE FLICKER PERIOD)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER CURVE)



FLICKER RESULTS:

Flicker frequency:	100.25 Hz
Flicker index:	0.06
Flicker percentage:	19.66 %
SVM: (Visual flicker)	0.75

FLICKER CONDITIONS:

Sample rate:	40000 samples/second
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