

PHOTOMETRIC TEST REPORT

MINIMA PRO SQUARE FIXED IP65
- MATT WHITE - 4001027

astro

MINIMA PRO SQUARE FIXED IP65 - MATT

astro

LIGHT EFFICIENCY:

96 Lumen/Watt

LIGHT QUALITY:

CRI: 96.3

COLOR TEMPERATURE:

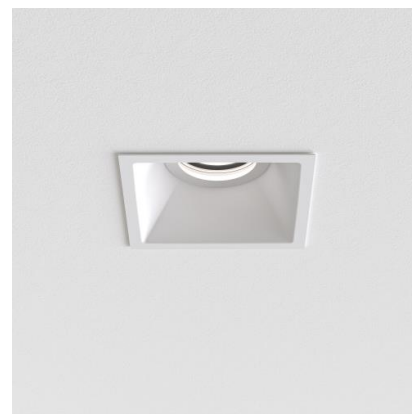
2679 K

OUTPUT: 1124 lm

PEAK: 3866 cd

POWER: 11.7 W

PF: 0.95



Tracking number: [n/a](#)

Product name:

Minima Pro Square Fixed IP65 - Matt
White - 4001027

Item number:

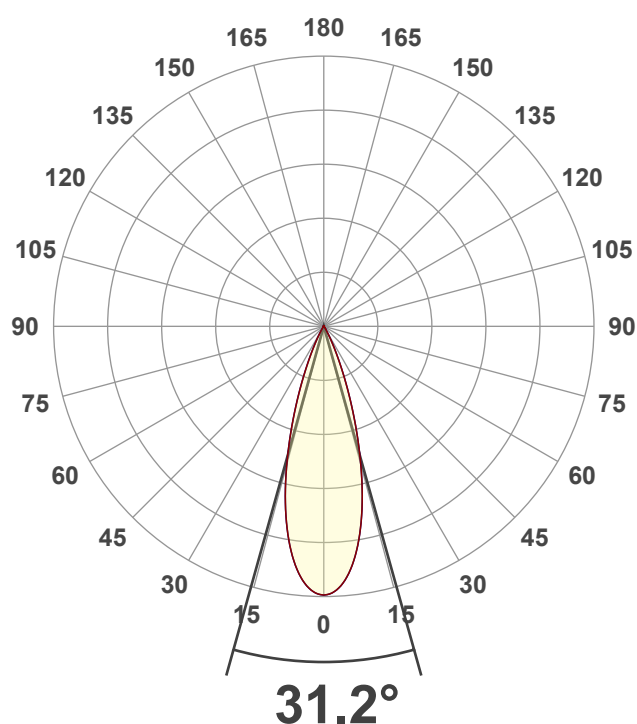
MSF-MW-HE27G1-30G1-X-D1

Date and time:

03/02/2025 09:40:13

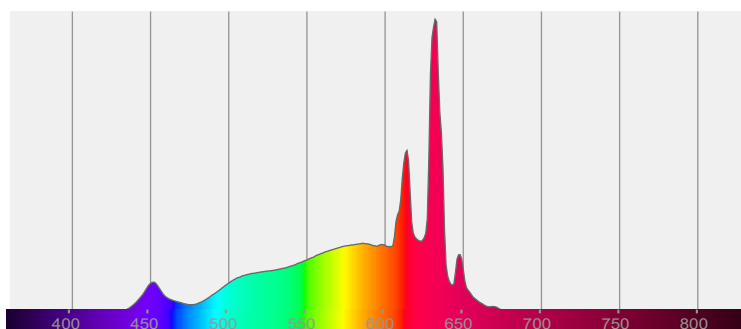
Description:

IP65 LED Downlight

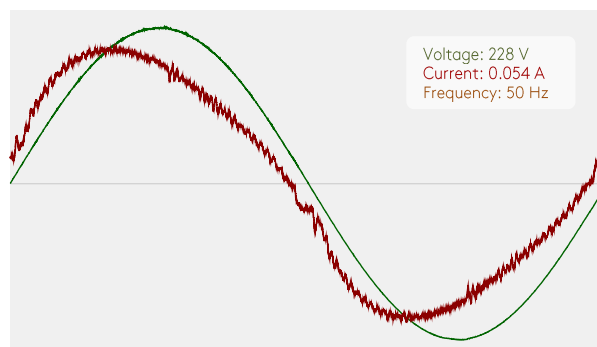


CIE 1931
x: 0.463
y: 0.412

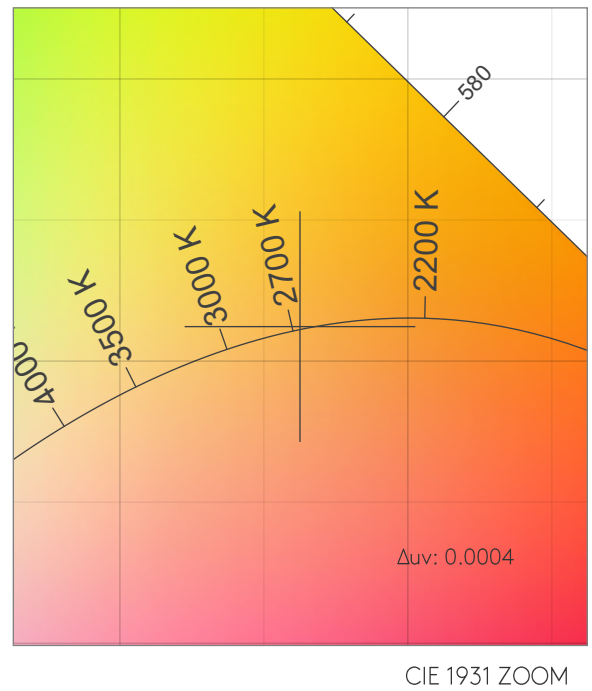
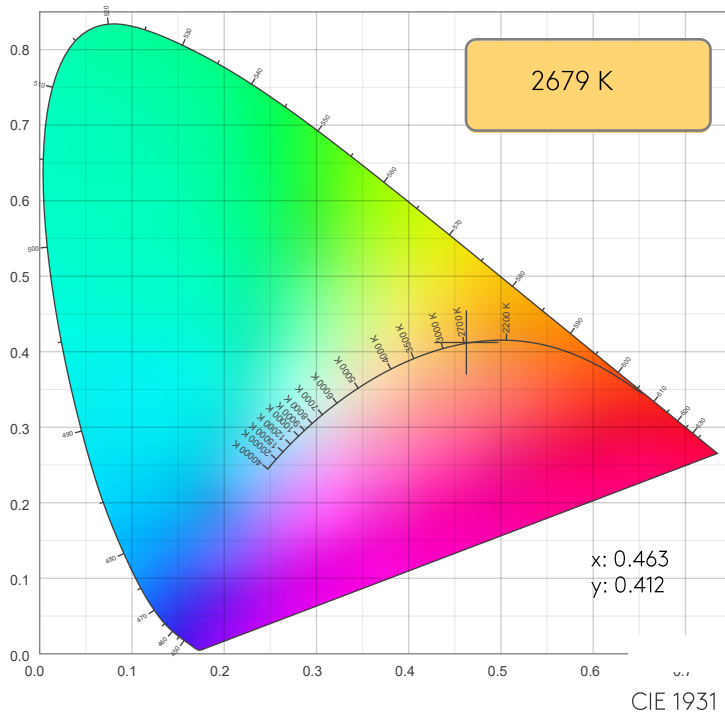
SPECTRA



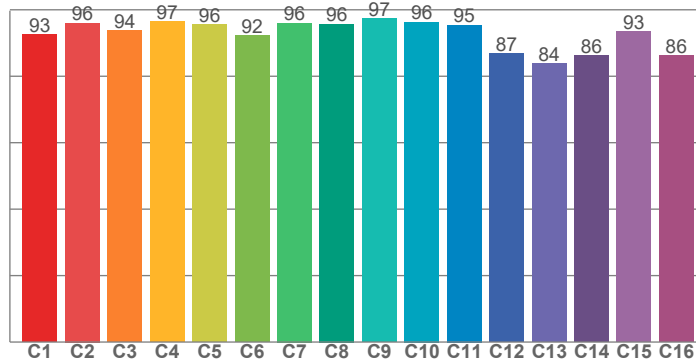
POWER



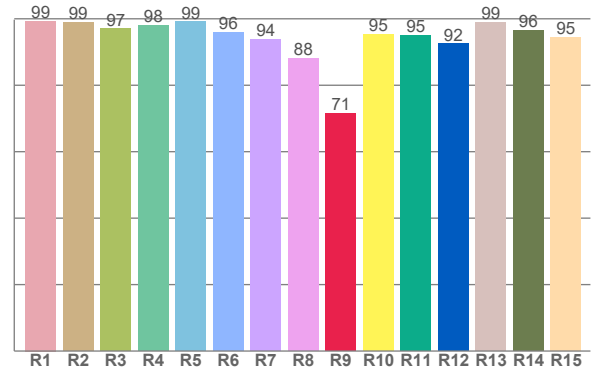
COLOR DETAILS



TM30: 93.3



CRI: 96.3 (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
99.3	98.9	96.9	98.0	99.1	95.8	93.8	88.2	71.4	95.4	95.1	92.5	98.9	96.5	94.5

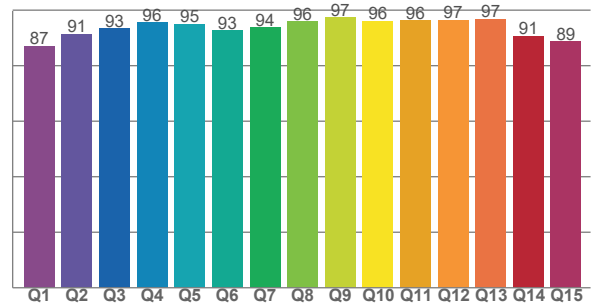
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92.6	96.0	93.8	96.5	95.7	92.2	96.0	95.7	97.3	96.3	95.4	86.9	83.8	86.2	93.4	86.1

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
87.2	91.4	93.4	95.6	95.0	92.6	93.8	95.9	97.3	96.1	96.2	96.5	96.8	90.7	88.7

CQS: 92.7



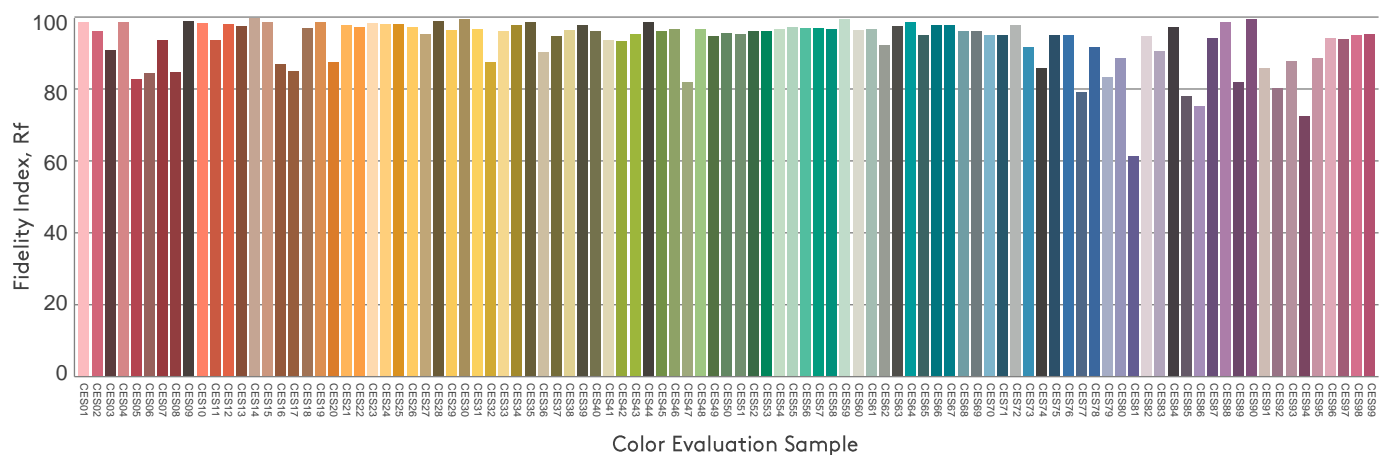
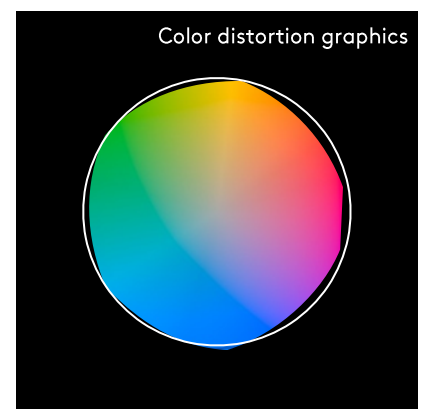
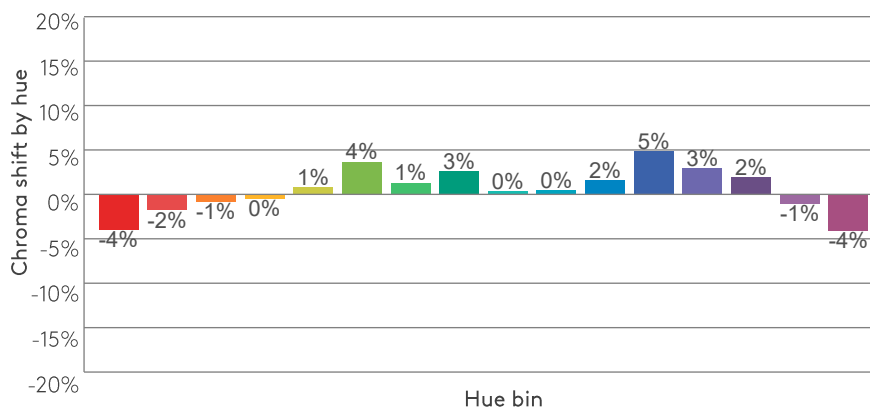
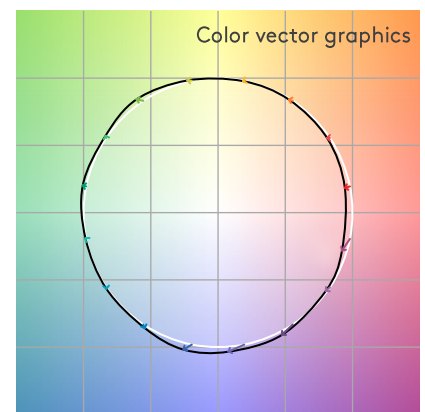
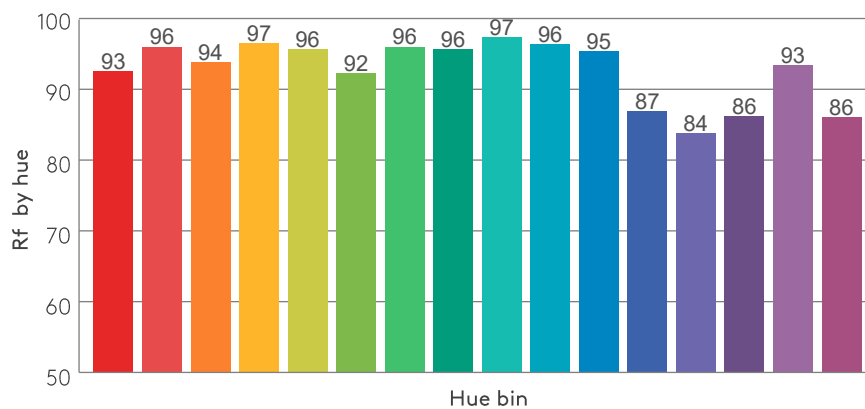
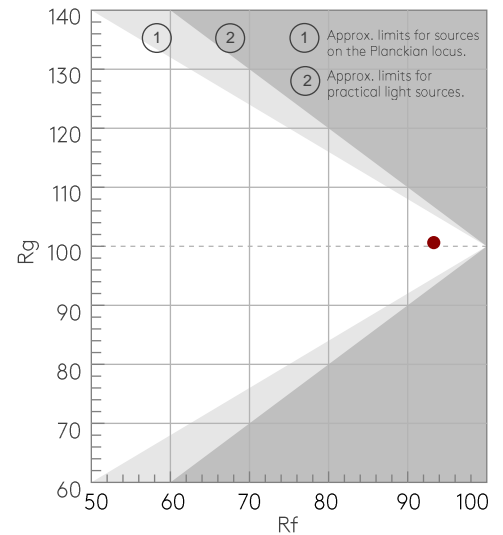
COLOR PARAMETERS

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
2679 K	96.3	71.4	93.3	100.6	92.7	0.463	0.412	0.263	0.352	0.0004

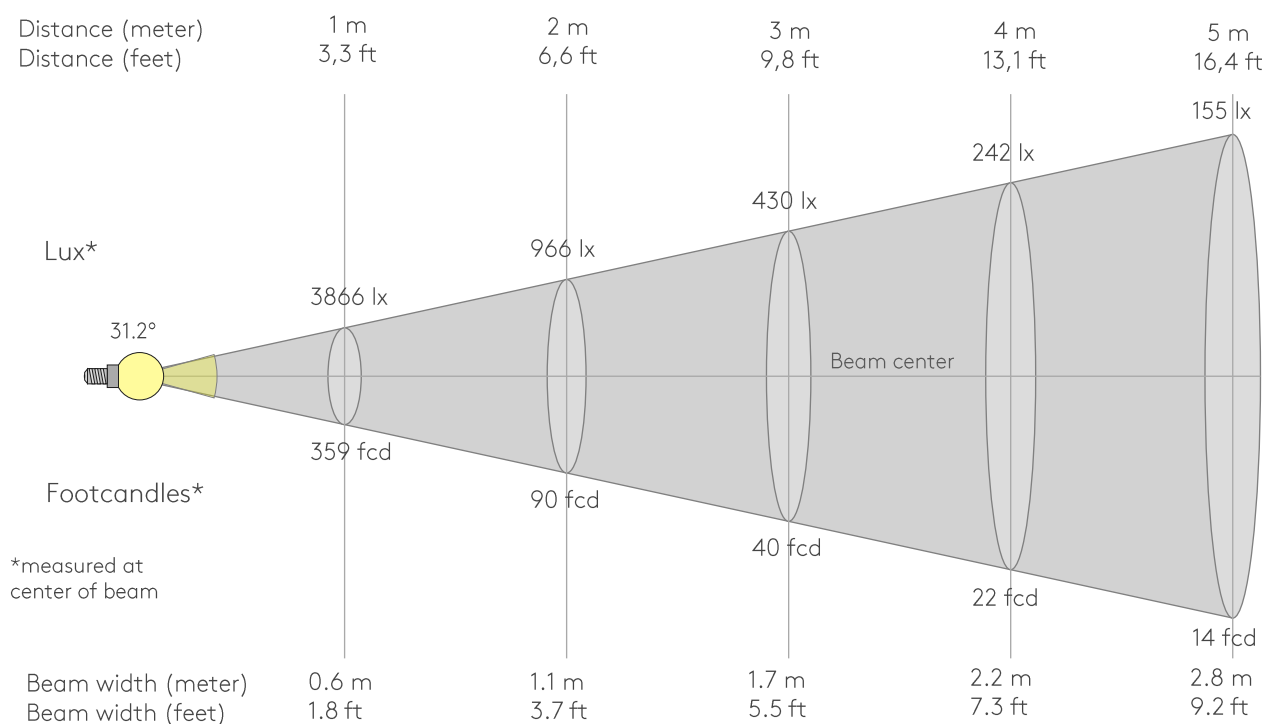
Rf 93.3
Fidelity index Rf

Rg 100.6
Gammut index Rg

Hue Bin	Rf	Graphic shifts (%)	
		Chroma	Hue
1	93	-4%	0%
2	96	-2%	1%
3	94	-1%	3%
4	97	0%	1%
5	96	1%	3%
6	92	4%	4%
7	96	1%	-1%
8	96	3%	0%
9	97	0%	0%
10	96	0%	1%
11	95	2%	2%
12	87	5%	-5%
13	84	3%	-13%
14	86	2%	-11%
15	93	-1%	-4%
16	86	-4%	-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
3866lx	966lx	430lx	242lx	155lx	107lx	79lx	60lx	48lx	39lx	32lx	27lx	23lx	20lx	17lx	15lx	13lx	12lx	11lx	10lx
359.1fcd	89.8fcd	39.9fcd	22.4fcd	14.4fcd	10fcd	7.3fcd	5.6fcd	4.4fcd	3.6fcd	3fcd	2.5fcd	2.1fcd	1.8fcd	1.6fcd	1.4fcd	1.2fcd	1.1fcd	1fcd	0.9fcd

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°
3866	3830	3724	3548	3305	3002	2649	2260	1852	1455	1089	774	520	332	200	115	67	41	27	18
100%	99%	96%	92%	85%	78%	69%	58%	48%	38%	28%	20%	13%	9%	5%	3%	2%	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°
3866	3830	3724	3548	3305	3002	2649	2260	1852	1455	1089	774	520	332	200	115	67	41	27	18
100%	99%	96%	92%	85%	78%	69%	58%	48%	38%	28%	20%	13%	9%	5%	3%	2%	1%	1%	0%

Intensities in 180° c-plane

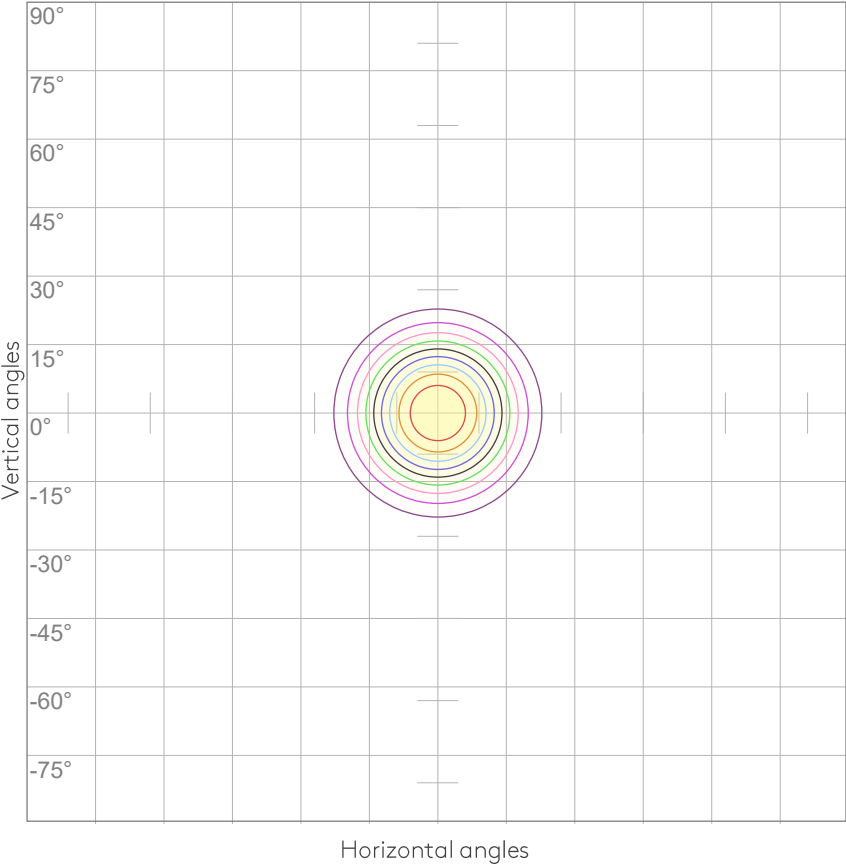
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
3866	3830	3724	3548	3305	3002	2649	2260	1852	1455	1089	774	520	332	200	115	67	41	27	18
100%	99%	96%	92%	85%	78%	69%	58%	48%	38%	28%	20%	13%	9%	5%	3%	2%	1%	1%	0%

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°
3866	3830	3724	3548	3305	3002	2649	2260	1852	1455	1089	774	520	332	200	115	67	41	27	18
100%	99%	96%	92%	85%	78%	69%	58%	48%	38%	28%	20%	13%	9%	5%	3%	2%	1%	1%	0%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
31.2°	50.7°	61.3°	99.6%	99.3%

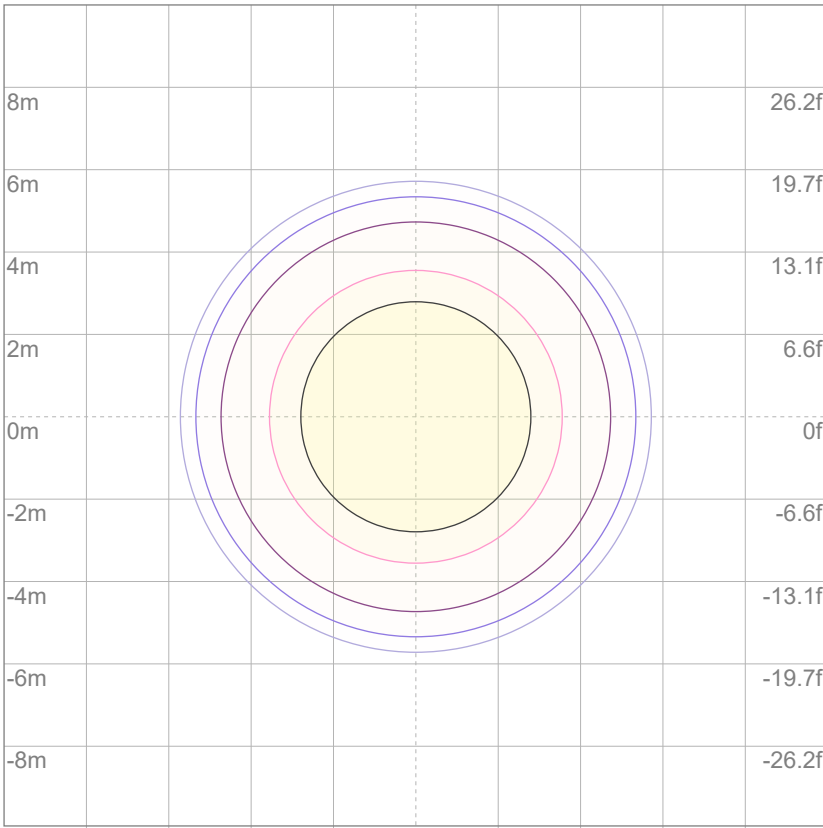
ISO CANDELA DIAGRAM



10%	387 cd
20%	773 cd
30%	1160 cd
40%	1546 cd
50%	1933 cd
60%	2319 cd
70%	2706 cd
80%	3092 cd
90%	3479 cd

Conditions:
Number of c-planes: 8
Candela at center: 3866 cd

ISO LUX DIAGRAM



3%	1.16 lx
5%	1.93 lx
10%	3.87 lx
30%	11.6 lx
50%	{LUX_10M50} lx

Conditions:
Number of c-planes: 8
Lux at center: 38.7 lx

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

Mounting height: 10 meters (33 feet)

UGR

GLARE EVALUATION ACCORDING TO UGR

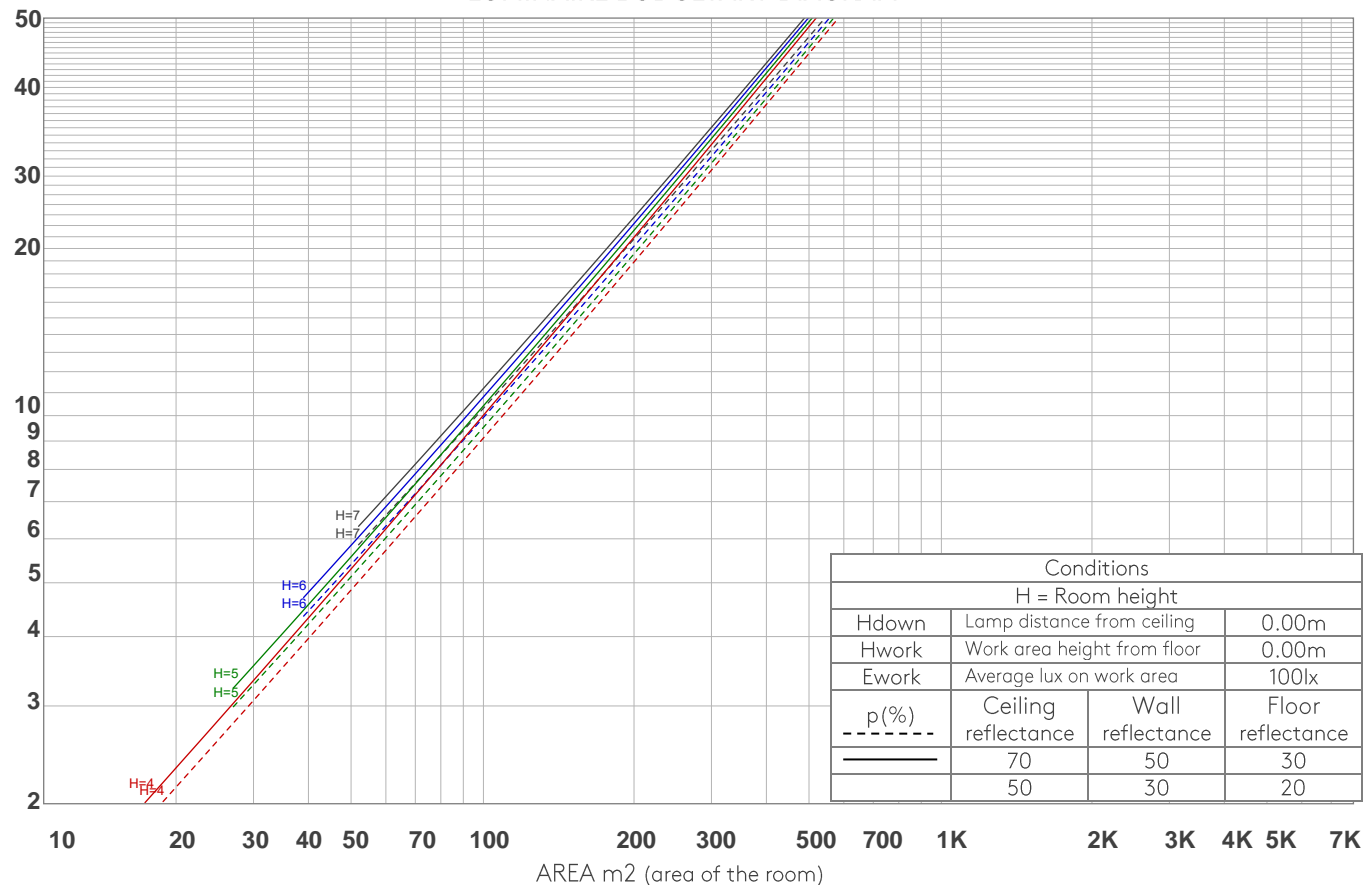
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	8.6	9.0	8.7	9.2	9.4	8.6	9.0	8.7	9.2	9.4
	3H	8.3	8.9	8.7	9.1	9.3	8.3	8.9	8.7	9.1	9.3
	4H	8.3	8.8	8.6	9.0	9.3	8.3	8.8	8.6	9.0	9.3
	6H	8.3	8.7	8.6	9.0	9.4	8.3	8.7	8.6	9.0	9.4
	8H	8.2	8.7	8.6	9.0	9.4	8.2	8.7	8.6	9.0	9.4
	12H	8.2	8.6	8.6	9.0	9.4	8.2	8.6	8.6	9.0	9.4
4H	2H	8.2	8.8	8.6	9.0	9.3	8.2	8.8	8.6	9.0	9.3
	3H	8.2	8.6	8.5	8.9	9.4	8.2	8.6	8.5	8.9	9.4
	4H	8.0	8.4	8.4	8.9	9.4	8.0	8.4	8.4	8.9	9.4
	6H	8.0	8.4	8.5	8.8	9.1	8.0	8.4	8.5	8.8	9.1
	8H	8.0	8.4	8.5	8.7	9.1	8.0	8.4	8.5	8.7	9.1
	12H	7.9	8.3	8.4	8.7	9.1	7.9	8.3	8.4	8.7	9.1
8H	4H	7.9	8.3	8.4	8.7	9.0	7.9	8.3	8.4	8.7	9.0
	6H	7.9	8.1	8.4	8.6	9.1	7.9	8.1	8.4	8.6	9.1
	8H	7.9	8.1	8.4	8.6	9.3	7.9	8.1	8.4	8.6	9.3
	12H	8.0	8.1	8.6	8.6	9.2	8.0	8.1	8.6	8.6	9.2
12H	4H	7.8	8.1	8.3	8.6	9.0	7.8	8.1	8.3	8.6	9.0
	6H	7.9	8.1	8.4	8.6	9.2	7.9	8.1	8.4	8.6	9.2
	8H	7.9	8.0	8.5	8.6	9.2	7.9	8.0	8.5	8.6	9.2
Variation of the observer position for the luminaire distance S											
S = 1.0H		5.6 / -6.5					5.6 / -6.5				
S = 1.5H		8.3 / -7.5					8.3 / -7.5				
S = 2.0H		10.2 / -7.9					10.2 / -7.9				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 1124 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	109	112	111	109	107	106	105	104	103	102	101	99	99	98	96
2	111	107	104	102	109	106	103	101	102	100	98	100	98	96	97	95	94	93
3	107	103	99	96	105	101	98	95	99	96	94	96	94	92	94	92	91	89
4	104	98	94	91	102	97	94	91	95	92	90	93	91	89	92	89	88	86
5	101	95	90	87	99	94	90	87	92	89	86	91	88	85	89	87	85	84
6	98	91	87	84	96	90	86	84	89	86	83	88	85	82	87	84	82	81
7	95	88	84	81	94	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	80	77	82	79	77	76
9	89	82	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	72	71

LAMPS (number of lamps)

LUMINAIRE BUDGETARY DIAGRAM



ZONAL LUMEN SUMMARY

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
327 lm	552 lm	208 lm	25.4 lm	5.63 lm	1.60 lm	0.323 lm	0.254 lm	0.242 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.238 lm	0.276 lm	0.268 lm	0.235 lm	0.345 lm	0.565 lm	0.680 lm	0.486 lm	0.120 lm

FLICKER

FLICKER CURVE (COMPLETE SAMPLED)



FLICKER FRAME (FRAME OF ONE FLICKER)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER)



FLICKER RESULTS:

Flicker frequency:	n/a Hz
Flicker index:	n/a
Flicker percentage:	n/a %
SVM: (Visual flicker)	n/a

FLICKER CONDITIONS:

Sample rate:	n/a samples/second
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