

PHOTOMETRIC TEST REPORT

MINIMA PRO ROUND FIXED IP65
- MATT WHITE - 4000243

astro

MINIMA PRO ROUND FIXED IP65 - MATT

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LIGHT EFFICIENCY:

65 Lumen/Watt

LIGHT QUALITY:

CRI: 94.7

COLOR TEMPERATURE:

2710 K

OUTPUT: 766 lm

PEAK: 4125 cd

POWER: 11.8 W

PF: 0.95



Tracking number: [n/a](#)

Product name:

Minima Pro Round Fixed IP65 - Matt White
- 4000243

Item number:

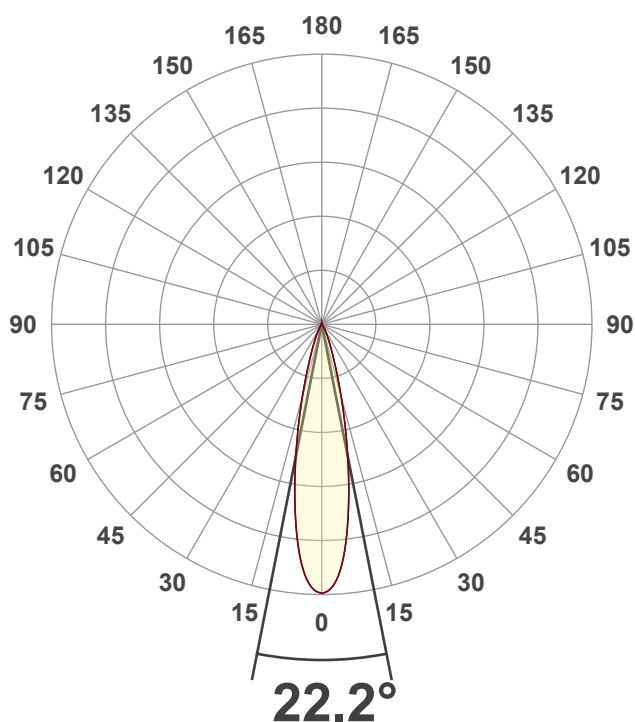
MRF-MW-HQ27G1-15G1-X-D1

Date and time:

17/01/2025 13:53:35

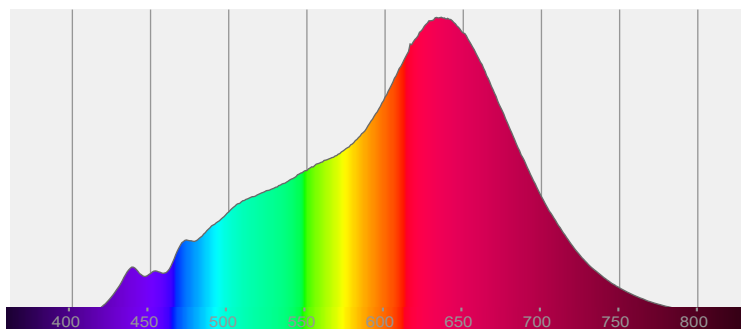
Description:

IP65 LED Downlight

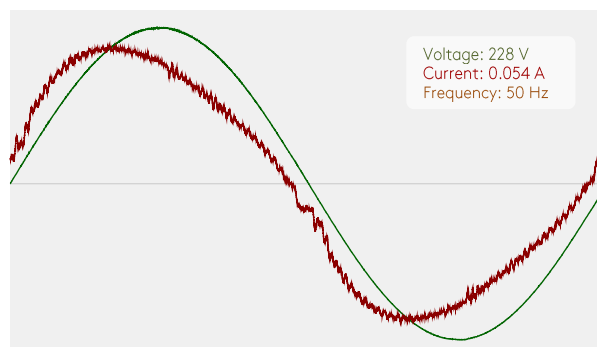


CIE 1931
x: 0.459
y: 0.410

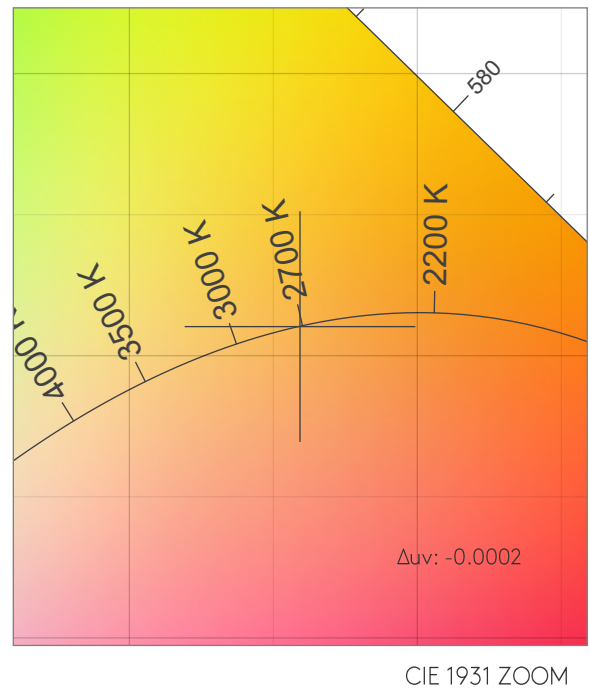
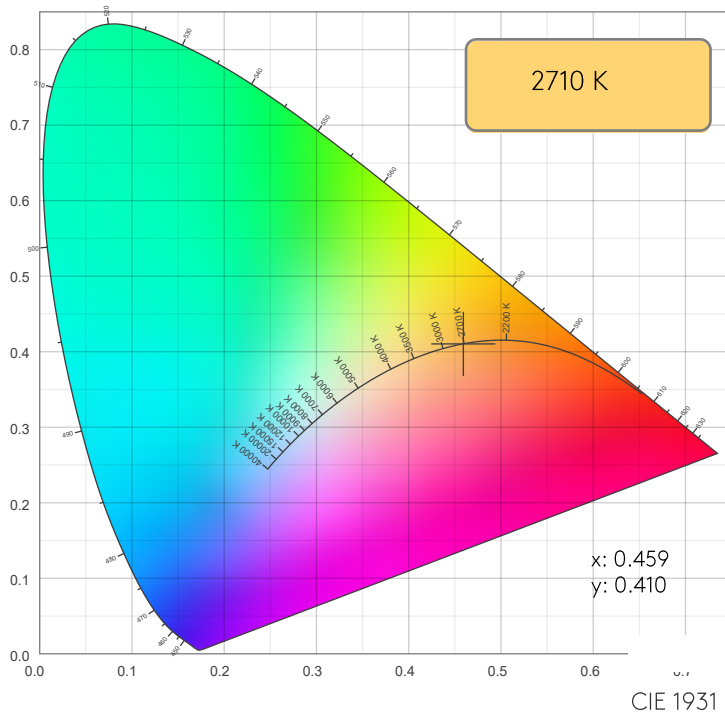
SPECTRA



POWER

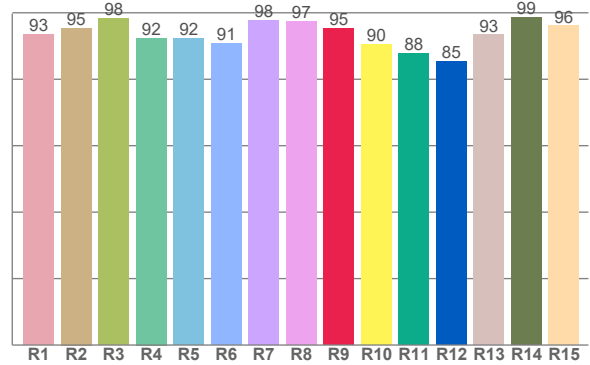
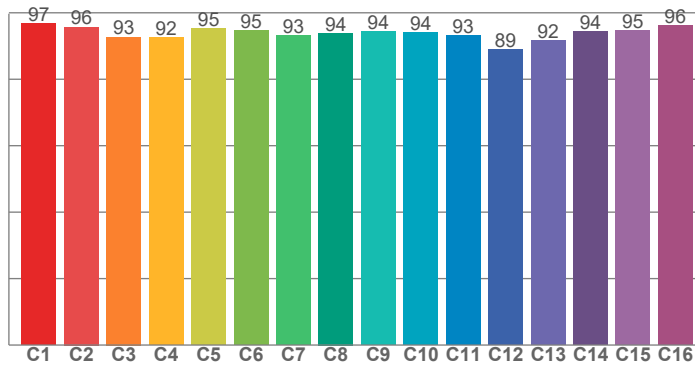


COLOR DETAILS



TM30: 94.1

CRI: 94.7 (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	95.4	98.3	92.4	92.3	90.7	97.7	97.4	95.3	90.5	87.9	85.3	93.4	98.6	96.1

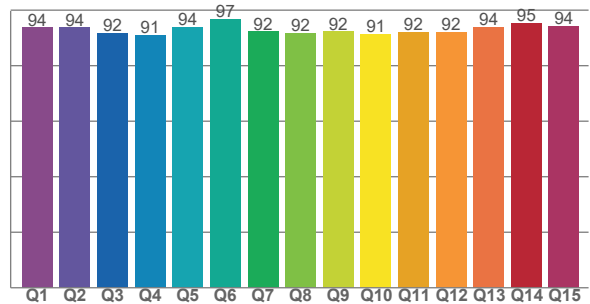
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
96.7	95.7	92.7	92.5	95.2	94.6	93.3	93.9	94.3	94.0	93.2	89.1	91.7	94.3	94.7	96.2

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
93.7	93.7	91.8	91.1	94.0	96.7	92.4	91.8	92.2	91.4	92.1	92.1	93.9	95.4	94.4

CQS: 92.9



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
2710 K	94.7	95.3	94.1	99.4	92.9	0.459	0.410	0.262	0.351	-0.0002

MINIMA PRO ROUND FIXED IP65 - MATT

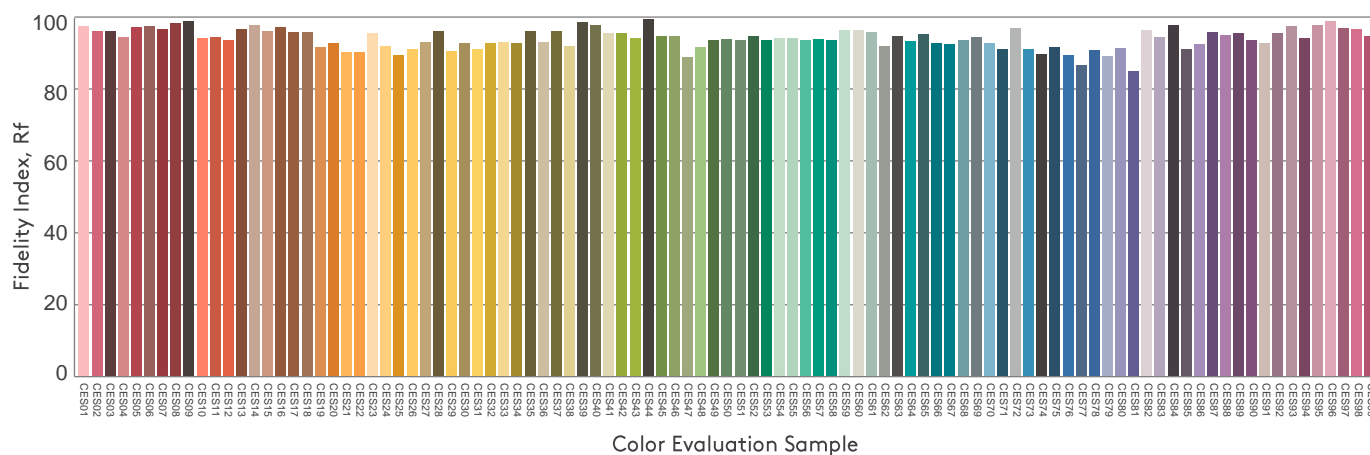
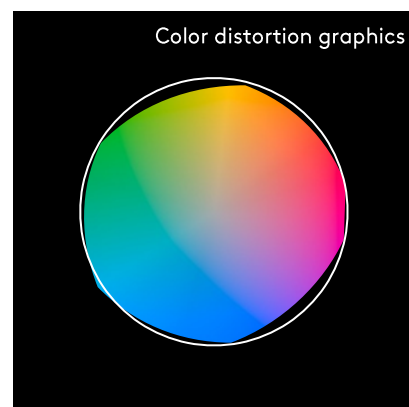
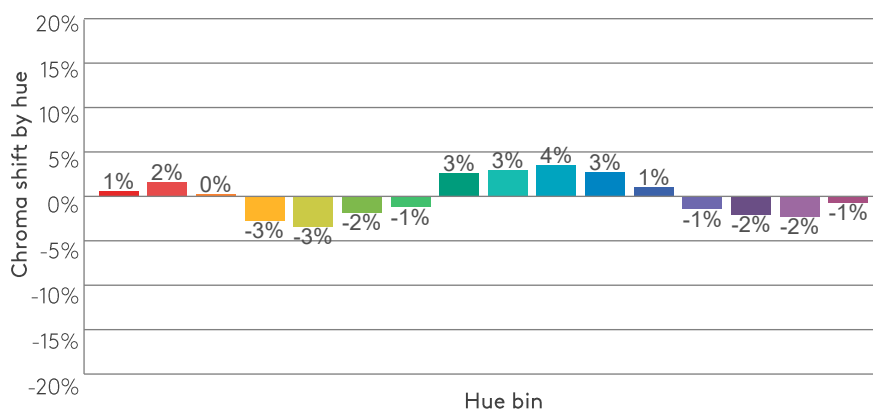
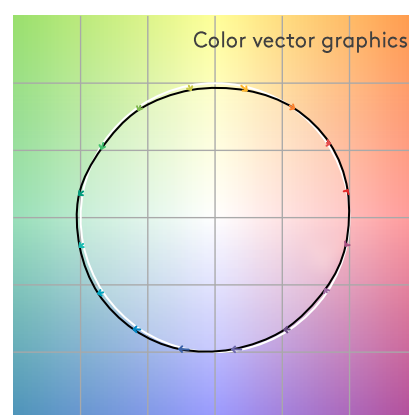
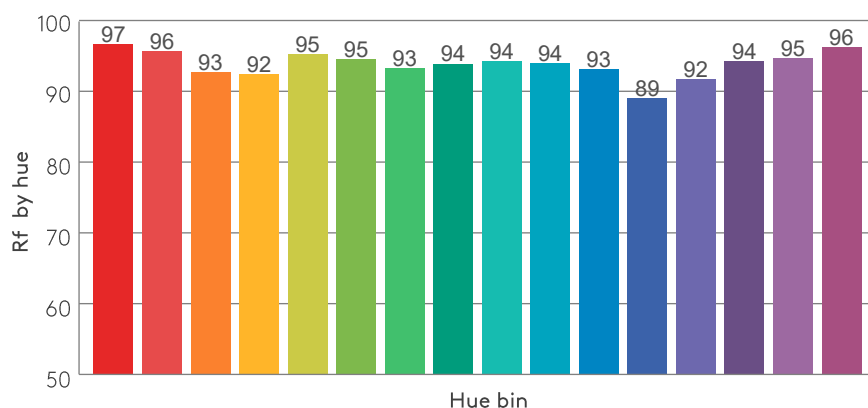
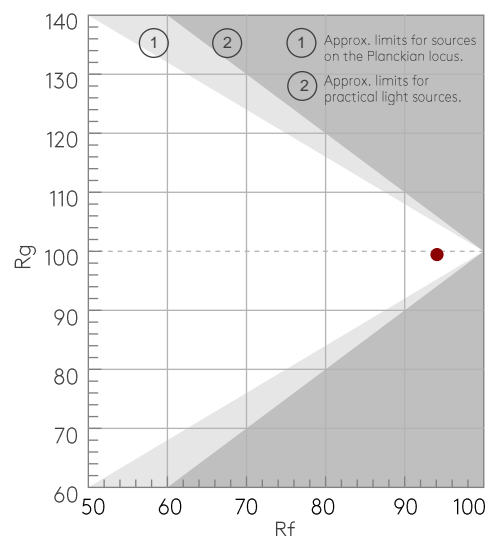
TM30 DETAILS

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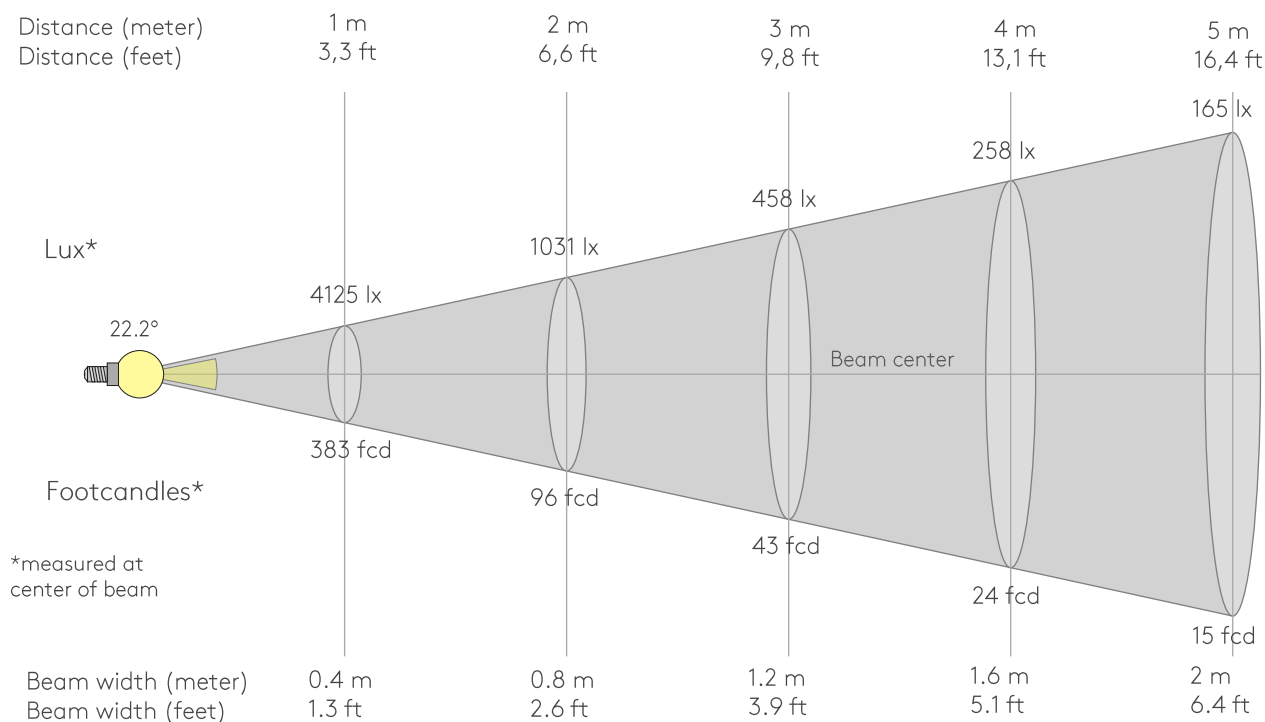
Rf 94.1
Fidelity index Rf

Rg 99.4
Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	97	1%	1%
2	96	2%	-2%
3	93	0%	-4%
4	92	-3%	-5%
5	95	-3%	-1%
6	95	-2%	3%
7	93	-1%	4%
8	94	3%	3%
9	94	3%	2%
10	94	4%	-1%
11	93	3%	-4%
12	89	1%	-7%
13	92	-1%	-7%
14	94	-2%	-3%
15	95	-2%	1%
16	96	-1%	-1%



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
4125lx	1031lx	458lx	258lx	165lx	115lx	84lx	64lx	51lx	41lx	34lx	29lx	24lx	21lx	18lx	16lx	14lx	13lx	11lx	10lx
383.2fcd	95.8fcd	42.6fcd	24fcd	15.3fcd	10.6fcd	7.8fcd	6fcd	4.7fcd	3.8fcd	3.2fcd	2.7fcd	2.3fcd	2fcd	1.7fcd	1.5fcd	1.3fcd	1.2fcd	1.1fcd	1fcd

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°
4125	4053	3828	3437	2924	2369	1834	1360	965	672	471	337	242	174	124	89	64	46	32	22
100%	98%	93%	83%	71%	57%	44%	33%	23%	16%	11%	8%	6%	4%	3%	2%	2%	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°
4125	4053	3828	3437	2924	2369	1834	1360	965	672	471	337	242	174	124	89	64	46	32	22
100%	98%	93%	83%	71%	57%	44%	33%	23%	16%	11%	8%	6%	4%	3%	2%	2%	1%	1%	1%

Intensities in 180° c-plane

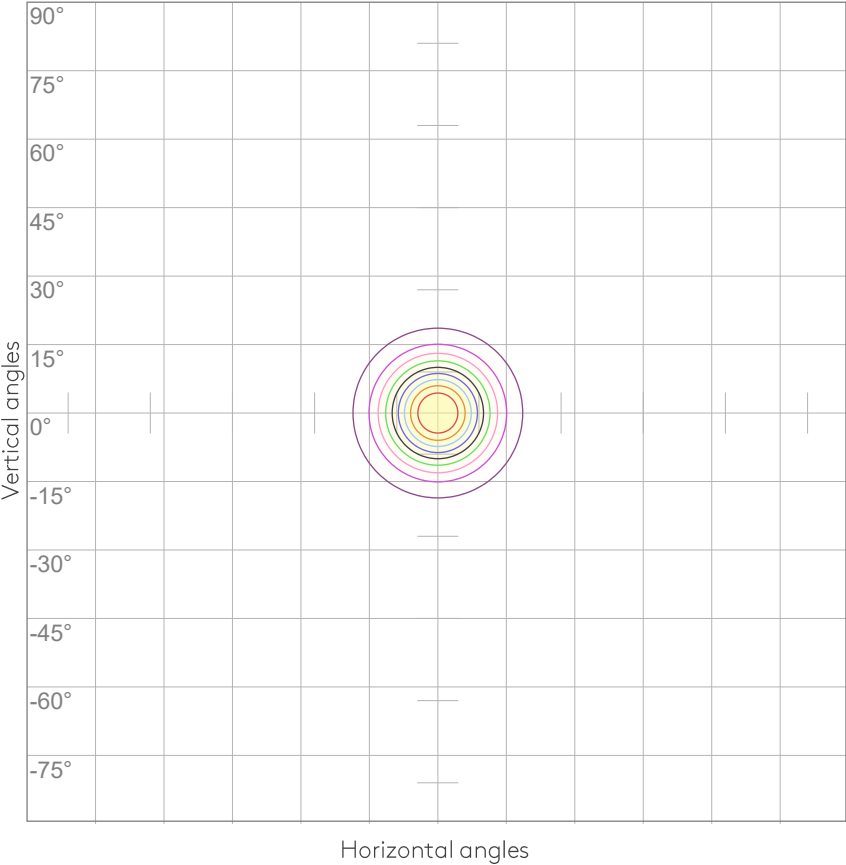
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
4125	4053	3828	3437	2924	2369	1834	1360	965	672	471	337	242	174	124	89	64	46	32	22
100%	98%	93%	83%	71%	57%	44%	33%	23%	16%	11%	8%	6%	4%	3%	2%	2%	1%	1%	1%

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°
4125	4053	3828	3437	2924	2369	1834	1360	965	672	471	337	242	174	124	89	64	46	32	22
100%	98%	93%	83%	71%	57%	44%	33%	23%	16%	11%	8%	6%	4%	3%	2%	2%	1%	1%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
22.2°	41.6°	58.2°	99.5%	99.0%

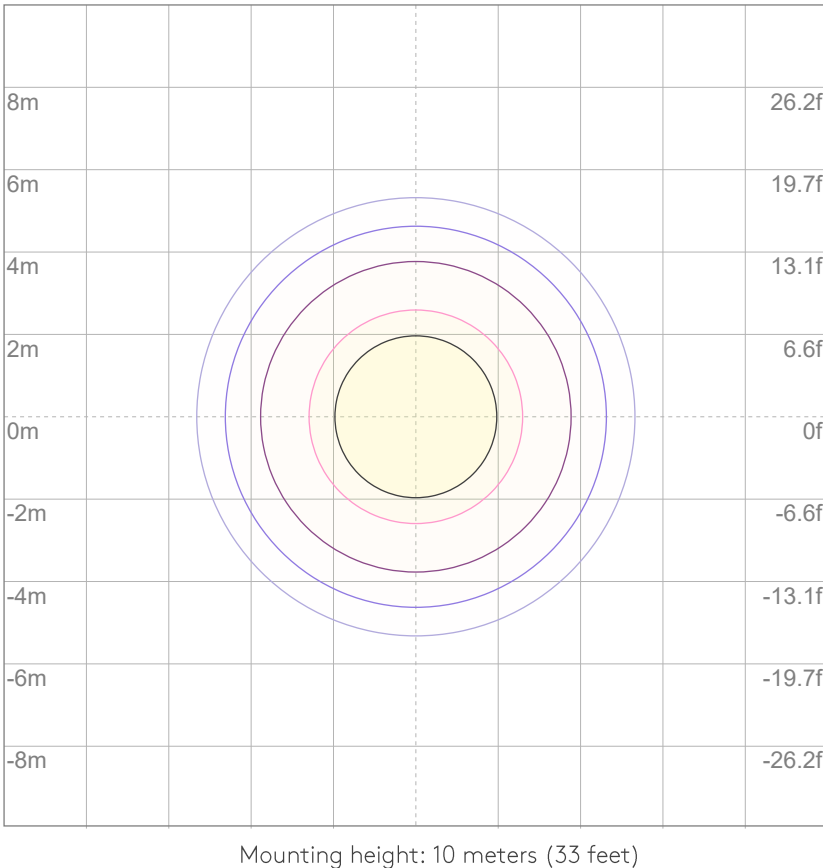
ISO CANDELA DIAGRAM



10%	412 cd
20%	825 cd
30%	1237 cd
40%	1650 cd
50%	2062 cd
60%	2475 cd
70%	2887 cd
80%	3300 cd
90%	3712 cd

Conditions:
Number of c-planes: 8
Candela at center: 4125 cd

ISO LUX DIAGRAM



3%	1.24 lx
5%	2.06 lx
10%	4.12 lx
30%	12.4 lx
50%	{LUX_10M50} lx

Conditions:
Number of c-planes: 8
Lux at center: 41.2 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	10.3	10.6	10.3	10.8	11.0	10.3	10.6	10.3	10.8	11.0
	3H	10.0	10.6	10.4	10.8	10.9	10.0	10.6	10.4	10.8	10.9
	4H	10.0	10.5	10.4	10.7	11.0	10.0	10.5	10.4	10.7	11.0
	6H	10.0	10.5	10.3	10.8	11.1	10.0	10.5	10.3	10.8	11.1
	8H	10.0	10.4	10.3	10.7	11.1	10.0	10.4	10.3	10.7	11.1
	12H	9.9	10.3	10.3	10.7	11.1	9.9	10.3	10.3	10.7	11.1
4H	2H	9.9	10.5	10.3	10.7	10.9	9.9	10.5	10.3	10.7	10.9
	3H	9.9	10.3	10.3	10.7	11.1	9.9	10.3	10.3	10.7	11.1
	4H	9.9	10.2	10.3	10.7	11.2	9.9	10.2	10.3	10.7	11.2
	6H	9.8	10.3	10.3	10.6	11.0	9.8	10.3	10.3	10.6	11.0
	8H	9.8	10.2	10.3	10.6	10.9	9.8	10.2	10.3	10.6	10.9
	12H	9.8	10.1	10.3	10.5	10.9	9.8	10.1	10.3	10.5	10.9
8H	4H	9.7	10.2	10.3	10.5	10.9	9.7	10.2	10.3	10.5	10.9
	6H	9.8	10.0	10.3	10.5	11.0	9.8	10.0	10.3	10.5	11.0
	8H	9.8	10.0	10.3	10.5	11.1	9.8	10.0	10.3	10.5	11.1
	12H	9.8	9.9	10.4	10.4	11.0	9.8	9.9	10.4	10.4	11.0
12H	4H	9.7	10.0	10.2	10.4	10.9	9.7	10.0	10.2	10.4	10.9
	6H	9.8	10.0	10.3	10.5	11.1	9.8	10.0	10.3	10.5	11.1
	8H	9.8	9.9	10.3	10.4	11.0	9.8	9.9	10.3	10.4	11.0
Variation of the observer position for the luminaire distance S											
S = 1.0H		5.2 / -5.3					5.2 / -5.3				
S = 1.5H		7.9 / -6.1					7.9 / -6.1				
S = 2.0H		9.8 / -7.0					9.8 / -7.0				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 766 lm total luminous flux											

MINIMA PRO ROUND FIXED IP65 - MATT

LIGHT PLANNING

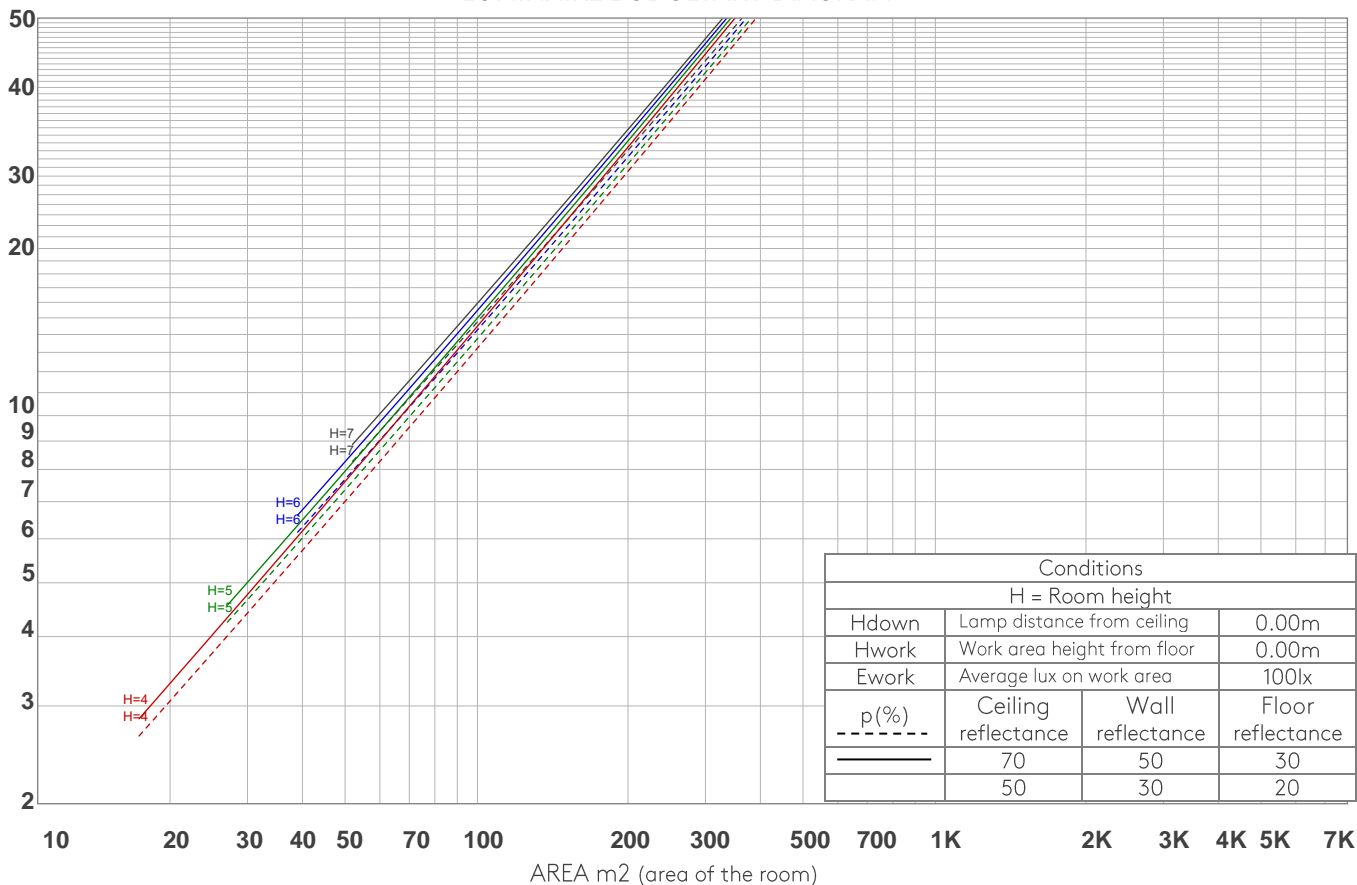
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COEFFICIENTS OF UTILIZATION

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	113	111	109	108	107	106	104	103	102	101	100	99	98	97
2	111	108	105	103	109	106	104	101	103	101	99	100	99	97	98	96	95	94
3	108	104	100	97	106	102	99	96	100	97	95	97	95	93	95	94	92	91
4	105	100	96	93	103	99	95	92	97	94	91	95	92	90	93	91	89	88
5	102	96	92	89	101	95	92	89	94	91	88	92	90	87	91	89	87	86
6	99	93	89	86	98	92	89	86	91	88	85	90	87	85	89	86	84	83
7	97	90	86	84	95	90	86	83	89	85	83	88	85	83	87	84	82	81
8	94	88	84	81	93	87	84	81	86	83	81	86	83	80	85	82	80	79
9	92	85	82	79	91	85	81	79	84	81	79	84	80	78	83	80	78	77
10	90	83	79	77	89	83	79	77	82	79	77	82	79	76	81	78	76	75

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°
306 lm	322 lm	101 lm	25.7 lm	5.17 lm	2.23 lm	1.07 lm	0.467 lm	0.163 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.097 lm	0.101 lm	0.094 lm	0.105 lm	0.231 lm	0.408 lm	0.499 lm	0.370 lm	0.077 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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