

PHOTOMETRIC TEST REPORT

MINIMA PRO ROUND FIXED IP65
- MATT WHITE - 4000211

astro

MINIMA PRO ROUND FIXED IP65 - MATT

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LIGHT EFFICIENCY:

109 Lumen/Watt

LIGHT QUALITY:

CRI: 95.5

COLOR TEMPERATURE:

3018 K

OUTPUT: 1294 lm

PEAK: 4561 cd

POWER: 11.8 W

PF: 0.95



Tracking number: [n/a](#)

Product name:

Minima Pro Round Fixed IP65 - Matt White
- 4000211

Item number:

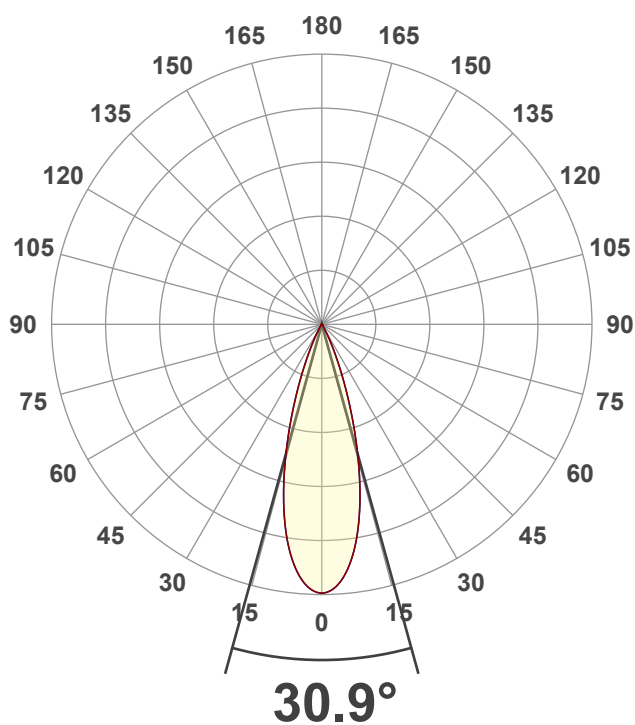
MRF-MW-HE30G1-30G1-X-D1

Date and time:

17/01/2025 12:26:28

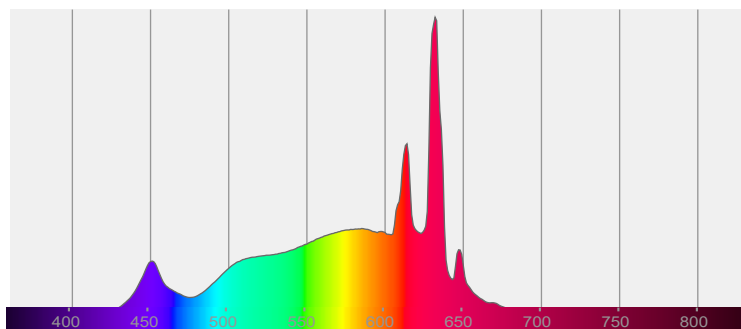
Description:

IP65 LED Downlight

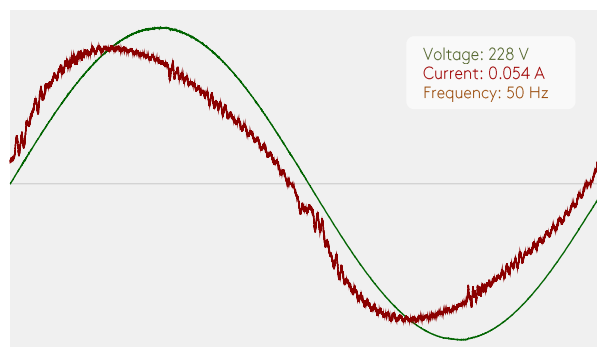


CIE 1931
x: 0.438
y: 0.409

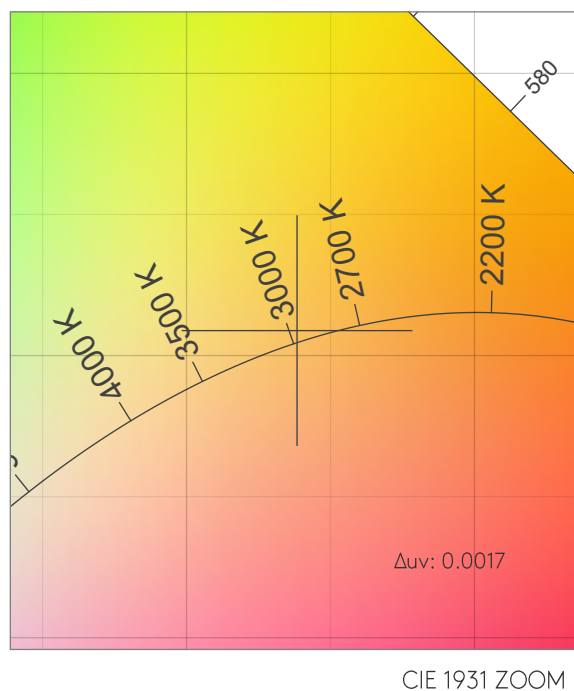
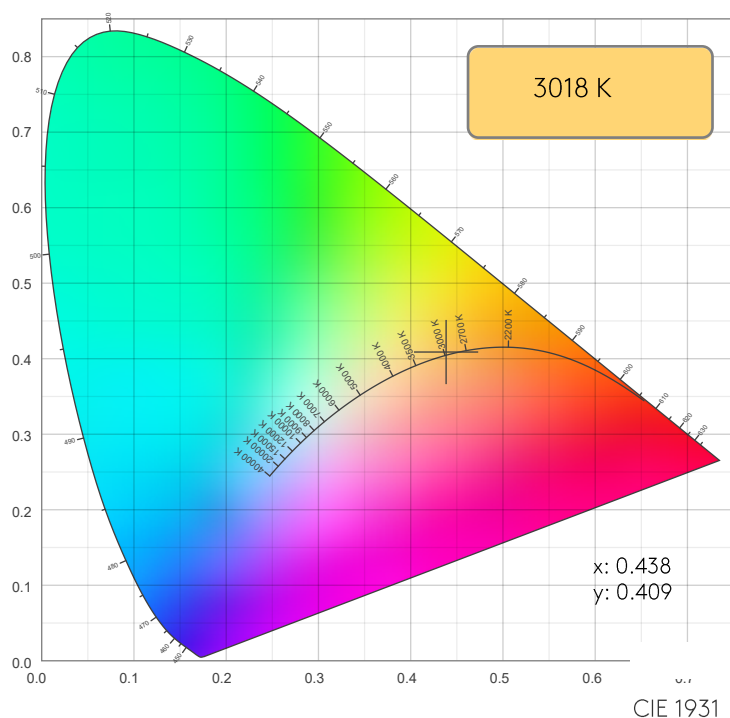
SPECTRA



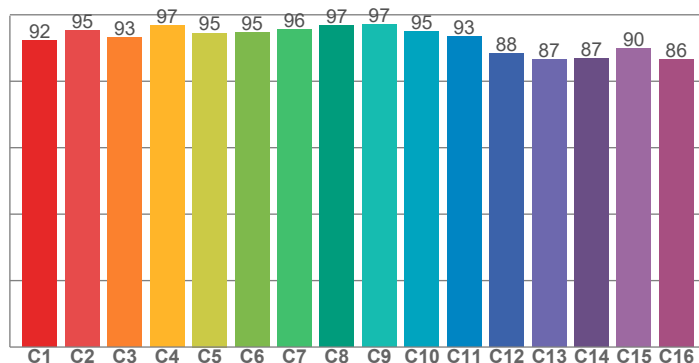
POWER



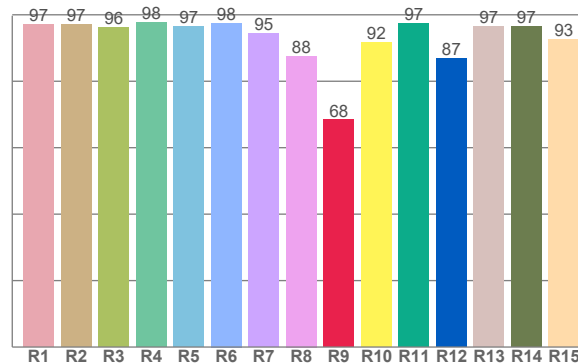
COLOR DETAILS



TM30: 93.1



CRI: 95.5 (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
97.0	97.0	96.2	97.7	96.6	97.5	94.5	87.6	68.4	91.7	97.3	86.8	96.5	96.6	92.6

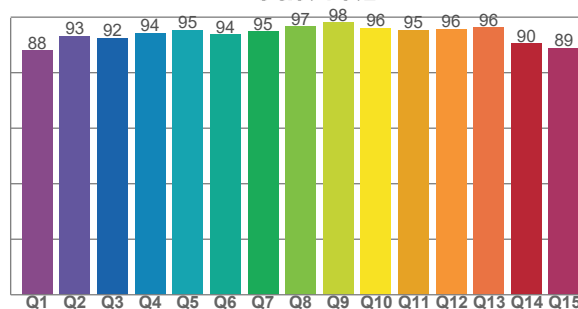
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92.3	95.3	93.1	96.8	94.5	94.7	95.7	96.9	97.2	95.0	93.4	88.4	86.5	86.8	89.9	86.4

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
88.0	93.2	92.4	94.3	95.3	93.8	94.9	96.7	98.0	96.1	95.4	95.8	96.3	90.5	88.8

CQS: 93.2



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
3018 K	95.5	68.4	93.1	100.0	93.2	0.438	0.409	0.249	0.349	0.0017

MINIMA PRO ROUND FIXED IP65 - MATT

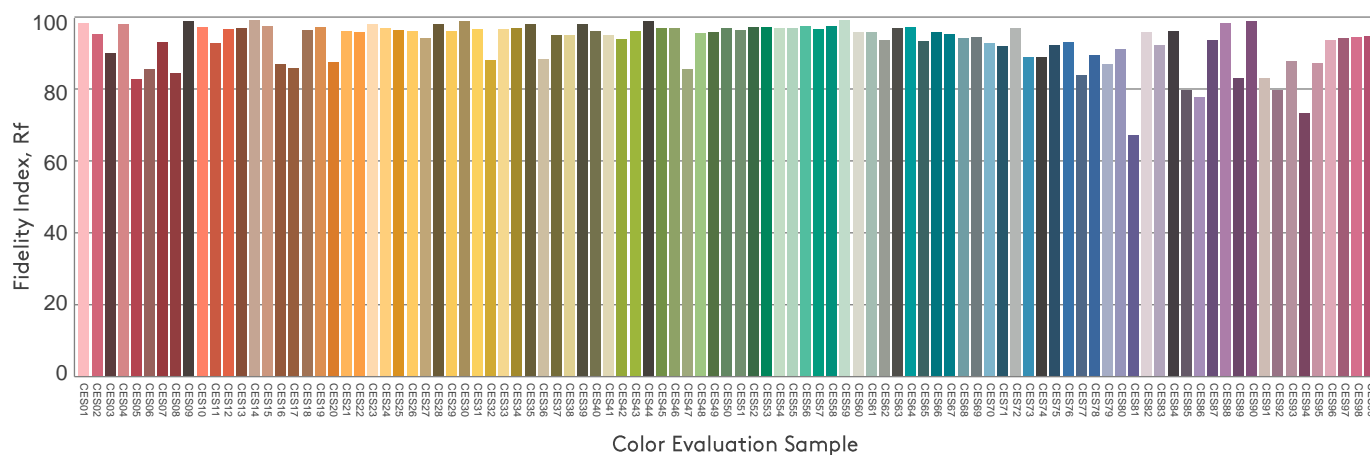
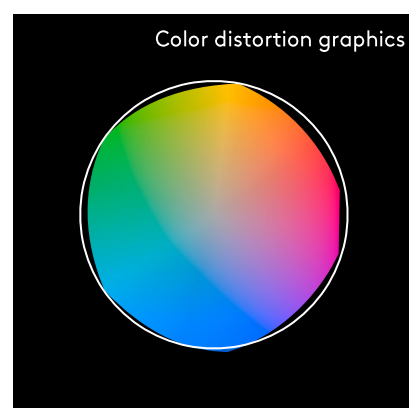
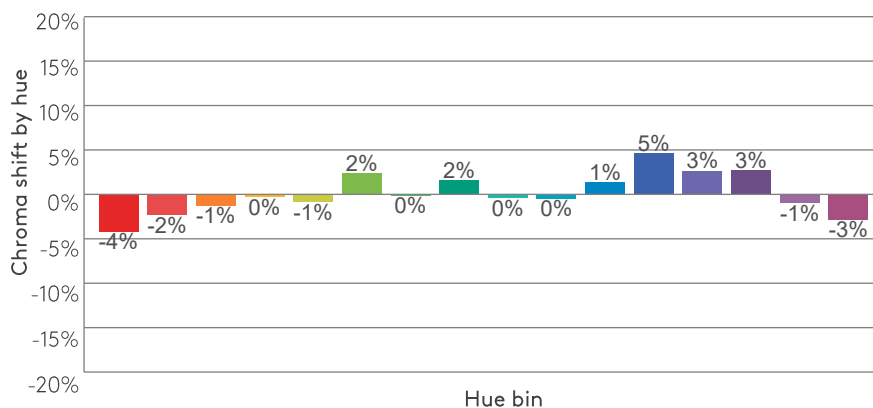
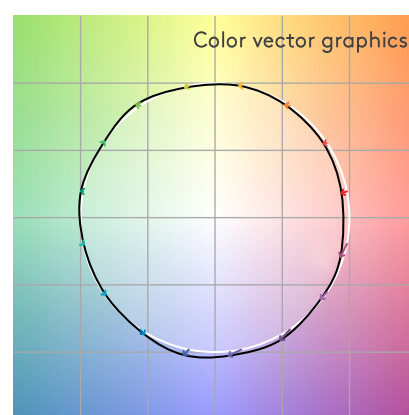
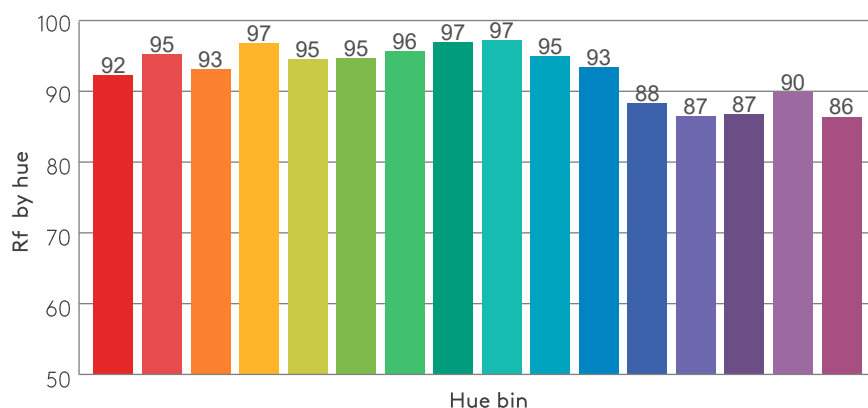
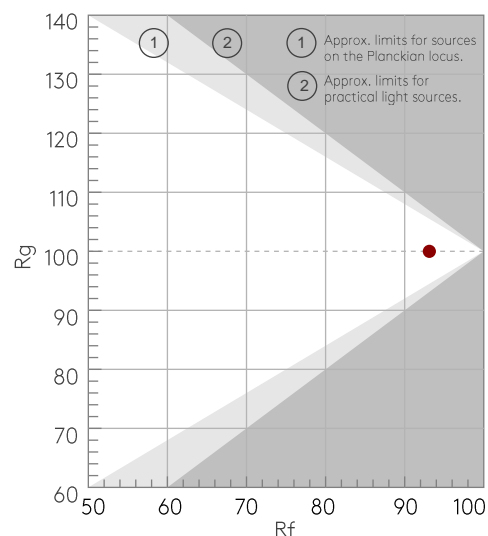
TM30 DETAILS

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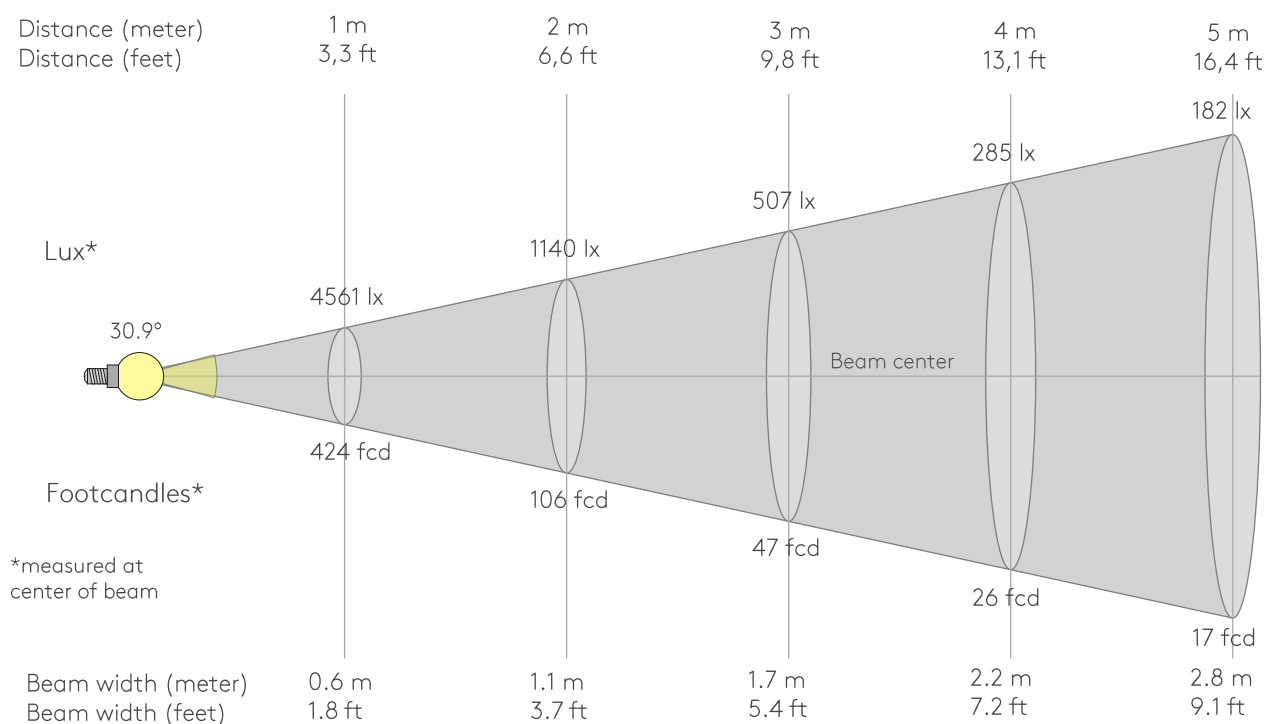
Rf 93.1
Fidelity index Rf

Rg 100.0
Gammut index Rg

Hue Bin	Rf	Graphic shifts (%)	
		Chroma	Hue
1	92	-4%	-1%
2	95	-2%	1%
3	93	-1%	3%
4	97	0%	1%
5	95	-1%	3%
6	95	2%	2%
7	96	0%	-1%
8	97	2%	0%
9	97	0%	0%
10	95	0%	2%
11	93	1%	4%
12	88	5%	-3%
13	87	3%	-10%
14	87	3%	-10%
15	90	-1%	-7%
16	86	-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
4561lx	1140lx	507lx	285lx	182lx	127lx	93lx	71lx	56lx	46lx	38lx	32lx	27lx	23lx	20lx	18lx	16lx	14lx	13lx	11lx
423.7fcd	105.9fcd	47.1fcd	26.5fcd	16.9fcd	11.8fcd	8.6fcd	6.6fcd	5.2fcd	4.2fcd	3.5fcd	2.9fcd	2.5fcd	2.2fcd	1.9fcd	1.7fcd	1.5fcd	1.3fcd	1.2fcd	1.1fcd

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°
4561	4517	4390	4181	3894	3534	3108	2639	2151	1678	1245	874	577	360	209	115	63	37	23	16
100%	99%	96%	92%	85%	77%	68%	58%	47%	37%	27%	19%	13%	8%	5%	3%	1%	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°
4561	4517	4390	4181	3894	3534	3108	2639	2151	1678	1245	874	577	360	209	115	63	37	23	16
100%	99%	96%	92%	85%	77%	68%	58%	47%	37%	27%	19%	13%	8%	5%	3%	1%	1%	1%	0%

Intensities in 180° c-plane

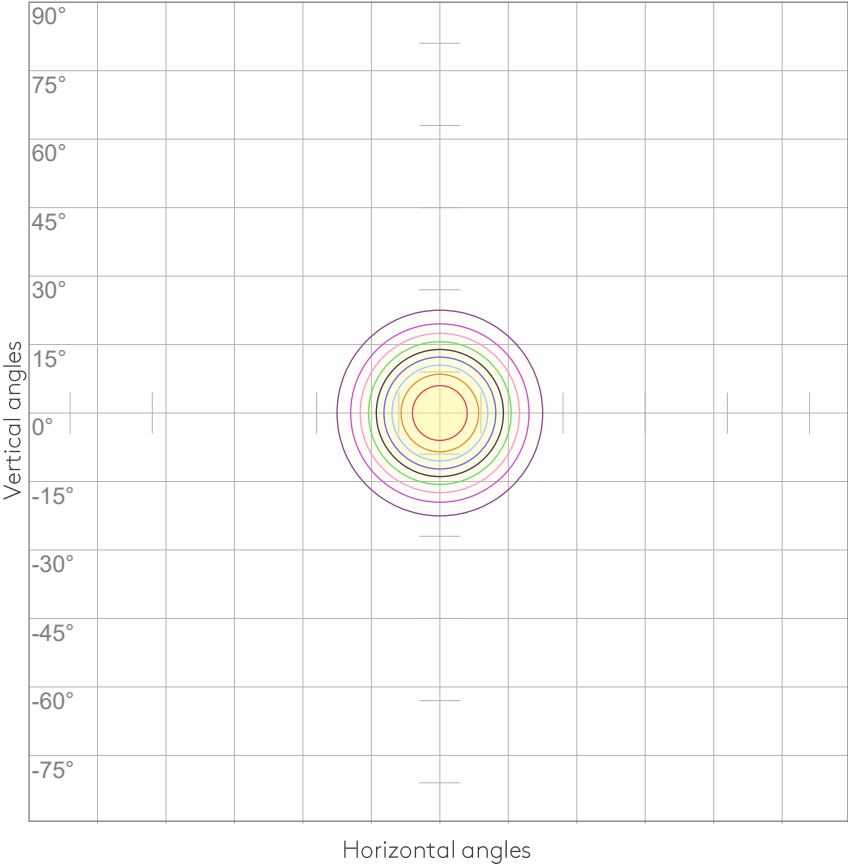
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
4561	4517	4390	4181	3894	3534	3108	2639	2151	1678	1245	874	577	360	209	115	63	37	23	16
100%	99%	96%	92%	85%	77%	68%	58%	47%	37%	27%	19%	13%	8%	5%	3%	1%	1%	1%	0%

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°
4561	4517	4390	4181	3894	3534	3108	2639	2151	1678	1245	874	577	360	209	115	63	37	23	16
100%	99%	96%	92%	85%	77%	68%	58%	47%	37%	27%	19%	13%	8%	5%	3%	1%	1%	1%	0%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
30.9°	50.1°	60.1°	99.7%	99.3%

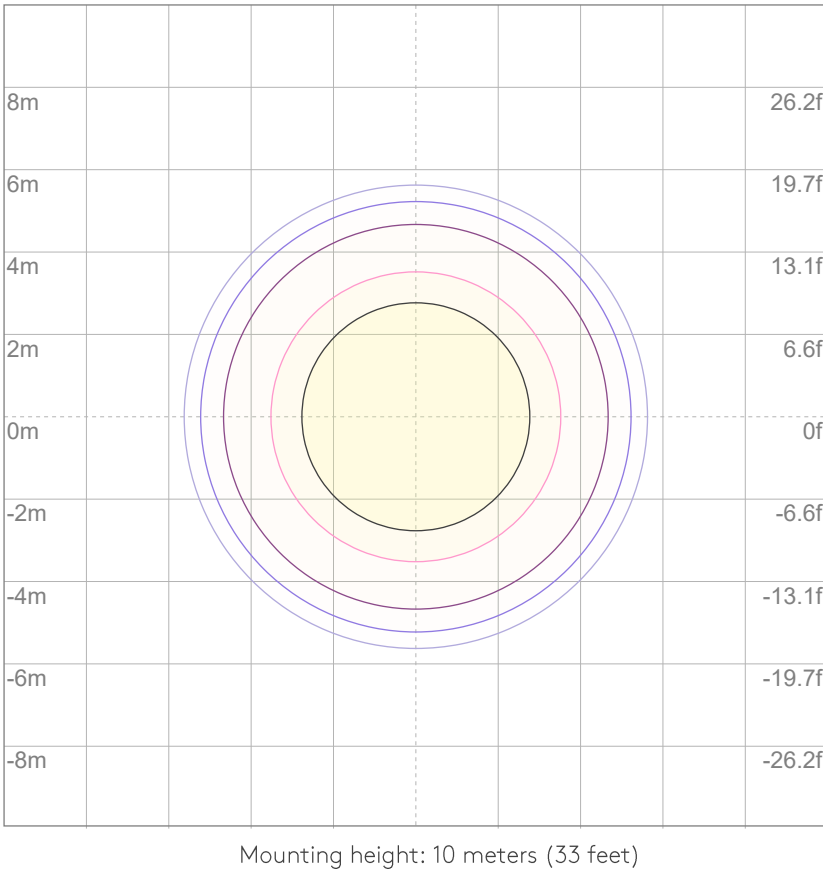
ISO CANDELA DIAGRAM



- 10% 456 cd
- 20% 912 cd
- 30% 1368 cd
- 40% 1824 cd
- 50% 2280 cd
- 60% 2736 cd
- 70% 3192 cd
- 80% 3649 cd
- 90% 4105 cd

Conditions:
Number of c-planes: 8
Candela at center: 4561 cd

ISO LUX DIAGRAM



- 3% 1.37 lx
- 5% 2.28 lx
- 10% 4.56 lx
- 30% 13.7 lx
- 50% {LUX_10M50} lx

Conditions:
Number of c-planes: 8
Lux at center: 45.6 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	7.8	8.2	7.9	8.4	8.6	7.8	8.2	7.9	8.4	8.6
	3H	7.5	8.1	7.9	8.3	8.5	7.5	8.1	7.9	8.3	8.5
	4H	7.5	8.0	7.9	8.3	8.5	7.5	8.0	7.9	8.3	8.5
	6H	7.5	8.0	7.8	8.3	8.6	7.5	8.0	7.8	8.3	8.6
	8H	7.5	7.9	7.8	8.2	8.6	7.5	7.9	7.8	8.2	8.6
	12H	7.4	7.9	7.8	8.2	8.6	7.4	7.9	7.8	8.2	8.6
4H	2H	7.5	8.0	7.8	8.2	8.5	7.5	8.0	7.8	8.2	8.5
	3H	7.4	7.8	7.8	8.2	8.6	7.4	7.8	7.8	8.2	8.6
	4H	7.3	7.7	7.7	8.2	8.7	7.3	7.7	7.7	8.2	8.7
	6H	7.3	7.8	7.8	8.1	8.4	7.3	7.8	7.8	8.1	8.4
	8H	7.3	7.7	7.8	8.0	8.4	7.3	7.7	7.8	8.0	8.4
	12H	7.2	7.6	7.7	8.0	8.4	7.2	7.6	7.7	8.0	8.4
8H	4H	7.2	7.6	7.7	8.0	8.3	7.2	7.6	7.7	8.0	8.3
	6H	7.2	7.5	7.7	7.9	8.5	7.2	7.5	7.7	7.9	8.5
	8H	7.3	7.5	7.8	8.0	8.6	7.3	7.5	7.8	8.0	8.6
	12H	7.2	7.4	7.8	7.9	8.5	7.2	7.4	7.8	7.9	8.5
12H	4H	7.1	7.5	7.7	7.9	8.3	7.1	7.5	7.7	7.9	8.3
	6H	7.2	7.4	7.7	7.9	8.6	7.2	7.4	7.7	7.9	8.6
	8H	7.2	7.4	7.8	7.9	8.5	7.2	7.4	7.8	7.9	8.5
Variation of the observer position for the luminaire distance S											
S = 1.0H		5.5 / -5.2					5.5 / -5.2				
S = 1.5H		8.1 / -6.4					8.1 / -6.4				
S = 2.0H		10.1 / -7.3					10.1 / -7.3				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 1294 lm total luminous flux											

MINIMA PRO ROUND FIXED IP65 - MATT

LIGHT PLANNING

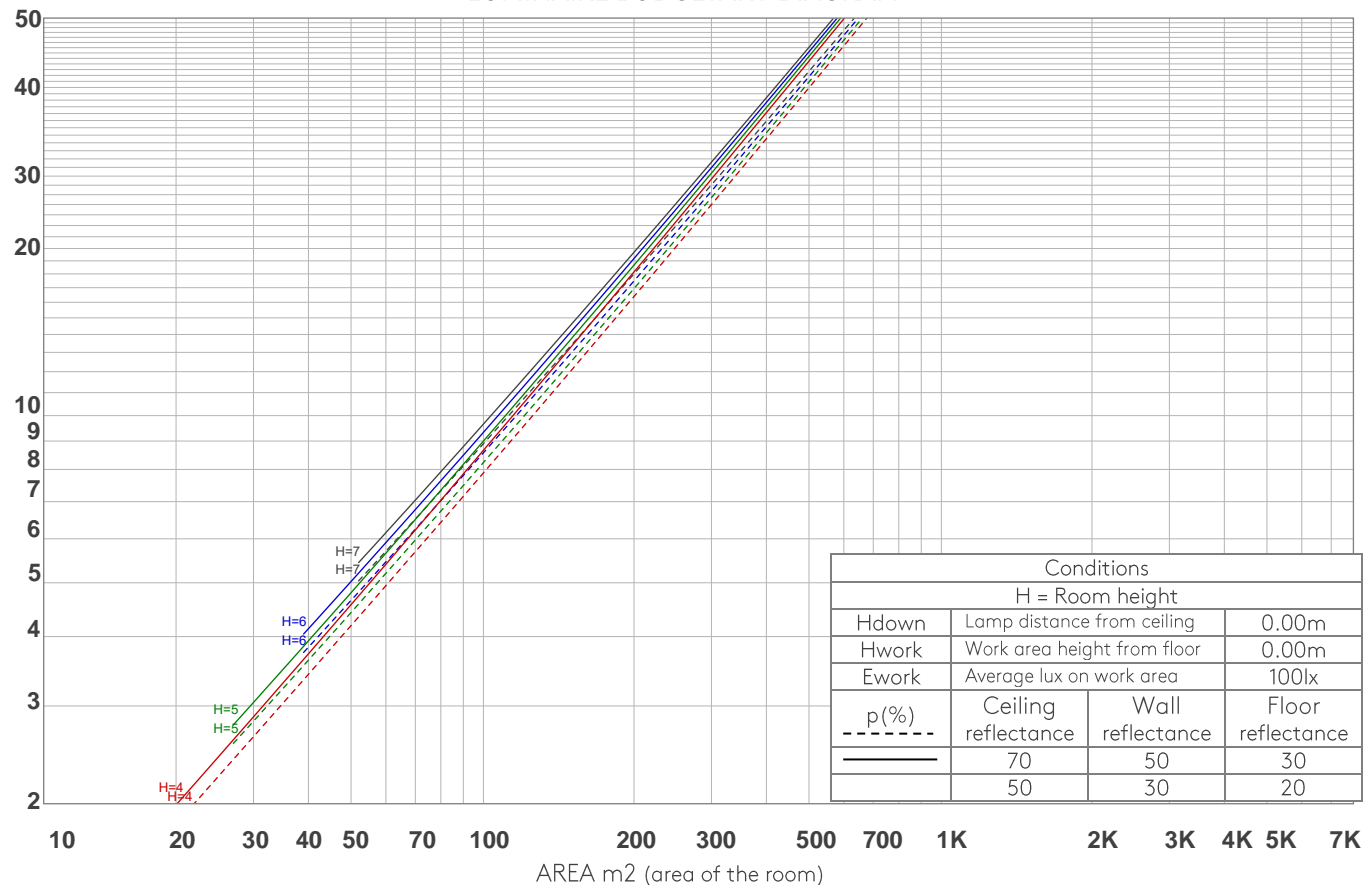
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COEFFICIENTS OF UTILIZATION

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	107	107	105	104	103	102	101	99	99	98	96
2	111	107	104	102	109	106	103	101	103	100	98	100	98	96	97	96	94	93
3	107	103	99	96	106	101	98	95	99	96	94	97	94	92	94	93	91	90
4	104	99	95	92	102	98	94	91	96	92	90	94	91	89	92	90	88	87
5	101	95	91	88	99	94	90	87	92	89	87	91	88	86	89	87	85	84
6	98	92	87	84	97	91	87	84	89	86	83	88	85	83	87	84	82	81
7	95	88	84	81	94	88	84	81	87	83	81	86	83	80	85	82	80	79
8	92	86	81	78	91	85	81	78	84	81	78	83	80	78	82	80	77	76
9	90	83	79	76	89	82	79	76	82	78	76	81	78	75	80	77	75	74
10	87	80	76	74	86	80	76	74	79	76	73	79	75	73	78	75	73	72

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°
386 lm	642 lm	230 lm	23.4 lm	5.30 lm	2.18 lm	0.852 lm	0.368 lm	0.173 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.134 lm	0.119 lm	0.127 lm	0.170 lm	0.318 lm	0.573 lm	0.784 lm	0.533 lm	0.129 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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