

PHOTOMETRIC TEST REPORT

MINIMA PRO ROUND FIXED IP65
- MATT WHITE - 4000195

astro

MINIMA PRO ROUND FIXED IP65 - MATT

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LIGHT EFFICIENCY:

102 Lumen/Watt

LIGHT QUALITY:

CRI: 95.6

COLOR TEMPERATURE:

3014 K

OUTPUT: 1210 lm

PEAK: 6224 cd

POWER: 11.8 W

PF: 0.95



Tracking number: [n/a](#)

Product name:

Minima Pro Round Fixed IP65 - Matt White
- 4000195

Item number:

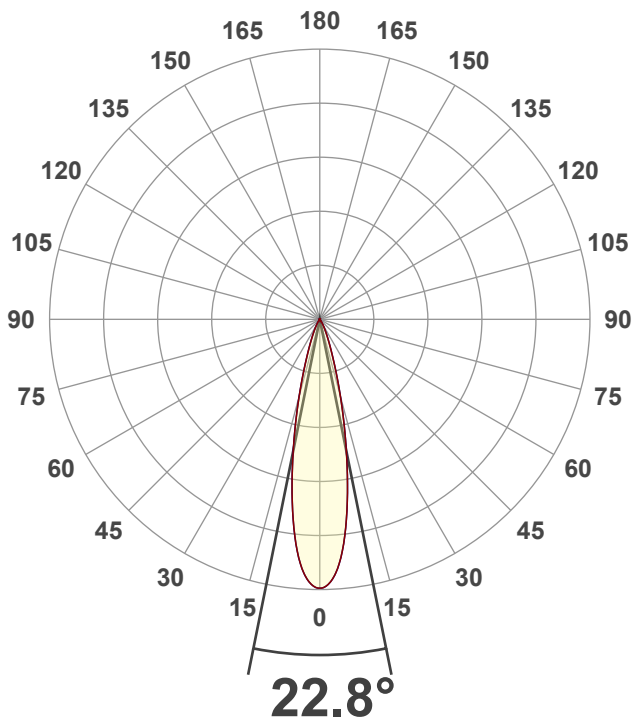
MRF-MW-HE30G1-15G1-X-D1

Date and time:

17/01/2025 12:21:21

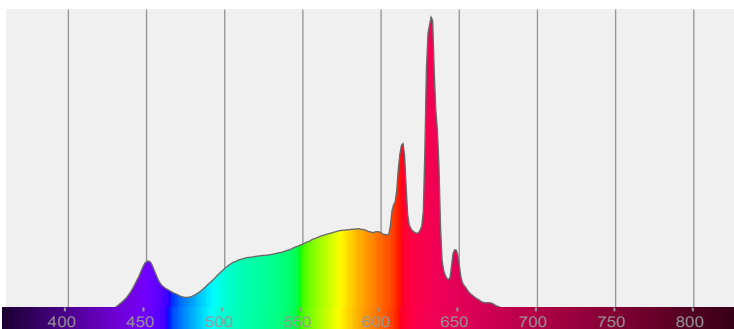
Description:

IP65 LED Downlight

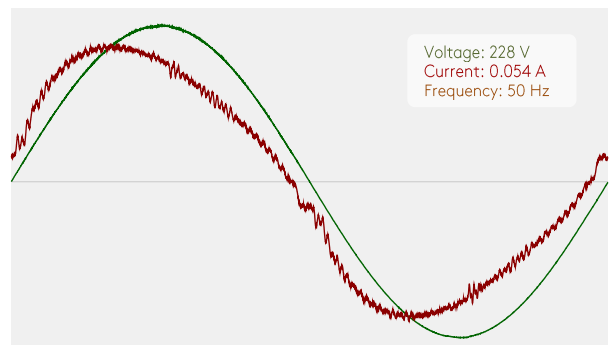


CIE 1931
x: 0.438
y: 0.409

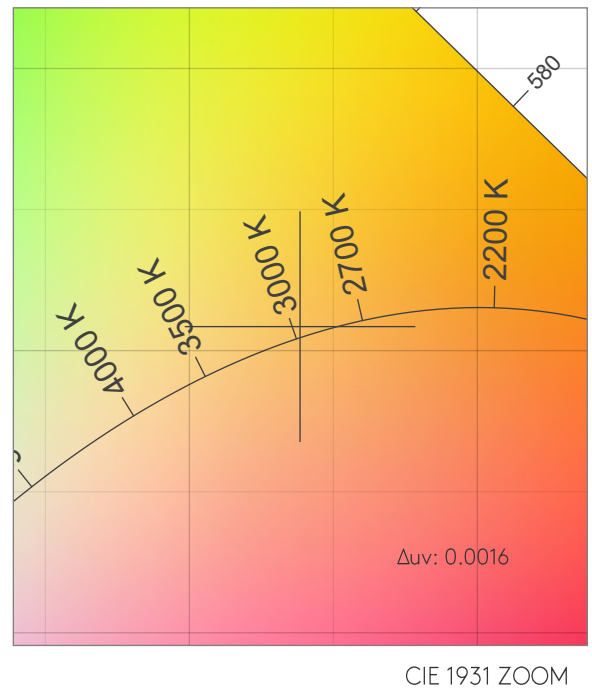
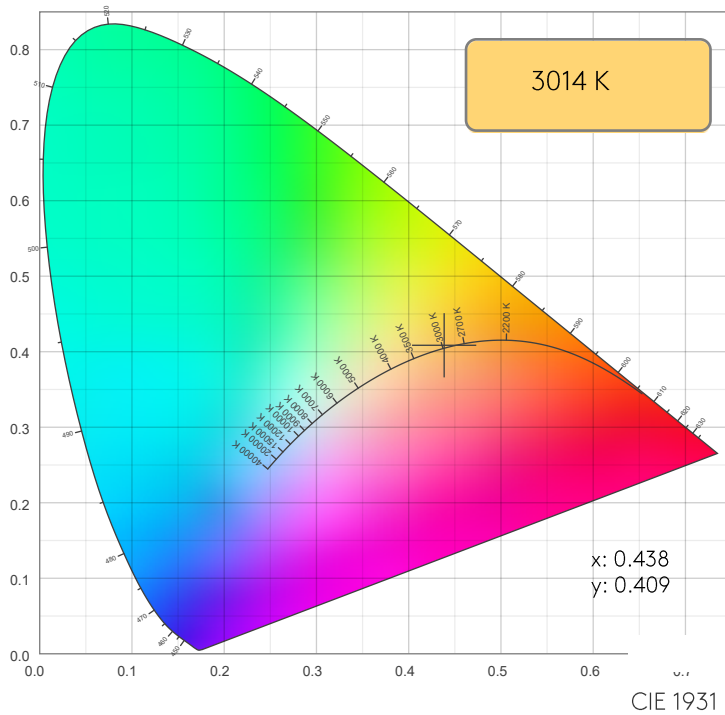
SPECTRA



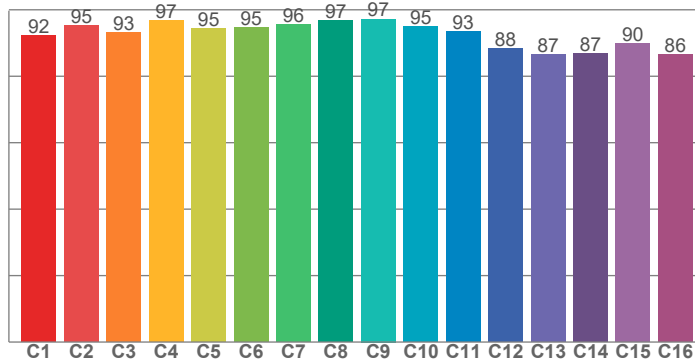
POWER



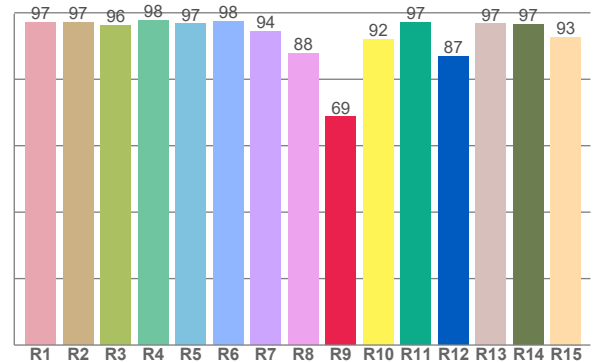
COLOR DETAILS



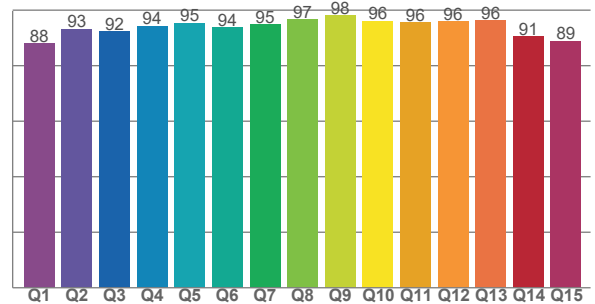
TM30: 93.1



CRI: 95.6 (R1-R8)



CQS: 93.2



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
97.1	97.1	96.3	97.8	96.7	97.5	94.5	87.7	68.7	91.9	97.2	87.0	96.6	96.6	92.7

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	95.4	93.1	96.8	94.5	94.6	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
88.1	93.2	92.4	94.3	95.4	93.8	94.8	96.6	98.0	96.2	95.5	95.9	96.3	90.5	88.9

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
3014 K	95.6	68.7	93.1	100.1	93.2	0.438	0.409	0.250	0.349	0.0016

MINIMA PRO ROUND FIXED IP65 - MATT

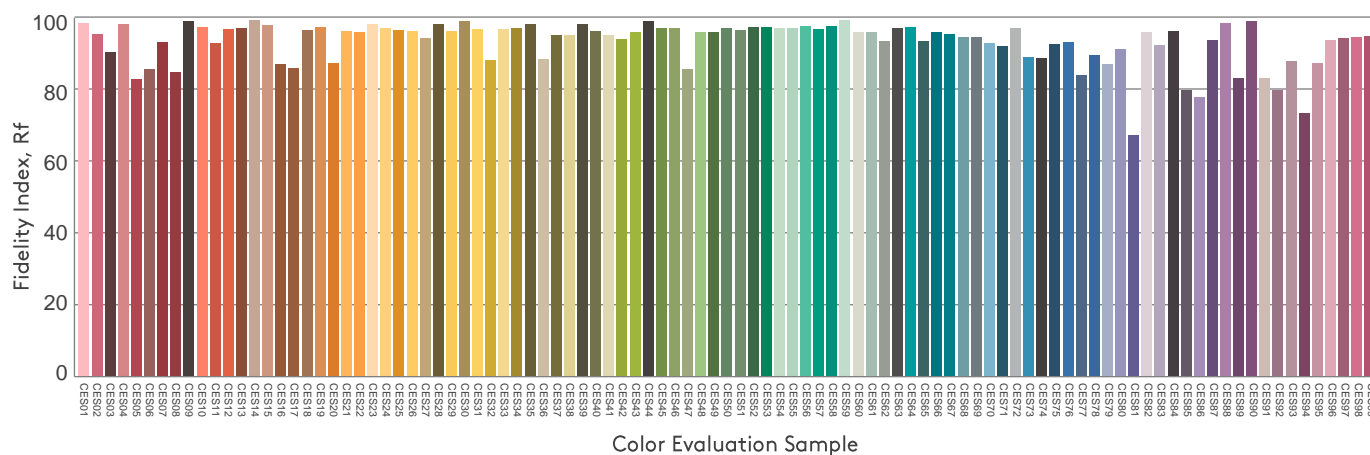
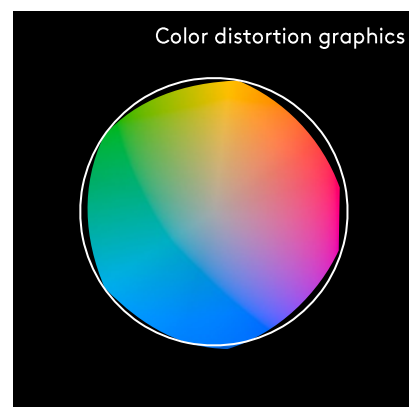
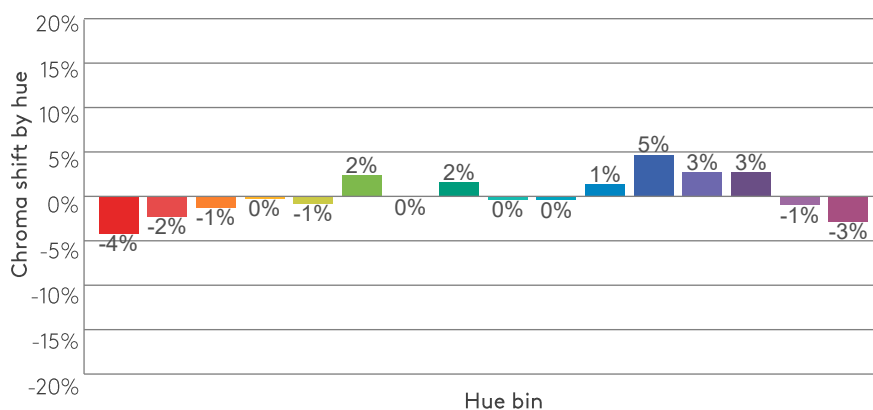
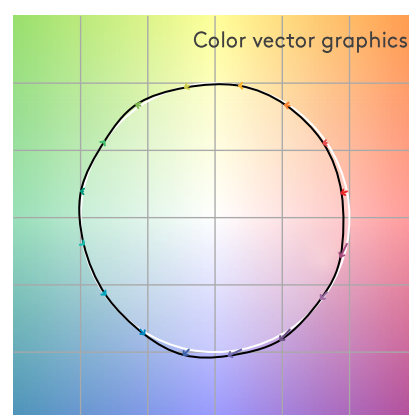
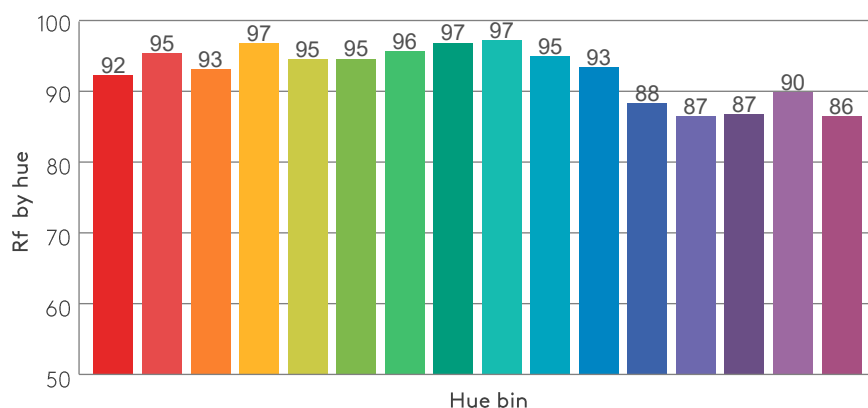
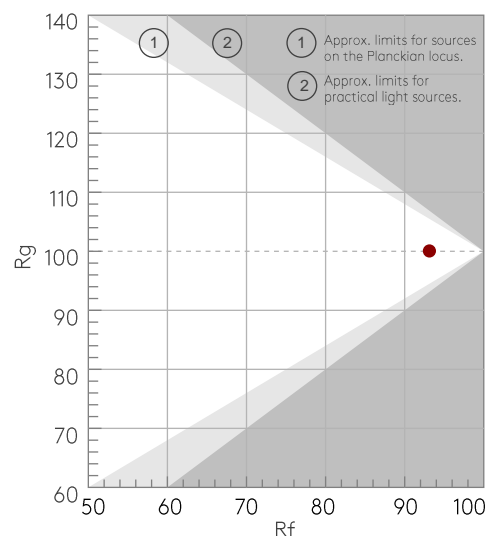
TM30 DETAILS

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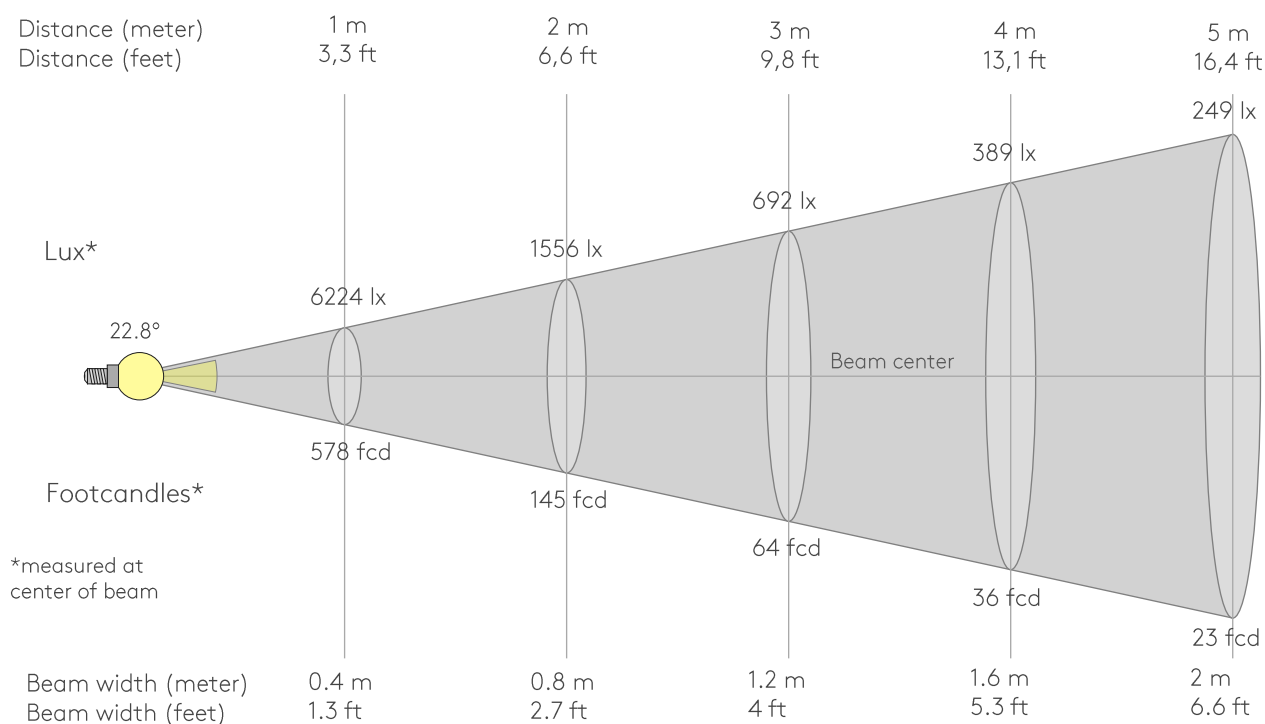
Rf 93.1
Fidelity index Rf

Rg 100.1
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%	-6%
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
6224lx	1556lx	692lx	389lx	249lx	173lx	127lx	97lx	77lx	62lx	51lx	43lx	37lx	32lx	28lx	24lx	22lx	19lx	17lx	16lx
578.3fcd	144.6fcd	64.3fcd	36.1fcd	23.1fcd	16.1fcd	11.8fcd	9fcd	7.1fcd	5.8fcd	4.8fcd	4fcd	3.4fcd	3fcd	2.6fcd	2.3fcd	2fcd	1.8fcd	1.6fcd	1.4fcd

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°
6224	6121	5801	5247	4506	3684	2883	2169	1564	1099	775	556	399	286	204	146	105	77	55	38
100%	98%	93%	84%	72%	59%	46%	35%	25%	18%	12%	9%	6%	5%	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°
6224	6121	5801	5247	4506	3684	2883	2169	1564	1099	775	556	399	286	204	146	105	77	55	38
100%	98%	93%	84%	72%	59%	46%	35%	25%	18%	12%	9%	6%	5%	3%	2%	2%	1%	1%	1%

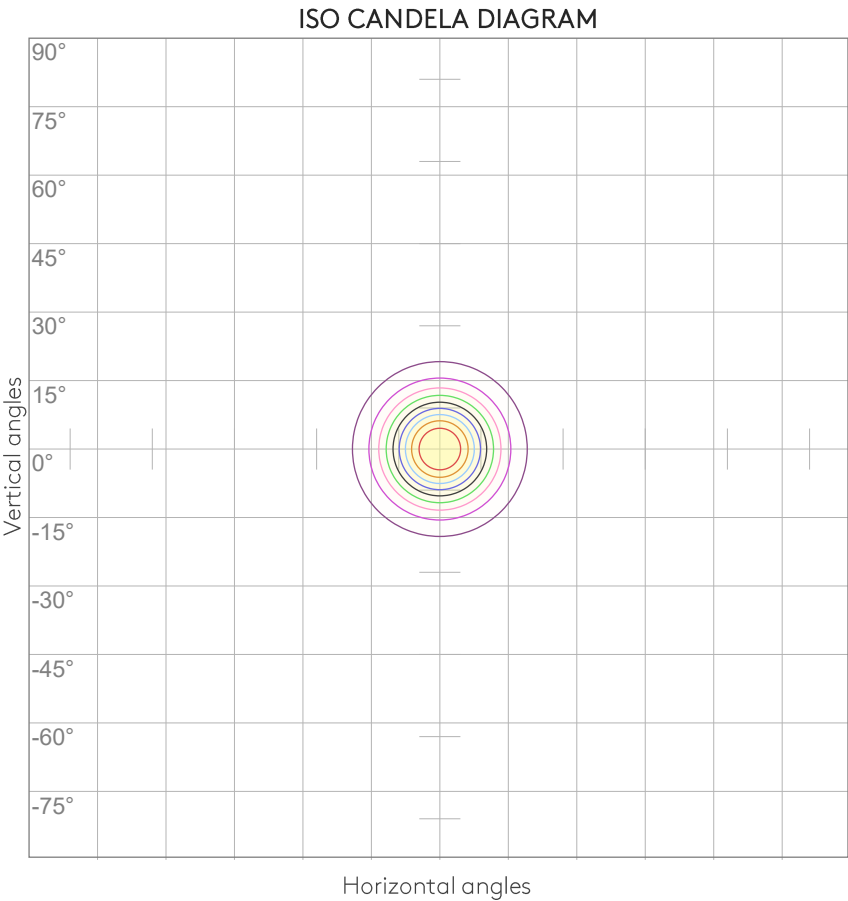
Intensities in 180° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
6224	6121	5801	5247	4506	3684	2883	2169	1564	1099	775	556	399	286	204	146	105	77	55	38
100%	98%	93%	84%	72%	59%	46%	35%	25%	18%	12%	9%	6%	5%	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°
6224	6121	5801	5247	4506	3684	2883	2169	1564	1099	775	556	399	286	204	146	105	77	55	38
100%	98%	93%	84%	72%	59%	46%	35%	25%	18%	12%	9%	6%	5%	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
22.8°	42.6°	59.2°	99.6%	99.0%

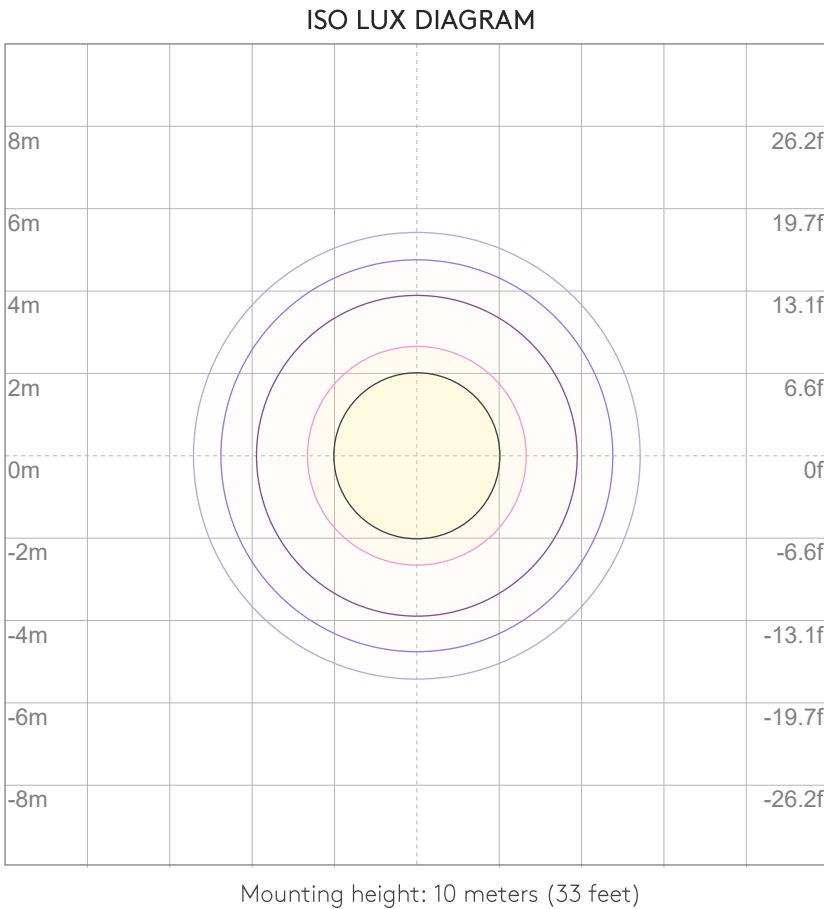


- 10% 622 cd
- 20% 1245 cd
- 30% 1867 cd
- 40% 2490 cd
- 50% 3112 cd
- 60% 3735 cd
- 70% 4357 cd
- 80% 4979 cd
- 90% 5602 cd

Conditions:

Number of c-planes: 8

Candela at center: 6224 cd



- 3% 1.87 lx
- 5% 3.11 lx
- 10% 6.22 lx
- 30% 18.7 lx
- 50% {LUX_10M50} lx

Conditions:

Number of c-planes: 8

Lux at center: 62.2 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	12.3	12.7	12.4	12.9	13.1	12.3	12.7	12.4	12.9	13.1
	3H	12.1	12.6	12.4	12.8	13.0	12.1	12.6	12.4	12.8	13.0
	4H	12.0	12.6	12.4	12.8	13.0	12.0	12.6	12.4	12.8	13.0
	6H	12.0	12.5	12.3	12.8	13.1	12.0	12.5	12.3	12.8	13.1
	8H	12.0	12.4	12.3	12.7	13.1	12.0	12.4	12.3	12.7	13.1
	12H	11.9	12.3	12.3	12.7	13.1	11.9	12.3	12.3	12.7	13.1
4H	2H	12.0	12.5	12.4	12.7	13.0	12.0	12.5	12.4	12.7	13.0
	3H	12.0	12.4	12.3	12.7	13.1	12.0	12.4	12.3	12.7	13.1
	4H	11.9	12.2	12.3	12.7	13.2	11.9	12.2	12.3	12.7	13.2
	6H	11.8	12.3	12.3	12.6	12.9	11.8	12.3	12.3	12.6	12.9
	8H	11.8	12.2	12.3	12.5	12.9	11.8	12.2	12.3	12.5	12.9
	12H	11.7	12.0	12.2	12.4	12.9	11.7	12.0	12.2	12.4	12.9
8H	4H	11.7	12.2	12.3	12.5	12.8	11.7	12.2	12.3	12.5	12.8
	6H	11.7	12.0	12.2	12.4	12.9	11.7	12.0	12.2	12.4	12.9
	8H	11.7	11.9	12.2	12.4	13.1	11.7	11.9	12.2	12.4	13.1
	12H	11.7	11.8	12.3	12.3	12.9	11.7	11.8	12.3	12.3	12.9
12H	4H	11.7	12.0	12.2	12.4	12.8	11.7	12.0	12.2	12.4	12.8
	6H	11.7	11.9	12.2	12.4	13.0	11.7	11.9	12.2	12.4	13.0
	8H	11.7	11.8	12.2	12.3	12.9	11.7	11.8	12.2	12.3	12.9
Variation of the observer position for the luminaire distance S											
S = 1.0H		5.2 / -6.3					5.2 / -6.3				
S = 1.5H		7.9 / -7.4					7.9 / -7.4				
S = 2.0H		9.8 / -8.8					9.8 / -8.8				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 1210 lm total luminous flux											

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LIGHT PLANNING

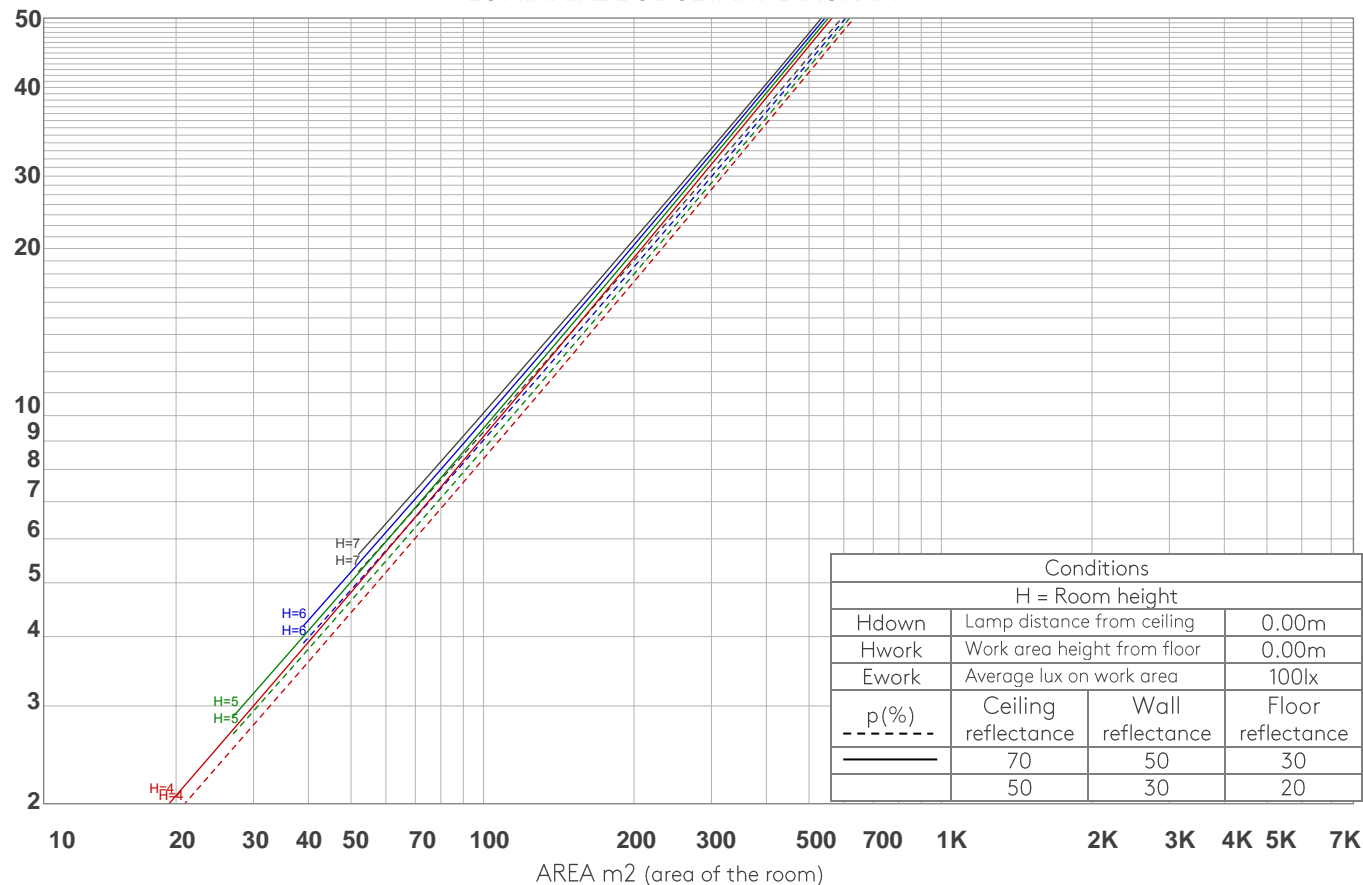
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COEFFICIENTS OF UTILIZATION

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	102	109	106	104	101	103	101	99	100	98	97	97	96	95	94
3	108	103	100	97	106	102	99	96	100	97	95	97	95	93	95	93	92	91
4	105	99	96	93	103	98	95	92	96	93	91	95	92	90	93	91	89	88
5	102	96	92	89	100	95	91	89	94	90	88	92	89	87	91	88	86	85
6	99	93	89	86	98	92	88	86	91	88	85	90	87	85	88	86	84	83
7	96	90	86	83	95	89	86	83	88	85	82	87	84	82	86	84	82	81
8	94	87	83	81	93	87	83	80	86	83	80	85	82	80	84	82	80	79
9	91	85	81	78	91	85	81	78	84	80	78	83	80	78	82	80	78	77
10	89	83	79	76	88	82	79	76	82	78	76	81	78	76	80	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°
469 lm	515 lm	165 lm	43.4 lm	9.51 lm	3.58 lm	1.62 lm	0.633 lm	0.167 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.092 lm	0.088 lm	0.094 lm	0.132 lm	0.238 lm	0.479 lm	0.670 lm	0.510 lm	0.110 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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