

PHOTOMETRIC TEST REPORT

MINIMA PRO SQUARE FIXED IP65
- MATT WHITE - 4001107

astro

MINIMA PRO SQUARE FIXED IP65 - MATT

astro

LIGHT EFFICIENCY:

68 Lumen/Watt

LIGHT QUALITY:

CRI: 94.7

COLOR TEMPERATURE:

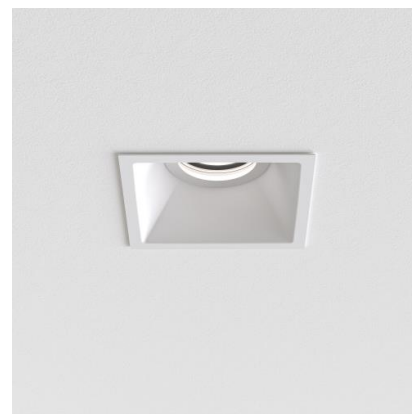
2703 K

OUTPUT: 798 lm

PEAK: 4265 cd

POWER: 11.8 W

PF: 0.95



Tracking number: [n/a](#)

Product name:

Minima Pro Square Fixed IP65 - Matt
White - 4001107

Item number:

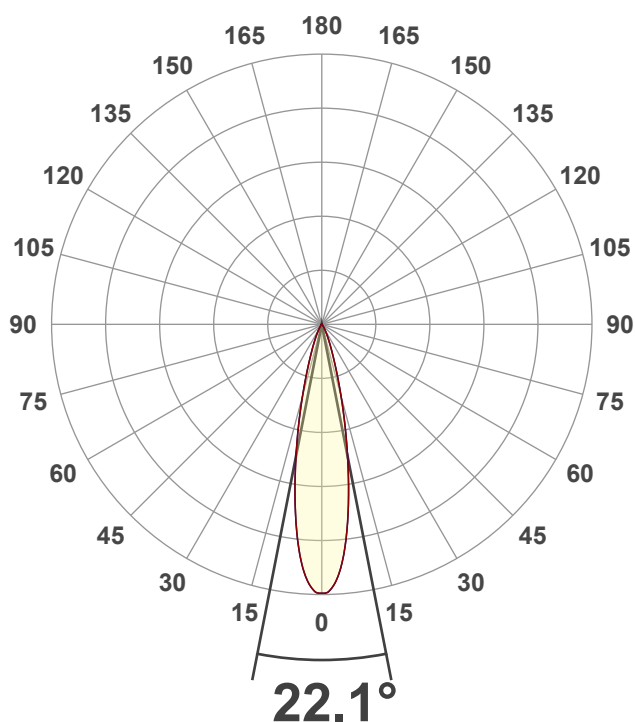
MSF-MW-HQ27G1-15G1-X-D1

Date and time:

03/02/2025 14:19:29

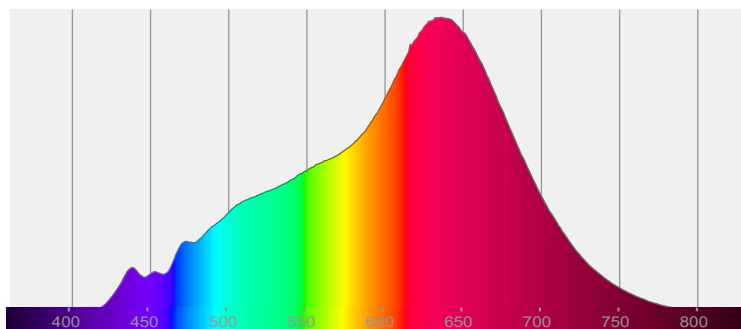
Description:

IP65 LED Downlight

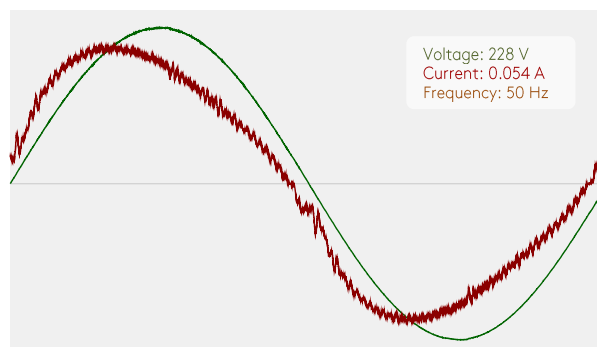


CIE 1931
x: 0.460
y: 0.411

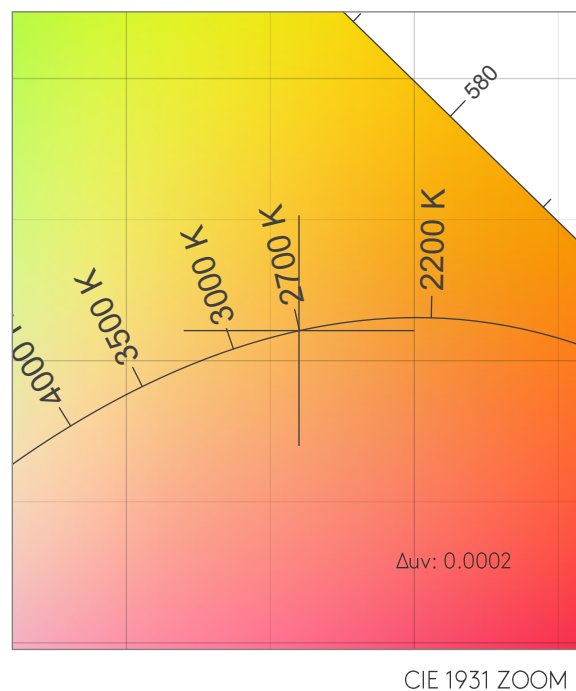
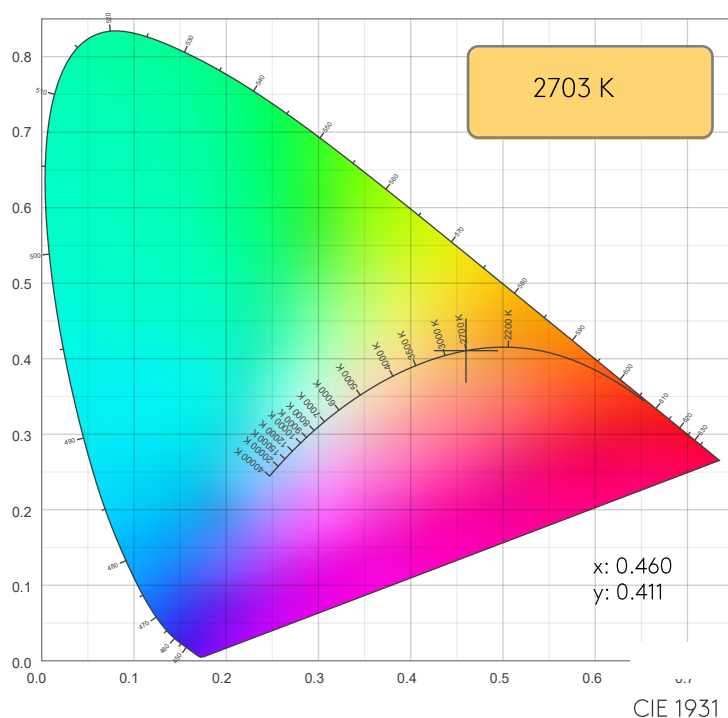
SPECTRA



POWER

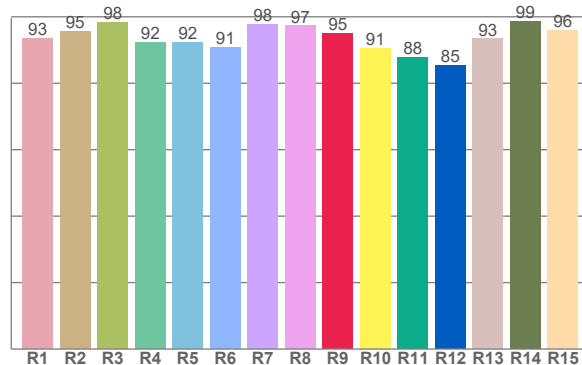
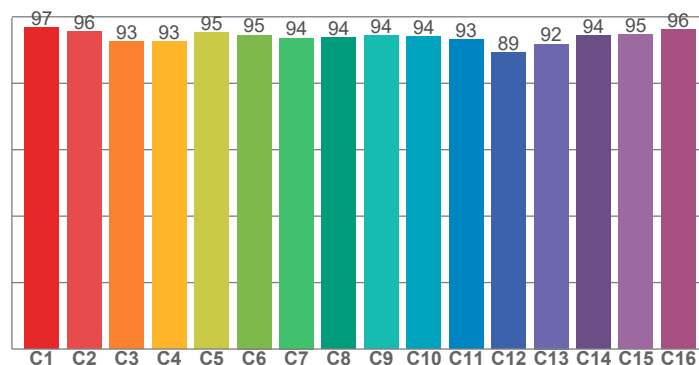


COLOR DETAILS



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
93.4	95.5	98.3	92.4	92.3	90.8	97.8	97.3	95.0	90.6	87.8	85.4	93.4	98.6	96.0

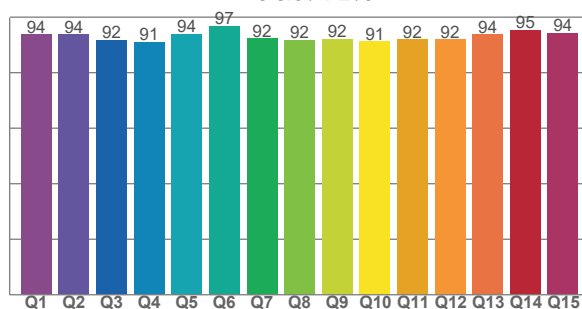
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
96.7	95.7	92.7	92.5	95.3	94.5	93.6	93.9	94.3	94.0	93.2	89.2	91.8	94.4	94.8	96.3

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
93.7	93.7	91.7	91.0	93.9	96.7	92.3	91.7	92.1	91.2	91.9	92.0	93.7	95.4	94.4

CQS: 92.8

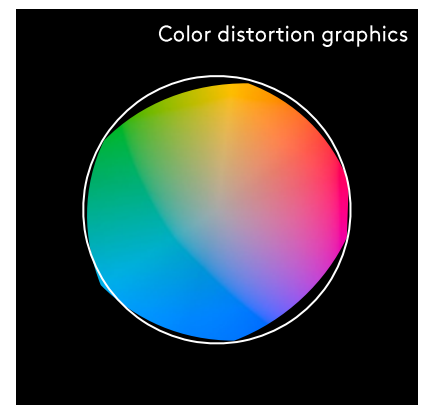


COLOR PARAMETERS

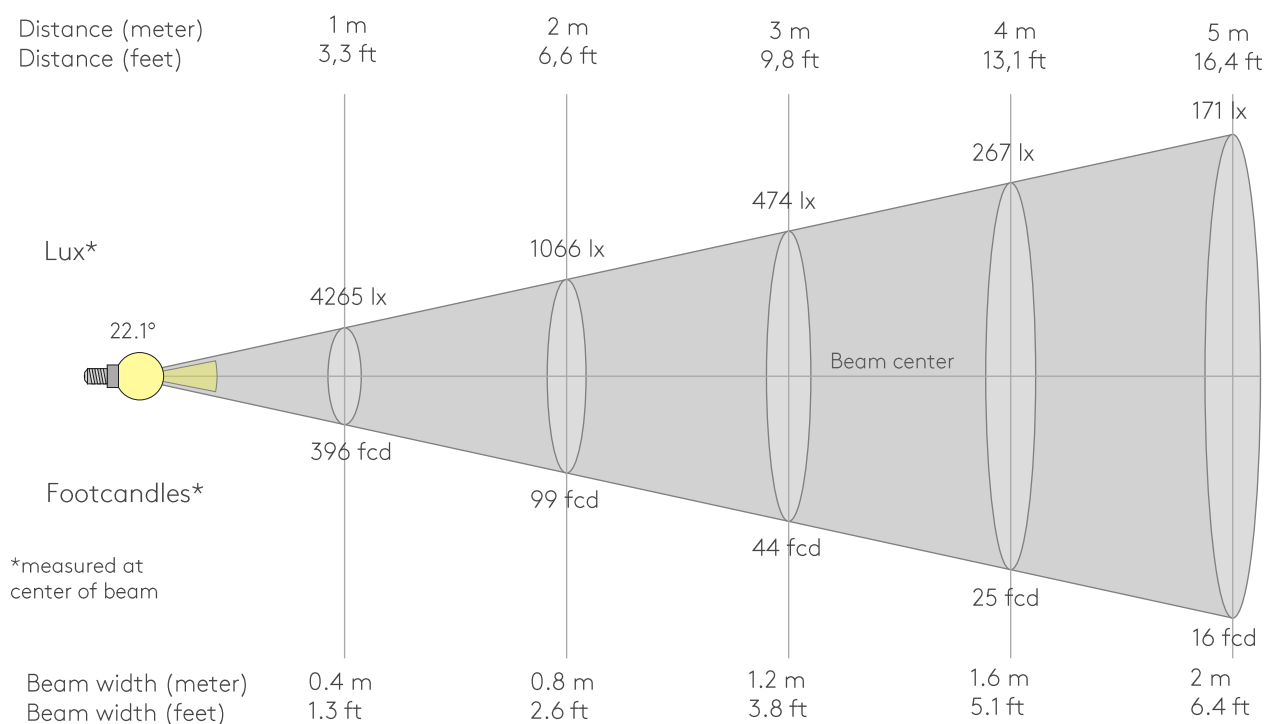
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
2703 K	94.7	95.0	94.1	99.5	92.8	0.460	0.411	0.263	0.352	0.0002

Gammut index Rg

		Graphic shifts (%)	
Hue Bin	R _f	Chroma	Hue
1	97	1%	1%
2	96	2%	-2%
3	93	0%	-4%
4	93	-3%	-5%
5	95	-3%	-1%
6	95	-2%	3%
7	94	-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
4265lx	1066lx	474lx	267lx	171lx	118lx	87lx	67lx	53lx	43lx	35lx	30lx	25lx	22lx	19lx	17lx	15lx	13lx	12lx	11lx
396.2fcd	99.1fcd	44fcd	24.8fcd	15.8fcd	11fcd	8.1fcd	6.2fcd	4.9fcd	4fcd	3.3fcd	2.8fcd	2.3fcd	2fcd	1.8fcd	1.5fcd	1.4fcd	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°
4265	4204	3958	3541	3006	2431	1881	1396	997	700	496	357	257	185	133	95	70	53	38	28
100%	99%	93%	83%	70%	57%	44%	33%	23%	16%	12%	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°
4265	4204	3958	3541	3006	2431	1881	1396	997	700	496	357	257	185	133	95	70	53	38	28
100%	99%	93%	83%	70%	57%	44%	33%	23%	16%	12%	8%	6%	4%	3%	2%	2%	1%	1%	1%

Intensities in 180° c-plane

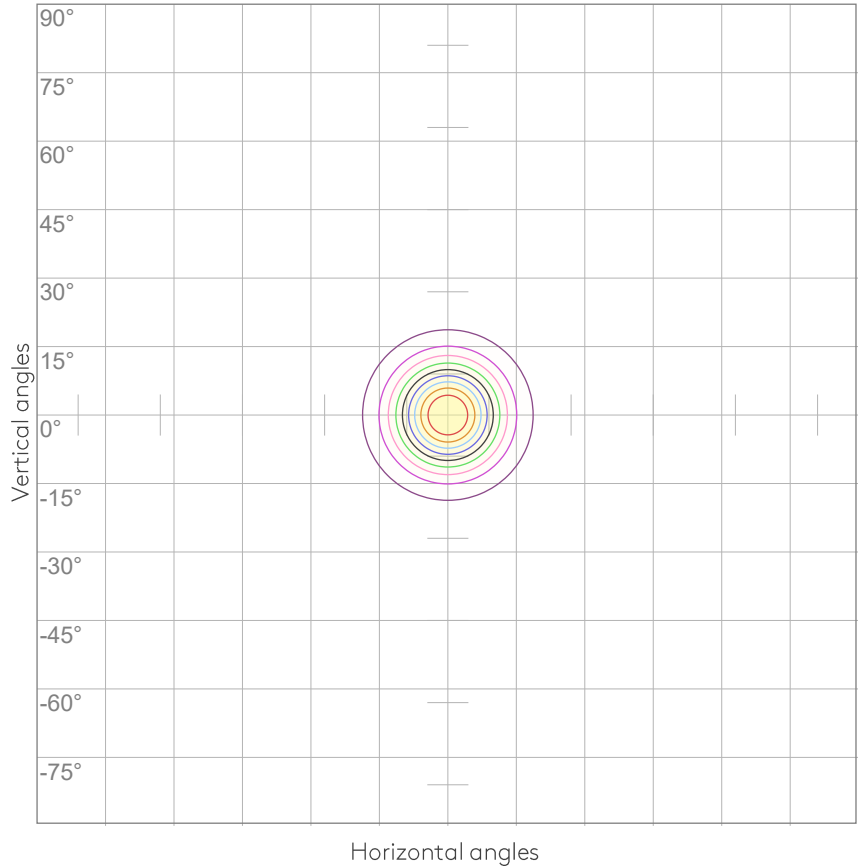
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
4265	4204	3958	3541	3006	2431	1881	1396	997	700	496	357	257	185	133	95	70	53	38	28
100%	99%	93%	83%	70%	57%	44%	33%	23%	16%	12%	8%	6%	4%	3%	2%	2%	1%	1%	1%

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°
4265	4204	3958	3541	3006	2431	1881	1396	997	700	496	357	257	185	133	95	70	53	38	28
100%	99%	93%	83%	70%	57%	44%	33%	23%	16%	12%	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
22.1°	41.8°	58.6°	99.6%	98.9%

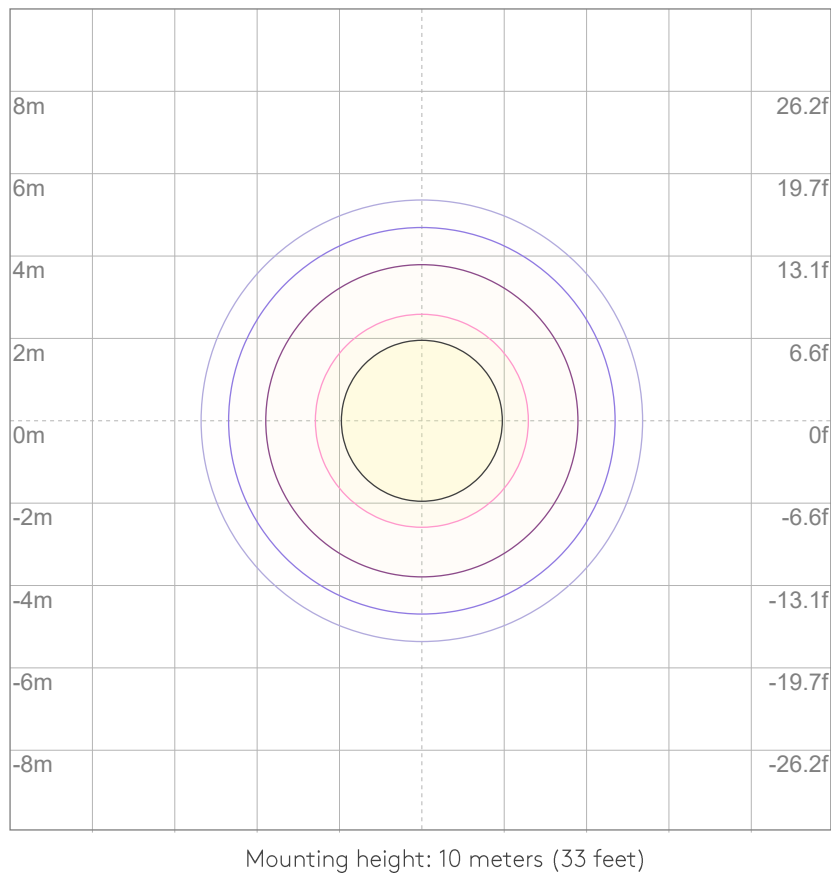
ISO CANDELA DIAGRAM



10%	426 cd
20%	853 cd
30%	1279 cd
40%	1706 cd
50%	2132 cd
60%	2559 cd
70%	2985 cd
80%	3412 cd
90%	3838 cd

Conditions:
Number of c-planes: 8
Candela at center: 4265 cd

ISO LUX DIAGRAM



3%	1.28 lx
5%	2.13 lx
10%	4.26 lx
30%	12.8 lx
50%	{LUX_10M50} lx

Conditions:
Number of c-planes: 8
Lux at center: 42.6 lx

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

UGR

GLARE EVALUATION ACCORDING TO UGR

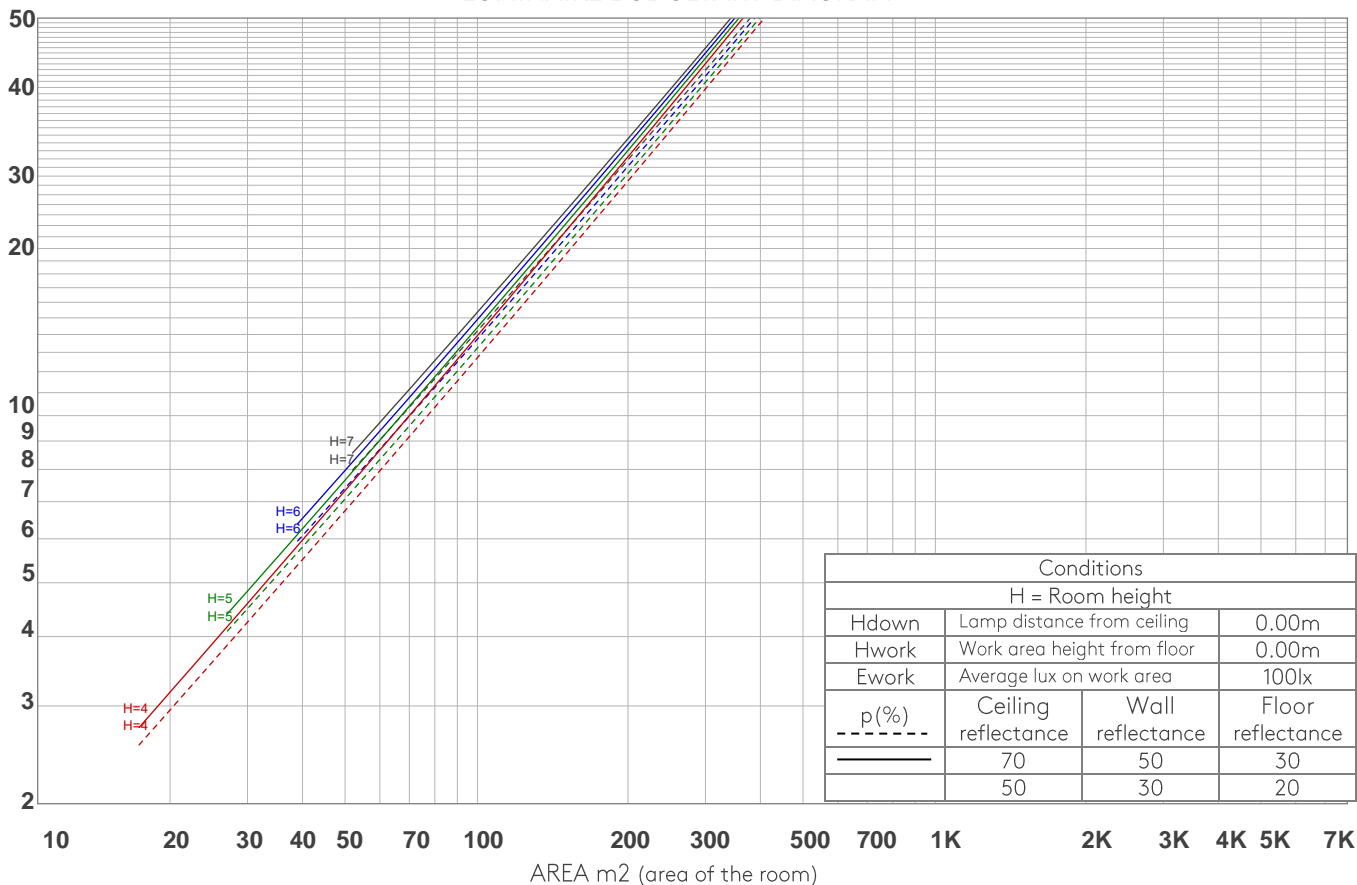
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	11.3	11.7	11.4	11.9	12.1	11.3	11.7	11.4	11.9	12.1
	3H	11.1	11.6	11.4	11.8	12.0	11.1	11.6	11.4	11.8	12.0
	4H	11.0	11.6	11.4	11.8	12.0	11.0	11.6	11.4	11.8	12.0
	6H	11.0	11.5	11.3	11.8	12.1	11.0	11.5	11.3	11.8	12.1
	8H	11.0	11.4	11.3	11.7	12.1	11.0	11.4	11.3	11.7	12.1
	12H	10.9	11.3	11.3	11.7	12.1	10.9	11.3	11.3	11.7	12.1
4H	2H	11.0	11.6	11.4	11.8	12.0	11.0	11.6	11.4	11.8	12.0
	3H	11.0	11.4	11.3	11.8	12.2	11.0	11.4	11.3	11.8	12.2
	4H	10.9	11.2	11.3	11.7	12.2	10.9	11.2	11.3	11.7	12.2
	6H	10.8	11.2	11.3	11.6	11.9	10.8	11.2	11.3	11.6	11.9
	8H	10.7	11.2	11.3	11.5	11.9	10.7	11.2	11.3	11.5	11.9
	12H	10.7	11.0	11.2	11.4	11.9	10.7	11.0	11.2	11.4	11.9
8H	4H	10.7	11.1	11.2	11.5	11.8	10.7	11.1	11.2	11.5	11.8
	6H	10.7	10.9	11.2	11.4	11.9	10.7	10.9	11.2	11.4	11.9
	8H	10.7	10.9	11.2	11.4	12.0	10.7	10.9	11.2	11.4	12.0
	12H	10.6	10.8	11.2	11.3	11.9	10.6	10.8	11.2	11.3	11.9
12H	4H	10.7	11.0	11.2	11.4	11.8	10.7	11.0	11.2	11.4	11.8
	6H	10.7	10.9	11.2	11.4	12.0	10.7	10.9	11.2	11.4	12.0
	8H	10.6	10.8	11.2	11.3	11.9	10.6	10.8	11.2	11.3	11.9
Variation of the observer position for the luminaire distance S											
S = 1.0H		5.1 / -5.9					5.1 / -5.9				
S = 1.5H		7.7 / -7.3					7.7 / -7.3				
S = 2.0H		9.6 / -9.1					9.6 / -9.1				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 798 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	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	83	87	84	82	86	84	82	81
8	94	87	83	81	93	87	83	81	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	89	82	79	76	82	78	76	81	78	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°
315 lm	333 lm	107 lm	30.0 lm	7.28 lm	2.92 lm	1.25 lm	0.347 lm	0.113 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.070 lm	0.065 lm	0.069 lm	0.073 lm	0.139 lm	0.281 lm	0.436 lm	0.344 lm	0.072 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
--------------	--------------------