

PHOTOMETRIC TEST REPORT

MINIMA PRO SQUARE
ADJUSTABLE - MATT WHITE -
4001427

astro

MINIMA PRO SQUARE ADJUSTABLE - MATT

astro

LIGHT EFFICIENCY:

74 Lumen/Watt

LIGHT QUALITY:

CRI: 94.7

COLOR TEMPERATURE:

2713 K

OUTPUT: 864 lm

PEAK: 1606 cd

POWER: 11.7 W

PF: 0.95



Tracking number: [n/a](#)

Product name:

Minima Pro Square Adjustable - Matt
White - 4001427

Item number:

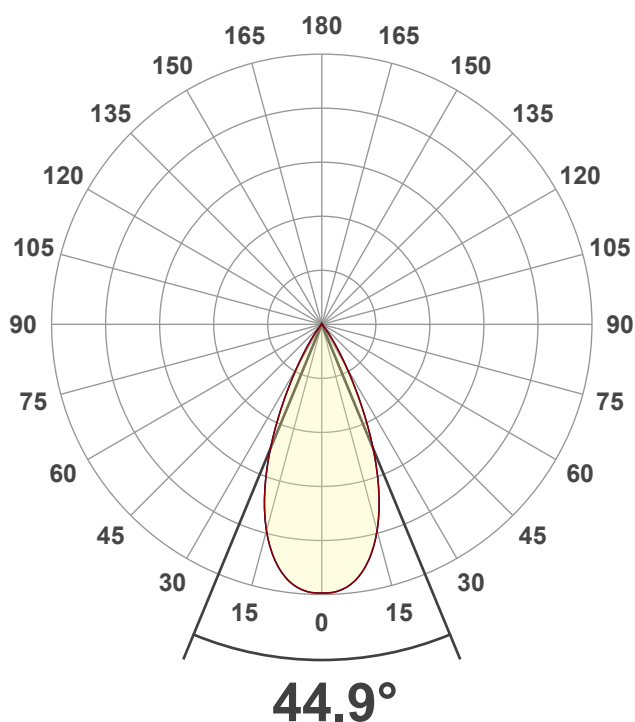
MSA-MW-HQ27G1-50G1-X-D1

Date and time:

04/02/2025 15:51:51

Description:

IP20 LED Downlight

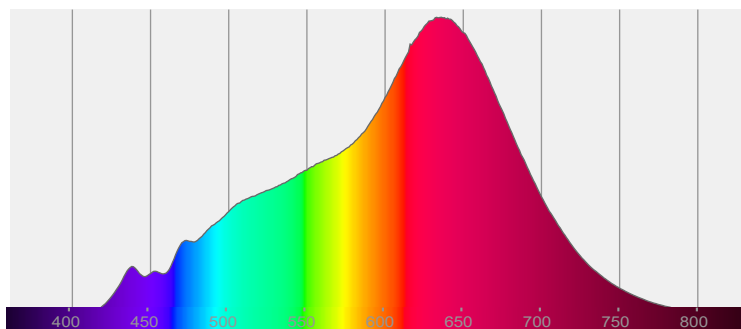


44.9°

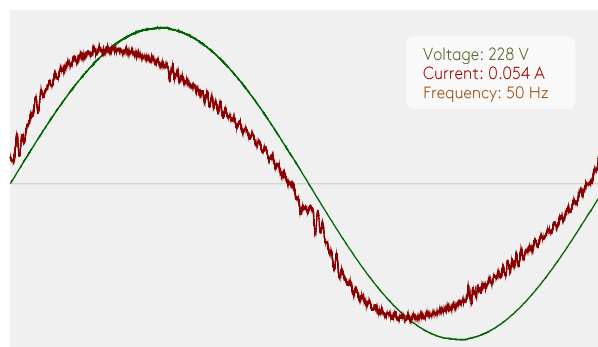


CIE 1931
x: 0.459
y: 0.410

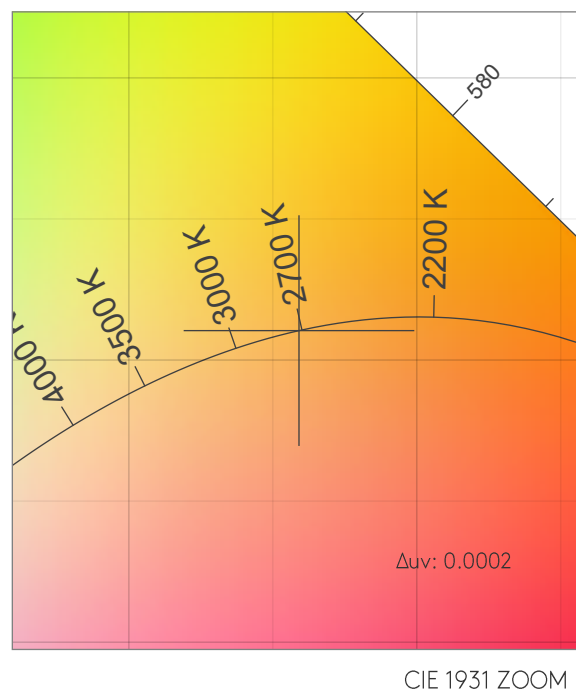
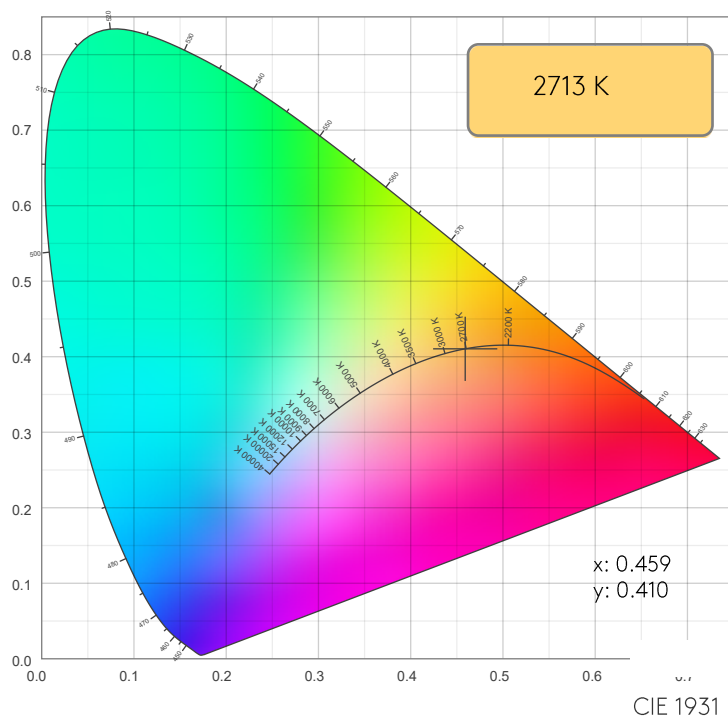
SPECTRA



POWER

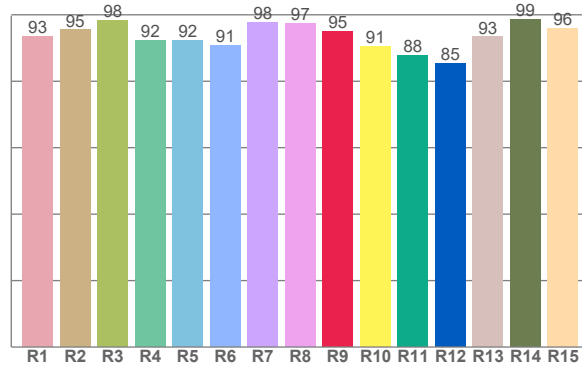
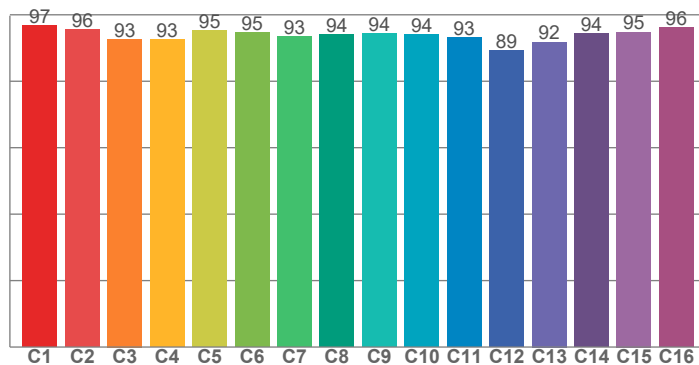


COLOR DETAILS



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
93.4	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

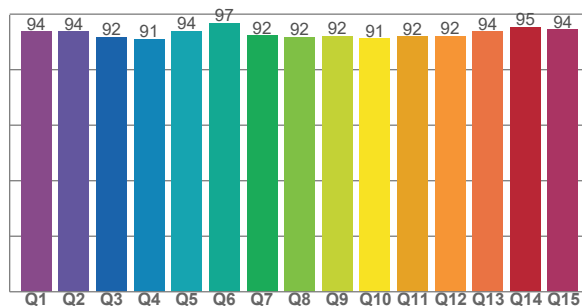
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
96.8	95.7	92.7	92.6	95.3	94.6	93.4	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
93.8	93.8	91.7	91.0	93.9	96.8	92.4	91.8	92.2	91.3	92.0	92.1	93.8	95.4	94.4

CQS: 92.8



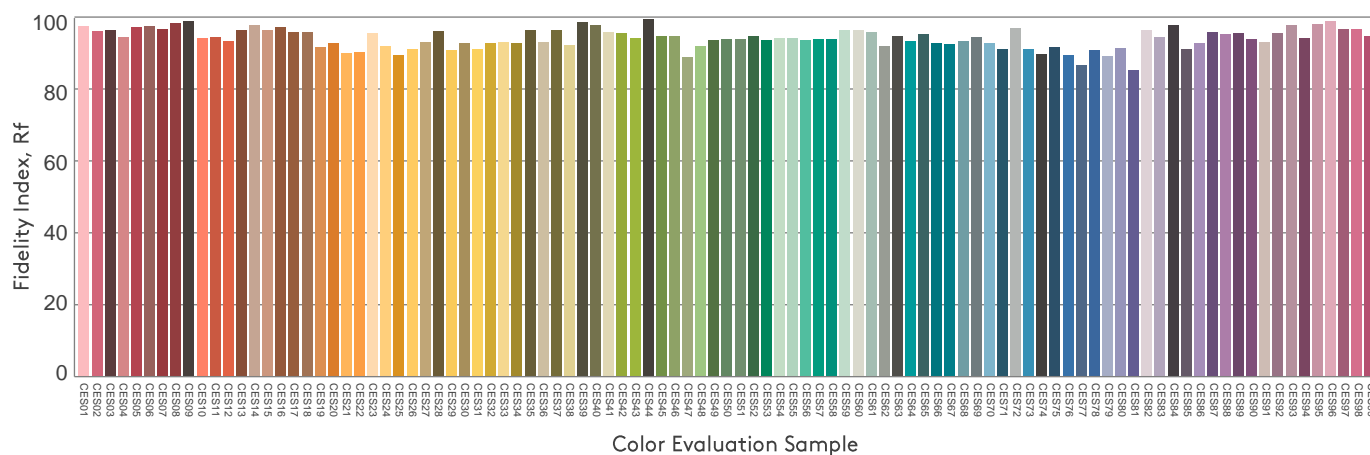
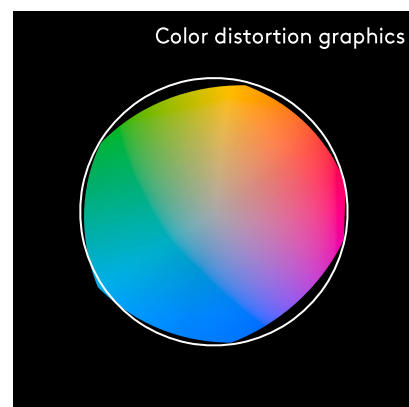
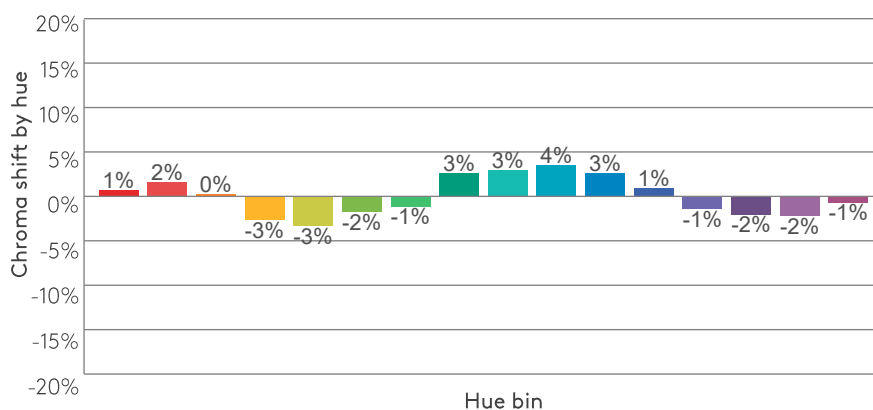
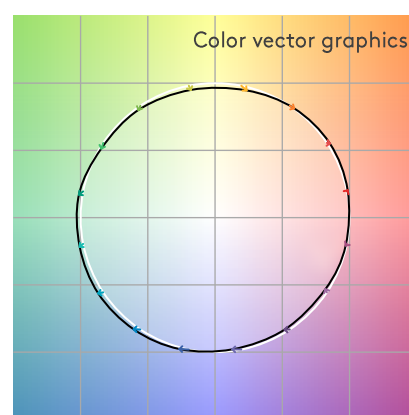
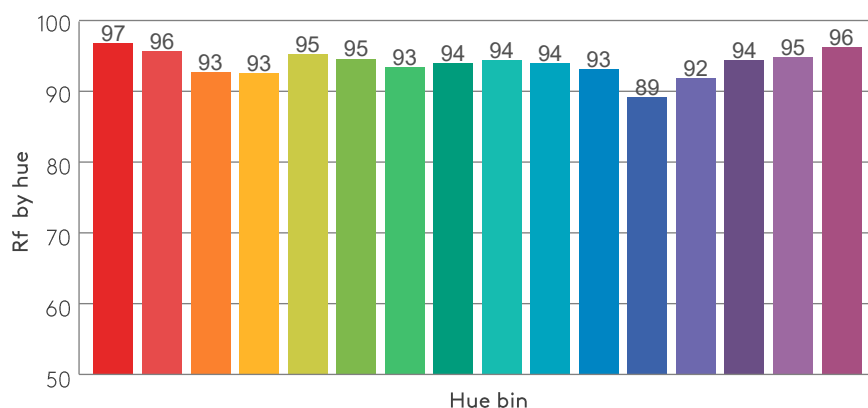
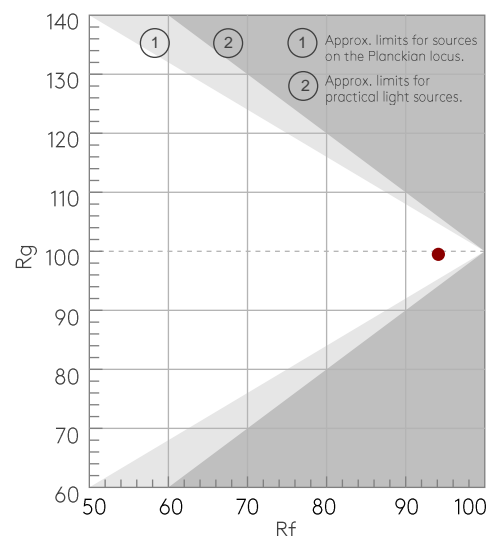
COLOR PARAMETERS

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
2713 K	94.7	95.0	94.1	99.5	92.8	0.459	0.410	0.262	0.351	0.0002

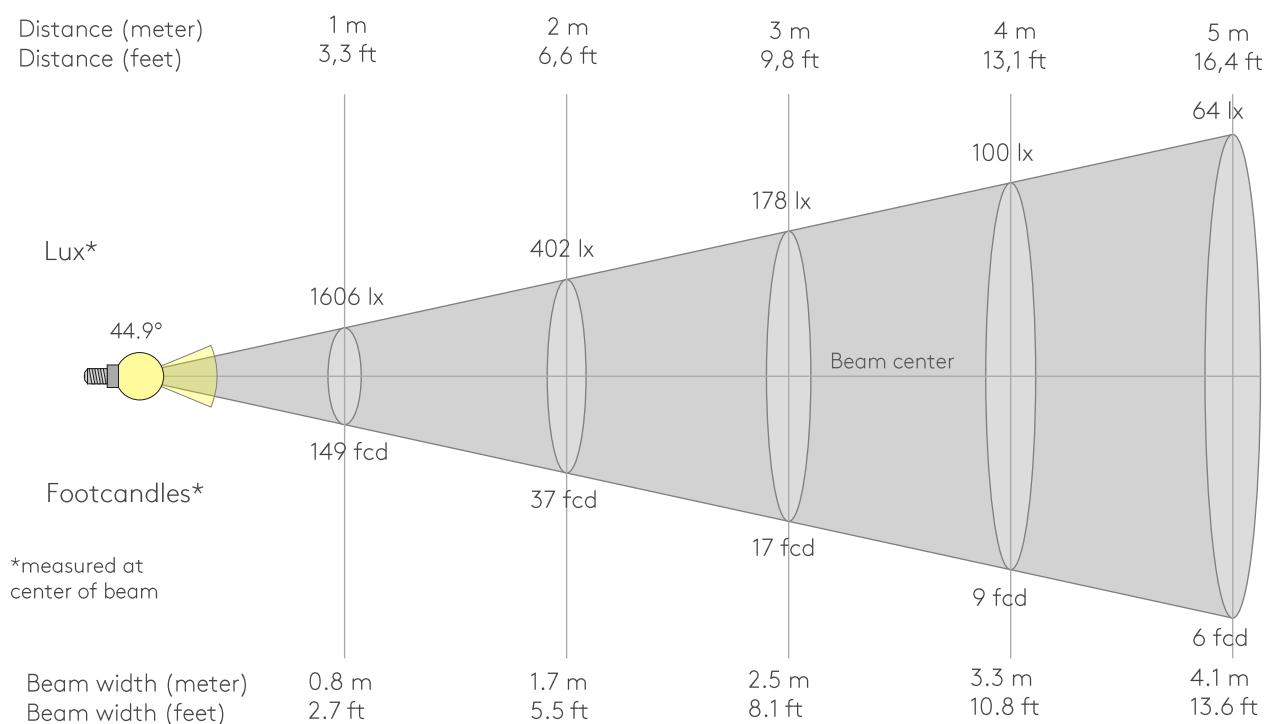
Rf 94.1
Fidelity index Rf

Rg 99.5
Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	97	1%	1%
2	96	2%	-2%
3	93	0%	-4%
4	93	-3%	-4%
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
1606lx	402lx	178lx	100lx	64lx	45lx	33lx	25lx	20lx	16lx	13lx	11lx	10lx	8lx	7lx	6lx	6lx	5lx	4lx	4lx
149.2fcd	37.3fcd	16.6fcd	9.3fcd	6fcd	4.1fcd	3fcd	2.3fcd	1.8fcd	1.5fcd	1.2fcd	1fcd	0.9fcd	0.8fcd	0.7fcd	0.6fcd	0.5fcd	0.5fcd	0.4fcd	0.4fcd

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°
1606	1605	1593	1569	1531	1478	1409	1324	1224	1108	978	837	689	542	408	294	203	134	84	49
100%	100%	99%	98%	95%	92%	88%	82%	76%	69%	61%	52%	43%	34%	25%	18%	13%	8%	5%	3%

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°
1606	1605	1593	1569	1531	1478	1409	1324	1224	1108	978	837	689	542	408	294	203	134	84	49
100%	100%	99%	98%	95%	92%	88%	82%	76%	69%	61%	52%	43%	34%	25%	18%	13%	8%	5%	3%

Intensities in 180° c-plane

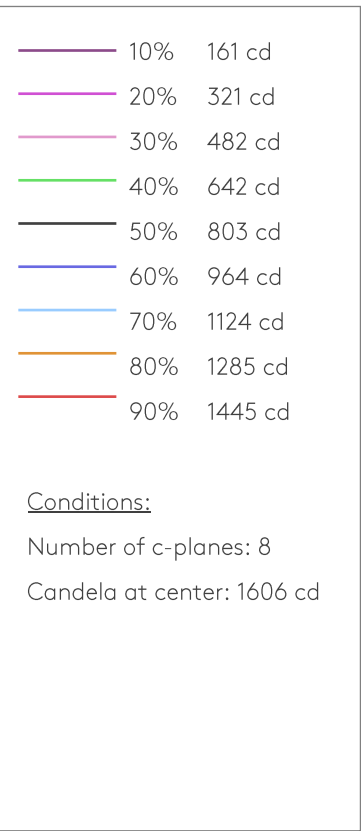
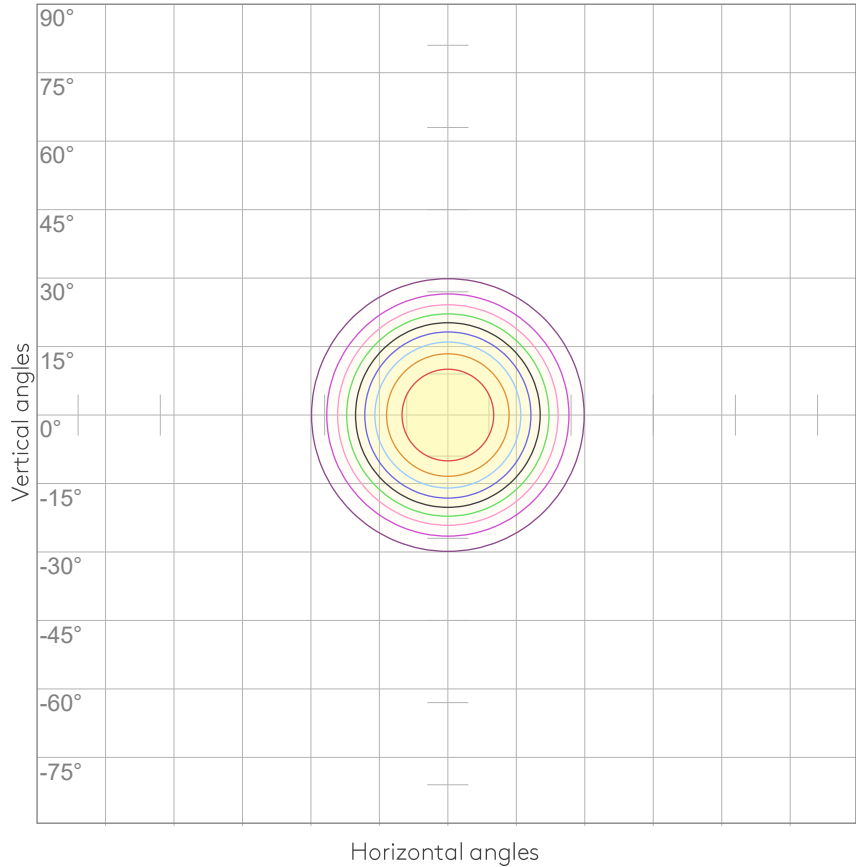
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1606	1605	1593	1569	1531	1478	1409	1324	1224	1108	978	837	689	542	408	294	203	134	84	49
100%	100%	99%	98%	95%	92%	88%	82%	76%	69%	61%	52%	43%	34%	25%	18%	13%	8%	5%	3%

Intensities in 270° c-plane

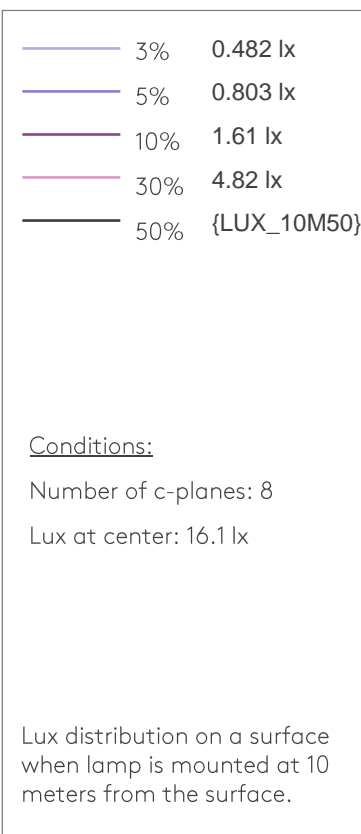
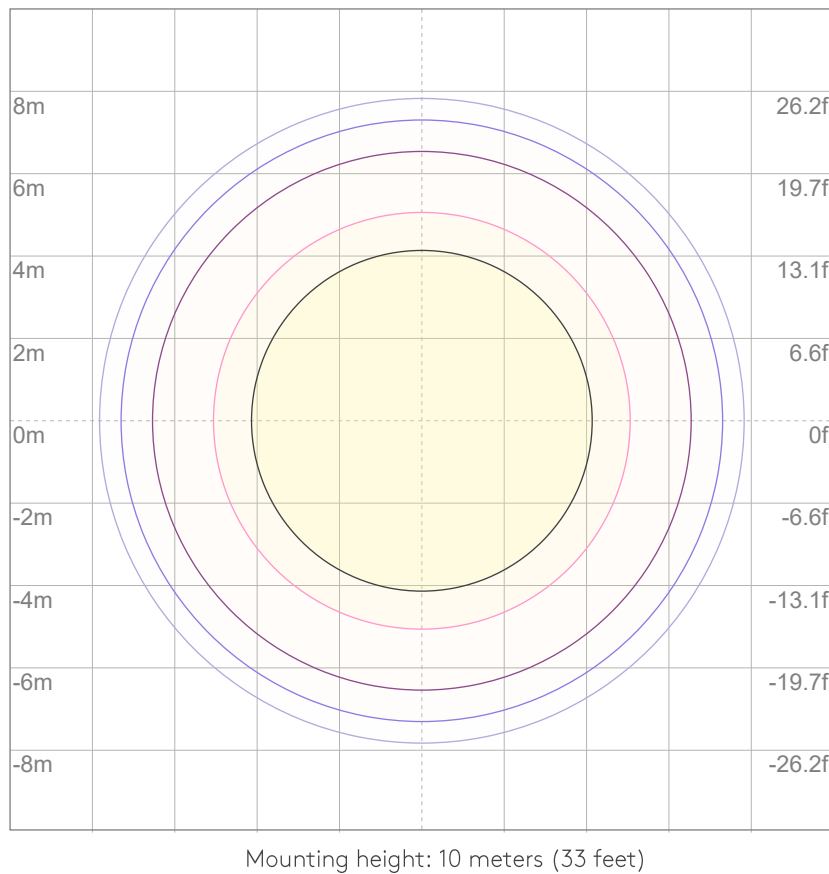
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1606	1605	1593	1569	1531	1478	1409	1324	1224	1108	978	837	689	542	408	294	203	134	84	49
100%	100%	99%	98%	95%	92%	88%	82%	76%	69%	61%	52%	43%	34%	25%	18%	13%	8%	5%	3%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
44.9°	66.4°	77.5°	99.7%	99.0%

ISO CANDELA DIAGRAM



ISO LUX DIAGRAM



UGR

GLARE EVALUATION ACCORDING TO UGR

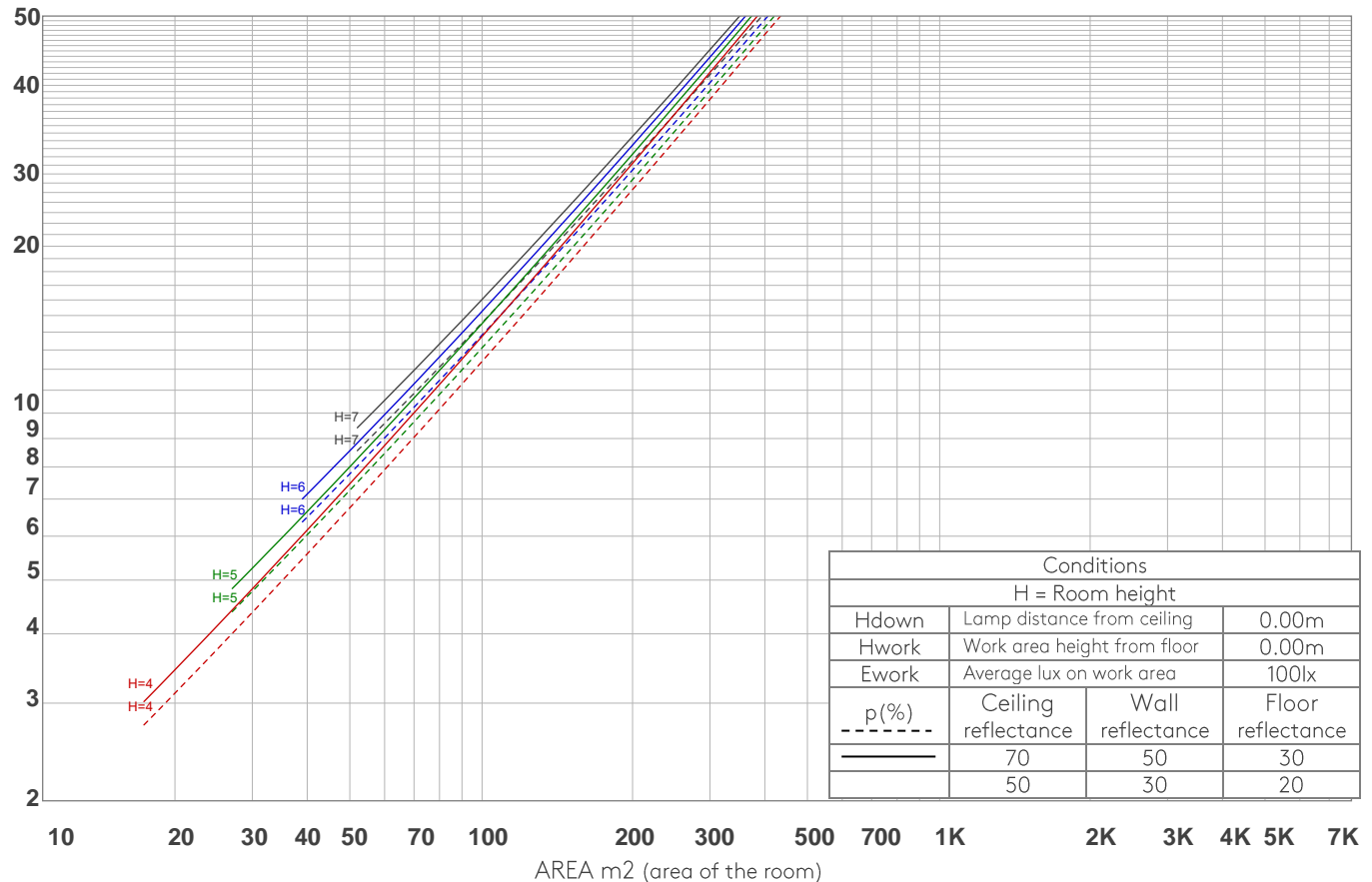
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	16.9	17.4	17.0	17.6	17.8	16.9	17.4	17.0	17.6	17.8
	3H	16.6	17.2	17.0	17.4	17.6	16.6	17.2	17.0	17.4	17.6
	4H	16.5	17.1	16.9	17.4	17.6	16.5	17.1	16.9	17.4	17.6
	6H	16.5	17.0	16.8	17.3	17.7	16.5	17.0	16.8	17.3	17.7
	8H	16.4	17.0	16.8	17.3	17.7	16.4	17.0	16.8	17.3	17.7
	12H	16.4	16.9	16.7	17.2	17.7	16.4	16.9	16.7	17.2	17.7
4H	2H	16.5	17.1	16.9	17.4	17.6	16.5	17.1	16.9	17.4	17.6
	3H	16.4	16.9	16.8	17.3	17.7	16.4	16.9	16.8	17.3	17.7
	4H	16.3	16.7	16.7	17.1	17.7	16.3	16.7	16.7	17.1	17.7
	6H	16.2	16.7	16.7	17.0	17.4	16.2	16.7	16.7	17.0	17.4
	8H	16.1	16.6	16.6	16.9	17.3	16.1	16.6	16.6	16.9	17.3
	12H	16.1	16.4	16.6	16.8	17.3	16.1	16.4	16.6	16.8	17.3
8H	4H	16.1	16.6	16.6	16.9	17.3	16.1	16.6	16.6	16.9	17.3
	6H	16.1	16.4	16.6	16.8	17.3	16.1	16.4	16.6	16.8	17.3
	8H	16.1	16.3	16.6	16.8	17.4	16.1	16.3	16.6	16.8	17.4
	12H	16.0	16.2	16.6	16.7	17.3	16.0	16.2	16.6	16.7	17.3
12H	4H	16.1	16.4	16.6	16.8	17.3	16.1	16.4	16.6	16.8	17.3
	6H	16.1	16.3	16.6	16.8	17.4	16.1	16.3	16.6	16.8	17.4
	8H	16.0	16.2	16.6	16.7	17.3	16.0	16.2	16.6	16.7	17.3
Variation of the observer position for the luminaire distance S											
S = 1.0H		6.3 / -12.7					6.3 / -12.7				
S = 1.5H		9.1 / -14.5					9.1 / -14.5				
S = 2.0H		11.1 / -17.0					11.1 / -17.0				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 864 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	114	112	110	108	112	110	108	106	106	104	103	102	101	100	98	98	97	95
2	110	105	102	99	107	104	101	98	101	98	96	98	96	94	95	93	92	90
3	105	100	95	92	103	98	94	91	96	93	90	93	91	88	91	89	87	86
4	101	95	90	86	99	93	89	86	91	88	85	89	86	84	88	85	83	81
5	97	90	85	81	95	89	84	81	87	83	80	86	82	79	84	81	79	77
6	93	86	80	77	92	85	80	77	83	79	76	82	78	76	81	78	75	74
7	89	82	76	73	88	81	76	73	80	75	72	79	75	72	78	74	72	70
8	86	78	73	69	85	77	73	69	76	72	69	75	72	69	75	71	68	67
9	83	75	70	66	82	74	69	66	73	69	66	72	68	66	72	68	65	64
10	80	71	67	63	79	71	66	63	70	66	63	70	66	63	69	65	63	62

LAMPS (number of lamps)

LUMINAIRE BUDGETARY DIAGRAM



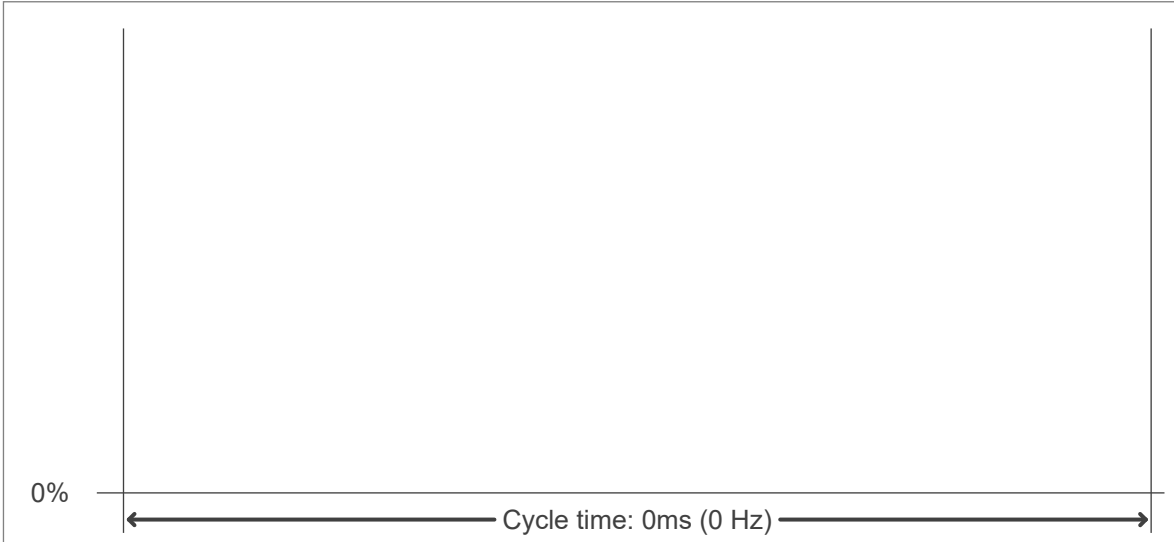
ZONAL LUMEN SUMMARY

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
148 lm	349 lm	277 lm	75.0 lm	8.45 lm	2.86 lm	1.05 lm	0.228 lm	0.076 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.058 lm	0.060 lm	0.068 lm	0.108 lm	0.215 lm	0.338 lm	0.376 lm	0.243 lm	0.068 lm

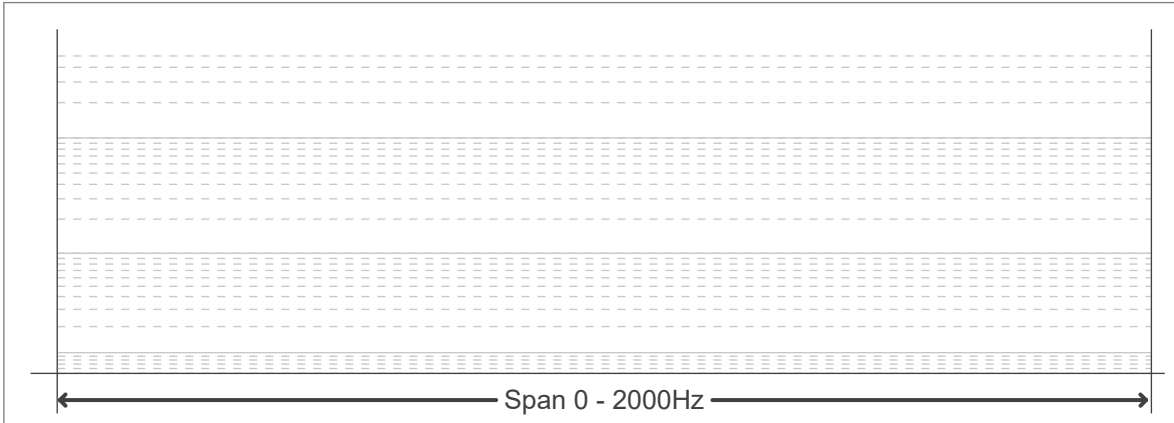
FLICKER CURVE (COMPLETE SAMPLED)



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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