

PHOTOMETRIC TEST REPORT

MINIMA PRO SQUARE
ADJUSTABLE - MATT WHITE -
4001363

astro

MINIMA PRO SQUARE ADJUSTABLE - MATT

astro

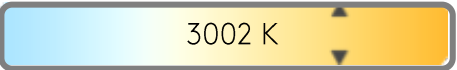
LIGHT EFFICIENCY:



LIGHT QUALITY:



COLOR TEMPERATURE:



OUTPUT: 1245 lm
PEAK: 4289 cd
POWER: 11.7 W
PF: 0.95



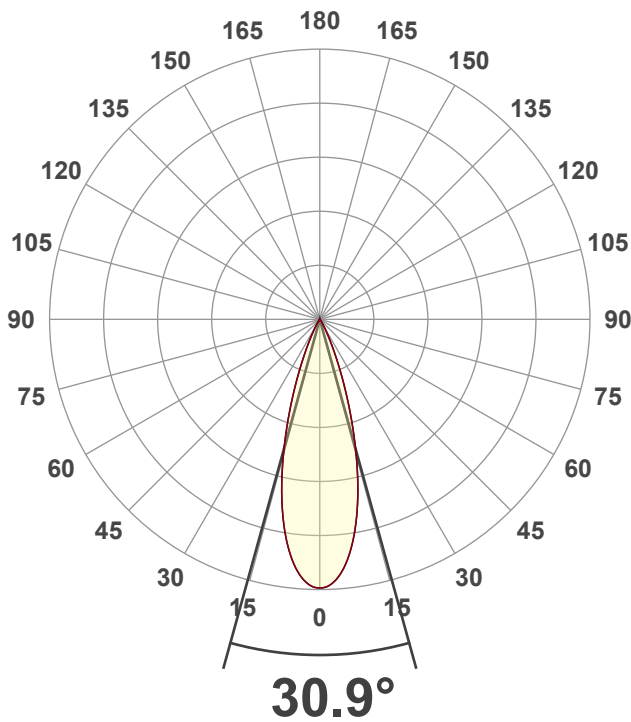
Tracking number: [n/a](#)

Product name:
Minima Pro Square Adjustable - Matt
White - 4001363

Item number:
MSA-MW-HE30G1-30G1-X-D1

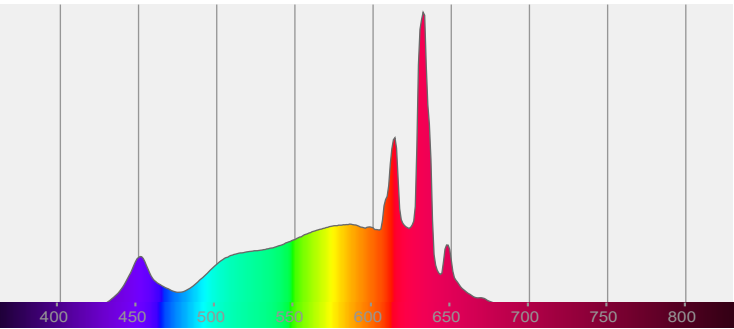
Date and time:
04/02/2025 14:53:01

Description:
IP20 LED Downlight

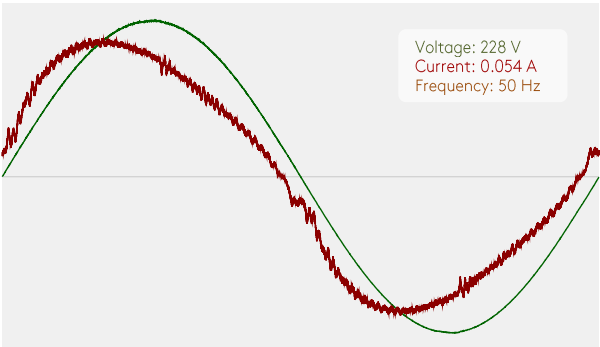


CIE 1931
x: 0.439
y: 0.408

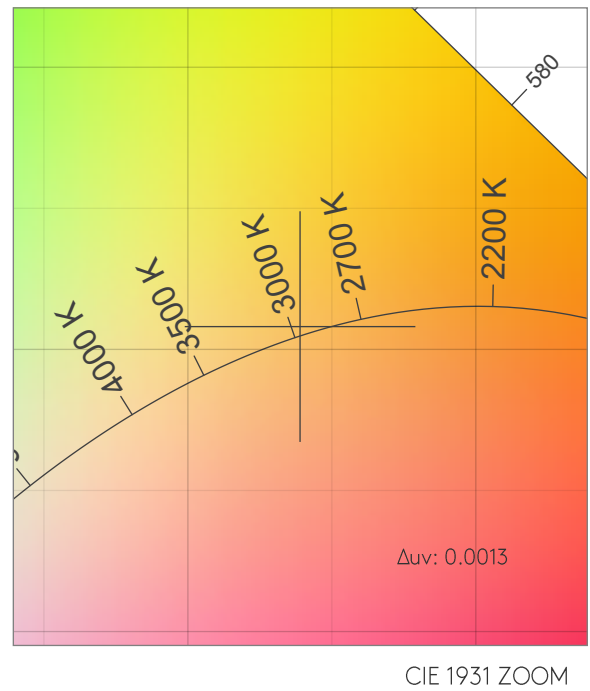
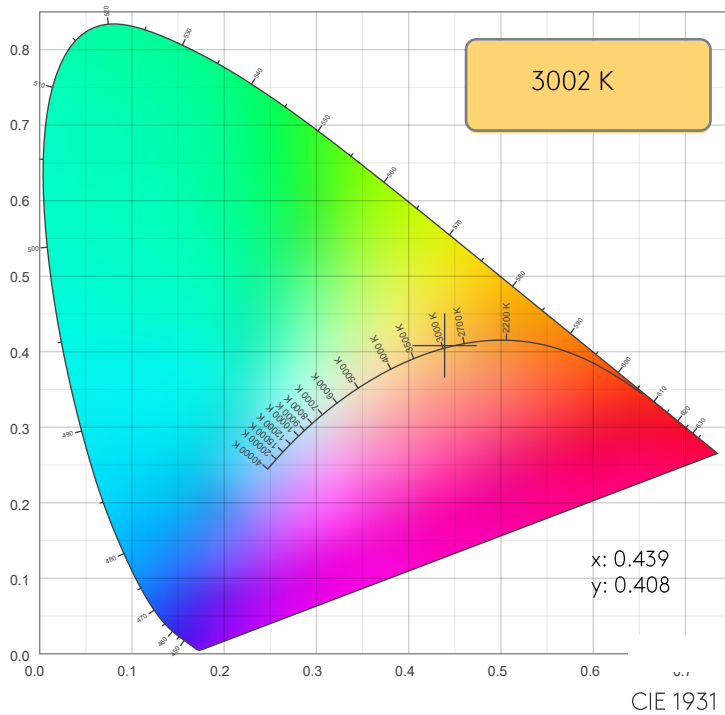
SPECTRA



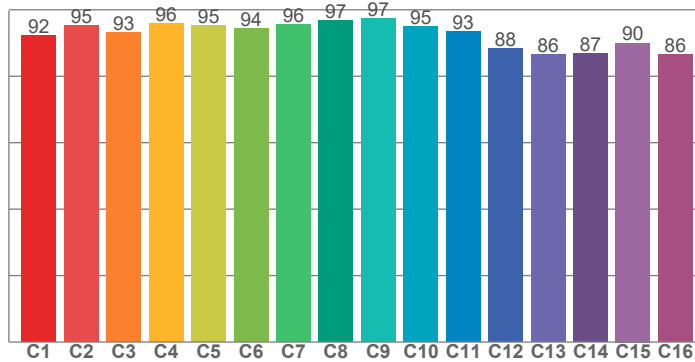
POWER



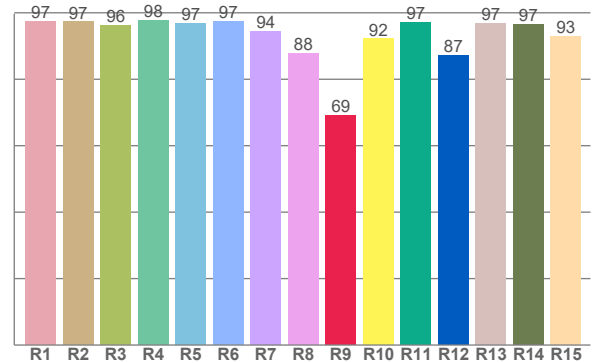
COLOR DETAILS



TM30: 93.1



CRI: 95.7 (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
97.4	97.3	96.3	97.8	96.9	97.5	94.4	87.8	69.1	92.2	97.0	87.2	96.9	96.5	93.0

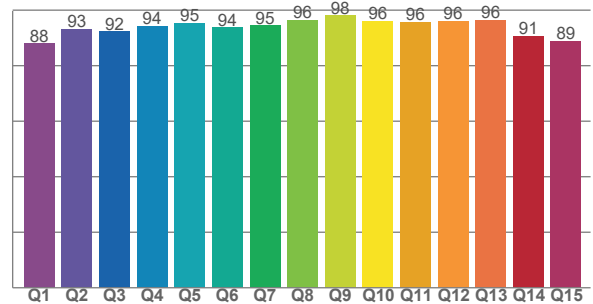
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92.4	95.4	93.1	95.9	95.2	94.4	95.7	96.8	97.2	95.0	93.4	88.3	86.4	86.8	90.0	86.5

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
88.1	93.2	92.3	94.3	95.4	93.7	94.5	96.5	98.0	96.2	95.8	96.1	96.5	90.6	89.0

CQS: 93.2



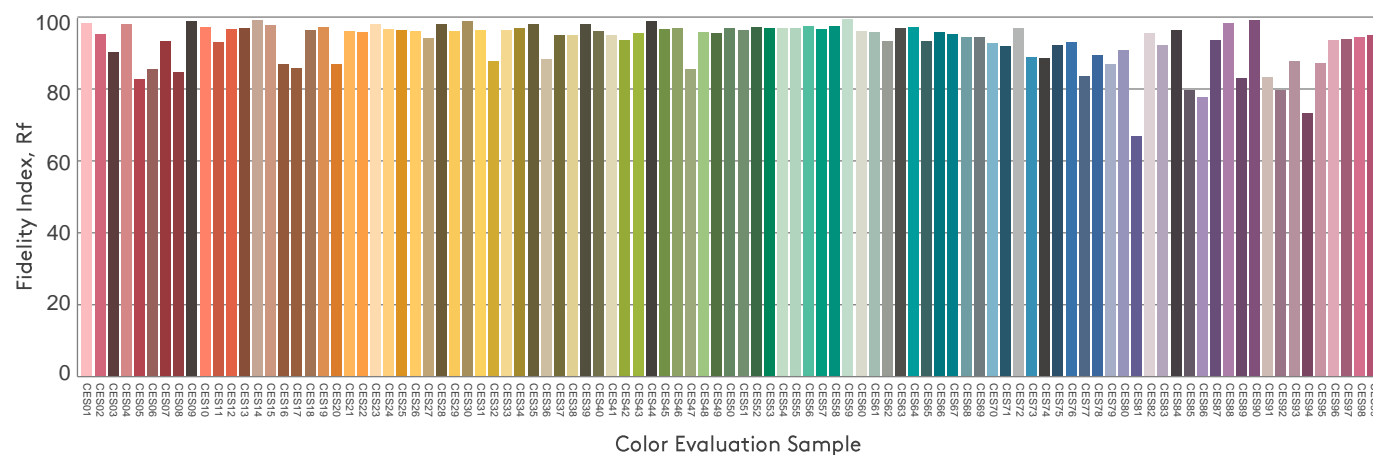
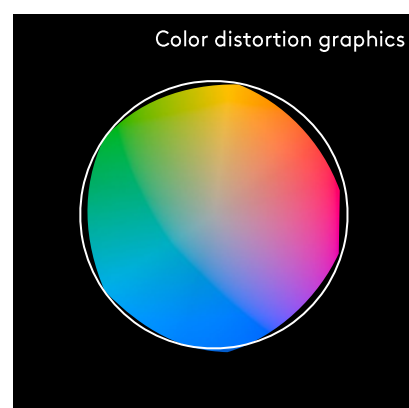
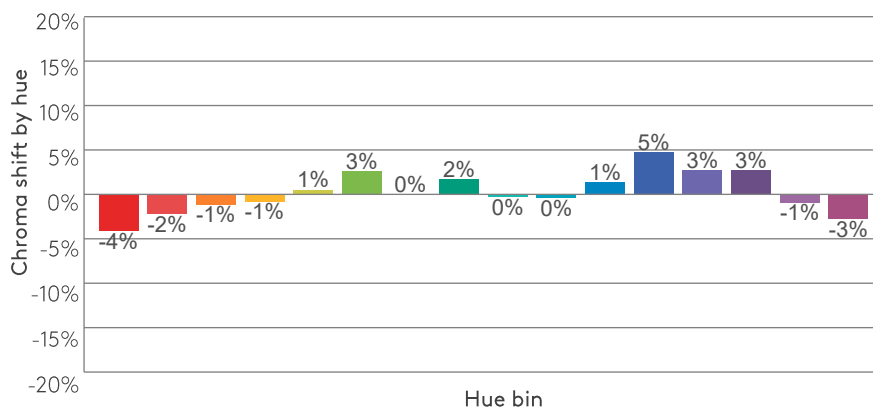
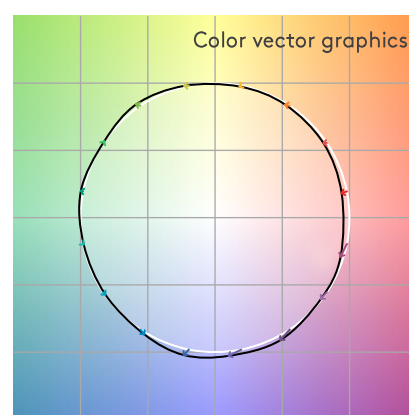
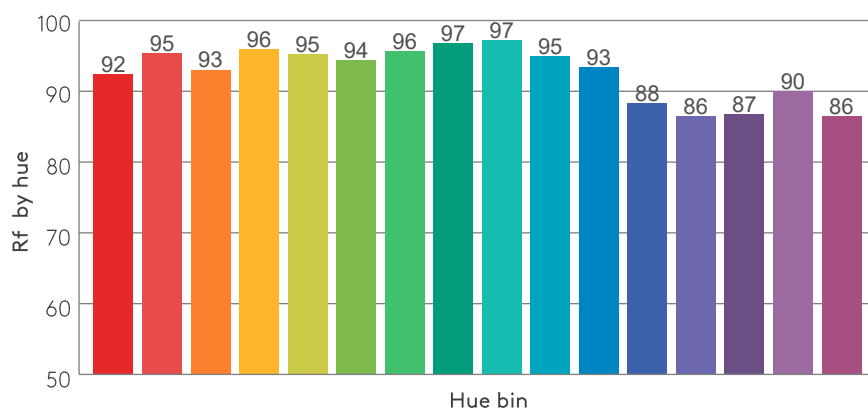
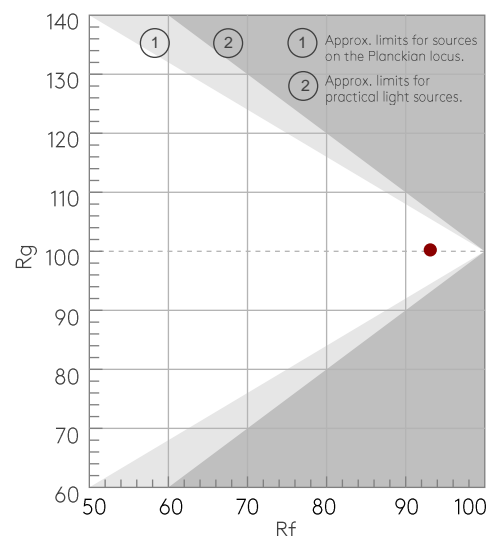
COLOR PARAMETERS

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
3002 K	95.7	69.1	93.1	100.2	93.2	0.439	0.408	0.250	0.349	0.0013

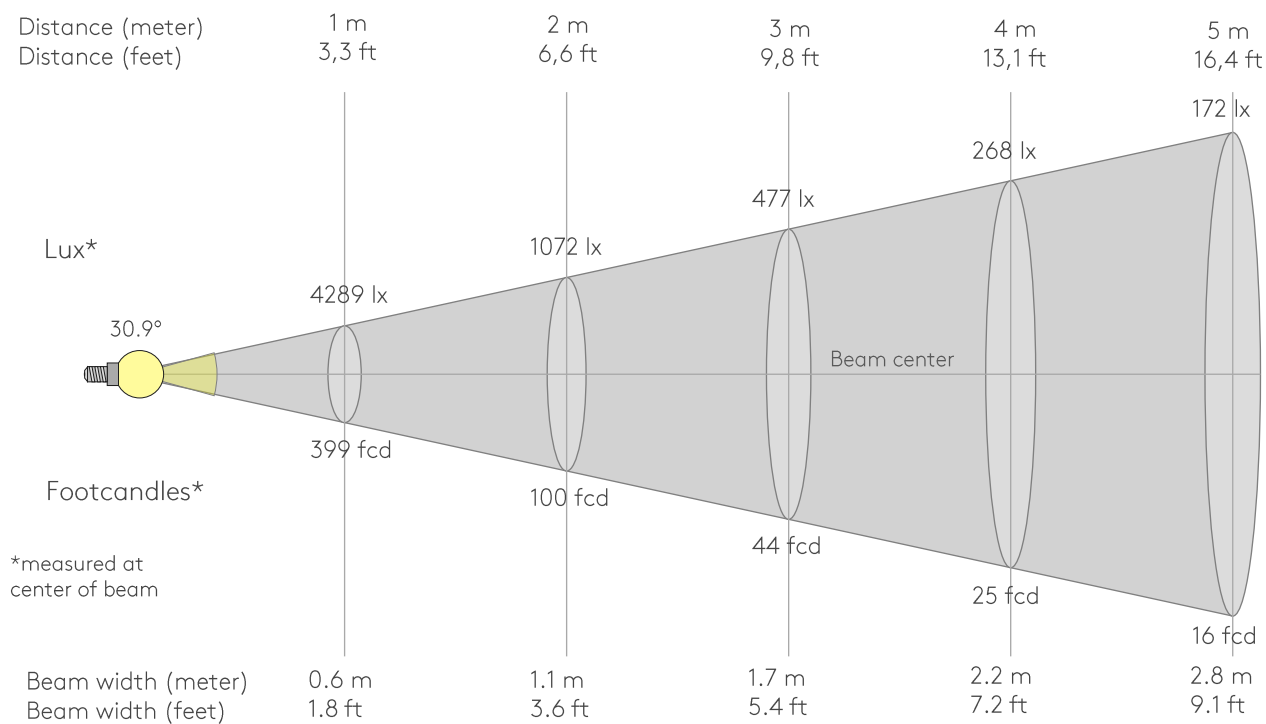
Rf 93.1
Fidelity index Rf

Rg 100.2
Gammut index Rg

Hue Bin	Rf	Graphic shifts (%)	
		Chroma	Hue
1	92	-4%	-1%
2	95	-2%	1%
3	93	-1%	3%
4	96	-1%	1%
5	95	1%	3%
6	94	3%	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	86	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
4289lx	1072lx	477lx	268lx	172lx	119lx	88lx	67lx	53lx	43lx	35lx	30lx	25lx	22lx	19lx	17lx	15lx	13lx	12lx	11lx
398.5fcd	99.6fcd	44.3fcd	24.9fcd	15.9fcd	11.1fcd	8.1fcd	6.2fcd	4.9fcd	4fcd	3.3fcd	2.8fcd	2.4fcd	2fcd	1.8fcd	1.6fcd	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°
4289	4254	4134	3934	3658	3314	2916	2475	2018	1577	1174	830	557	357	220	136	89	62	43	30
100%	99%	96%	92%	85%	77%	68%	58%	47%	37%	27%	19%	13%	8%	5%	3%	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°
4289	4254	4134	3934	3658	3314	2916	2475	2018	1577	1174	830	557	357	220	136	89	62	43	30
100%	99%	96%	92%	85%	77%	68%	58%	47%	37%	27%	19%	13%	8%	5%	3%	2%	1%	1%	1%

Intensities in 180° c-plane

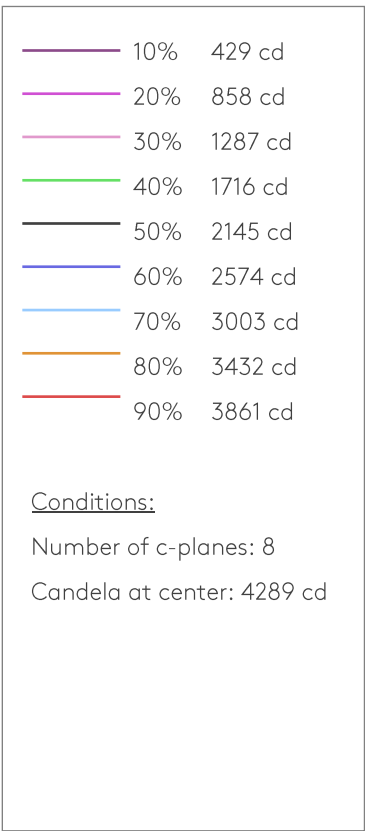
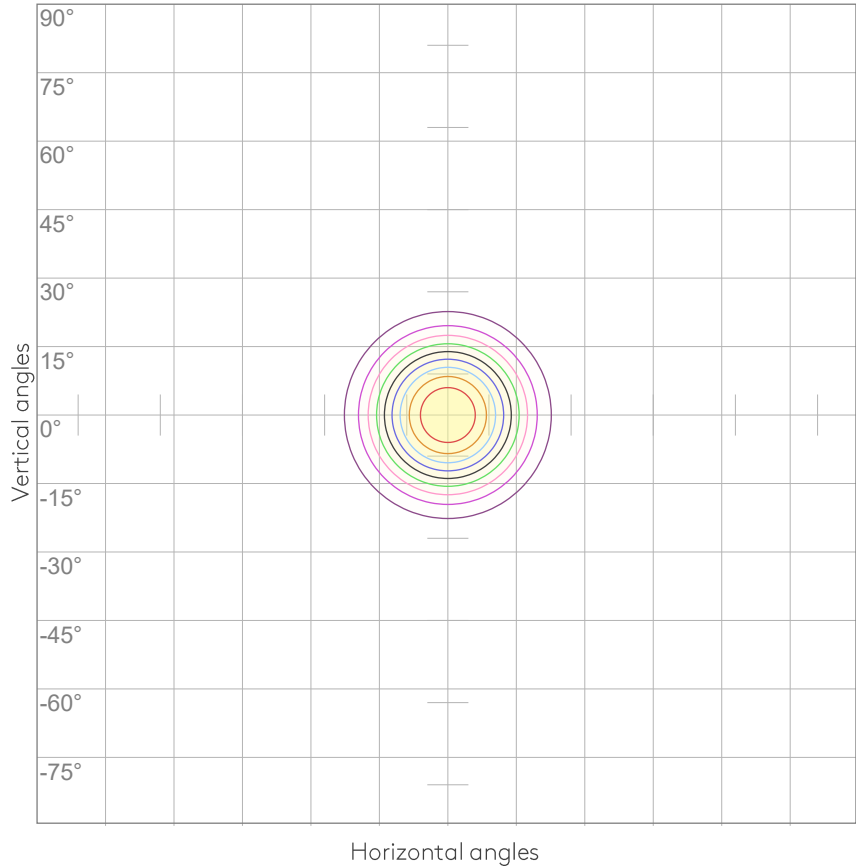
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
4289	4254	4134	3934	3658	3314	2916	2475	2018	1577	1174	830	557	357	220	136	89	62	43	30
100%	99%	96%	92%	85%	77%	68%	58%	47%	37%	27%	19%	13%	8%	5%	3%	2%	1%	1%	1%

Intensities in 270° c-plane

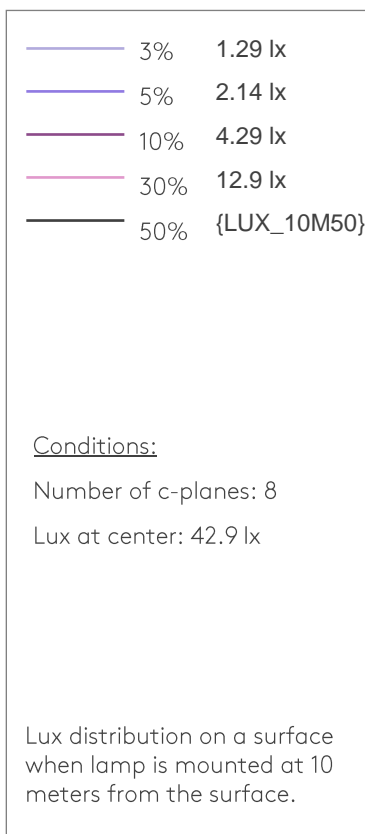
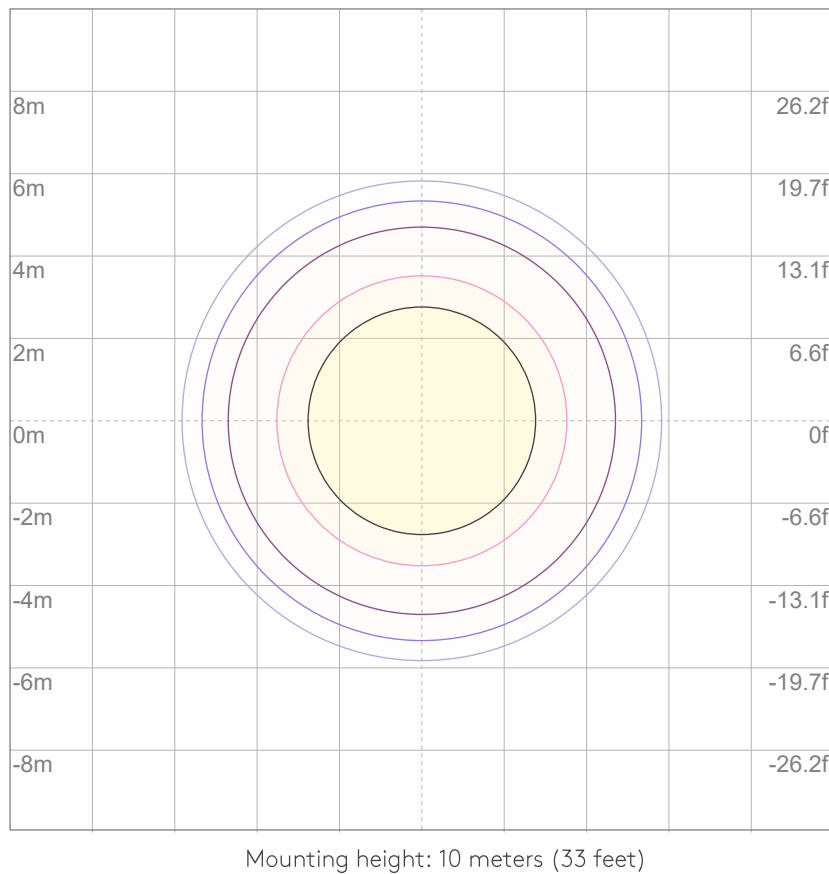
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
4289	4254	4134	3934	3658	3314	2916	2475	2018	1577	1174	830	557	357	220	136	89	62	43	30
100%	99%	96%	92%	85%	77%	68%	58%	47%	37%	27%	19%	13%	8%	5%	3%	2%	1%	1%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
30.9°	50.4°	62.2°	99.7%	99.1%

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	11.2	11.7	11.3	11.8	12.0	11.2	11.7	11.3	11.8	12.0
	3H	11.0	11.5	11.3	11.7	11.9	11.0	11.5	11.3	11.7	11.9
	4H	10.9	11.5	11.3	11.7	11.9	10.9	11.5	11.3	11.7	11.9
	6H	10.9	11.3	11.2	11.6	12.0	10.9	11.3	11.2	11.6	12.0
	8H	10.8	11.3	11.2	11.6	12.0	10.8	11.3	11.2	11.6	12.0
	12H	10.8	11.2	11.1	11.6	12.0	10.8	11.2	11.1	11.6	12.0
4H	2H	10.9	11.5	11.3	11.7	11.9	10.9	11.5	11.3	11.7	11.9
	3H	10.9	11.3	11.2	11.7	12.1	10.9	11.3	11.2	11.7	12.1
	4H	10.7	11.1	11.1	11.6	12.1	10.7	11.1	11.1	11.6	12.1
	6H	10.6	11.1	11.1	11.4	11.8	10.6	11.1	11.1	11.4	11.8
	8H	10.6	11.0	11.1	11.3	11.7	10.6	11.0	11.1	11.3	11.7
	12H	10.5	10.8	11.0	11.3	11.7	10.5	10.8	11.0	11.3	11.7
8H	4H	10.6	11.0	11.1	11.3	11.7	10.6	11.0	11.1	11.3	11.7
	6H	10.5	10.8	11.0	11.2	11.8	10.5	10.8	11.0	11.2	11.8
	8H	10.5	10.7	11.0	11.2	11.9	10.5	10.7	11.0	11.2	11.9
	12H	10.5	10.6	11.0	11.1	11.7	10.5	10.6	11.0	11.1	11.7
12H	4H	10.5	10.8	11.0	11.2	11.7	10.5	10.8	11.0	11.2	11.7
	6H	10.5	10.7	11.0	11.2	11.9	10.5	10.7	11.0	11.2	11.9
	8H	10.4	10.6	11.0	11.1	11.7	10.4	10.6	11.0	11.1	11.7
Variation of the observer position for the luminaire distance S											
S = 1.0H		5.2 / -6.0					5.2 / -6.0				
S = 1.5H		7.8 / -8.3					7.8 / -8.3				
S = 2.0H		9.7 / -11.3					9.7 / -11.3				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 1245 lm total luminous flux											

MINIMA PRO SQUARE ADJUSTABLE - MATT

LIGHT PLANNING

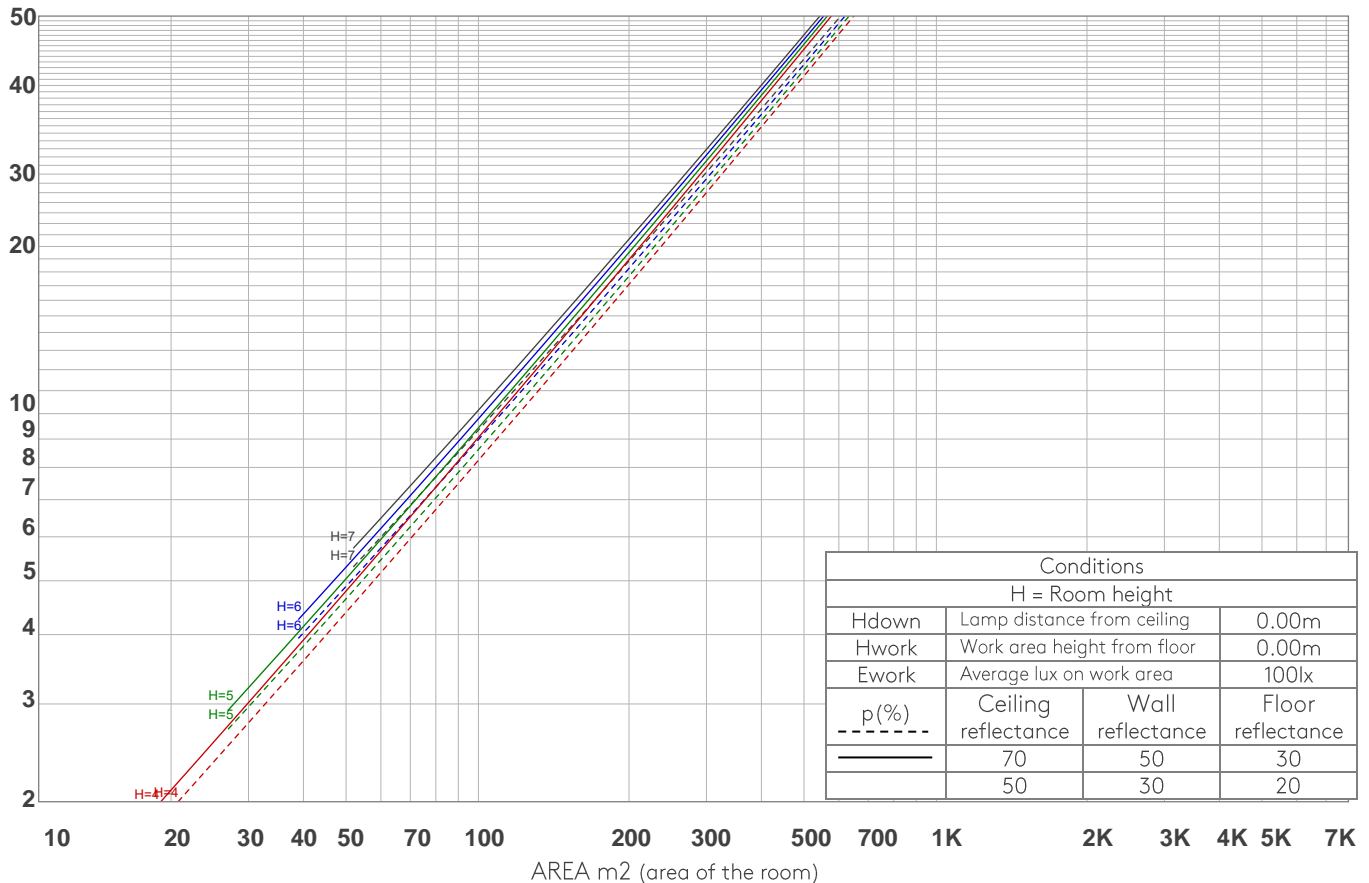
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COEFFICIENTS OF UTILIZATION

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	112	111	109	107	107	105	104	103	102	101	99	99	98	96
2	111	107	104	102	109	106	103	100	102	100	98	99	98	96	97	95	94	93
3	107	102	99	96	105	101	98	95	99	96	93	96	94	92	94	92	91	89
4	104	98	94	91	102	97	93	90	95	92	89	93	91	88	91	89	87	86
5	100	94	90	87	99	93	90	87	92	88	86	90	87	85	89	86	84	83
6	97	91	87	83	96	90	86	83	89	85	83	88	84	82	86	84	82	80
7	94	88	83	80	93	87	83	80	86	82	80	85	82	79	84	81	79	78
8	92	85	80	78	91	84	80	77	83	80	77	82	79	77	82	79	76	75
9	89	82	78	75	88	82	78	75	81	77	75	80	77	74	79	76	74	73
10	86	80	75	73	86	79	75	72	78	75	72	78	74	72	77	74	72	71

LAMPS (number of lamps)

LUMINAIRE BUDGETARY DIAGRAM



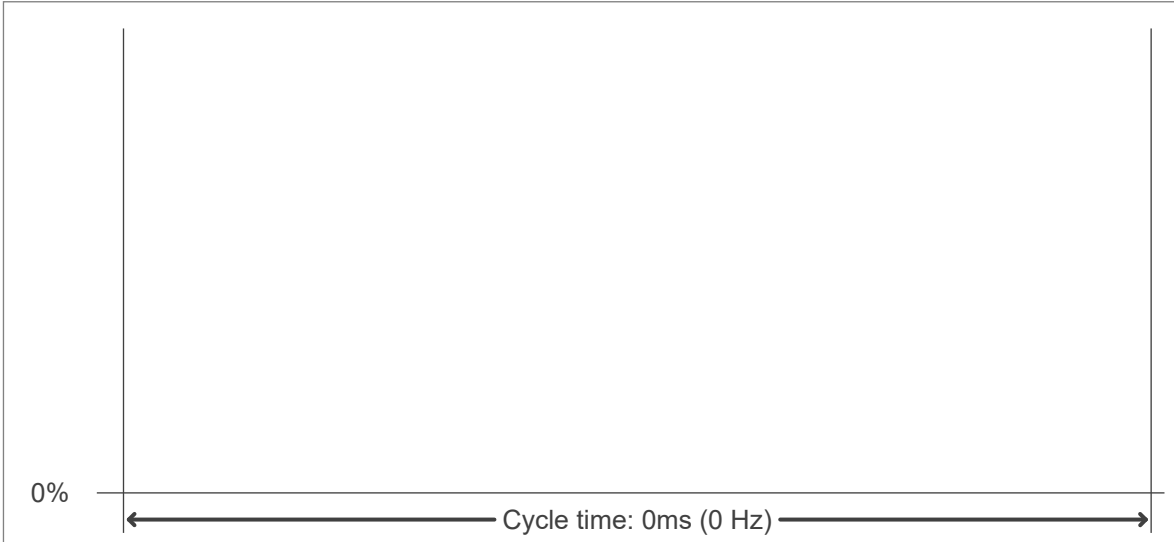
ZONAL LUMEN SUMMARY

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
362 lm	603 lm	226 lm	36.2 lm	9.88 lm	3.99 lm	1.39 lm	0.244 lm	0.108 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.091 lm	0.079 lm	0.081 lm	0.107 lm	0.200 lm	0.428 lm	0.588 lm	0.418 lm	0.093 lm

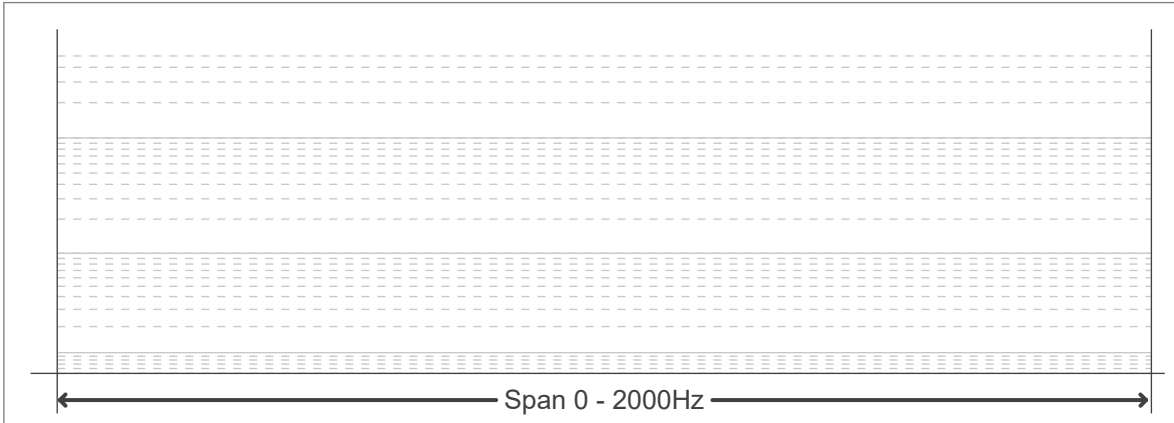
FLICKER CURVE (COMPLETE SAMPLED)



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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