

LM-79

Test Report

LM79_ULTIMA_4000K_CRI80_8DEG

General Discription

Item number	U-X-X-X-03-5
Date and time	17-2-2017 14:48:58
CCT (Kelvin)	3759 K
Beam angle	11,9°
Luminous flux	2023 lm
Efficiency	112 lm/watt
Weighted energy	18,1 kWh/1000h
Power factor	0,9
CRI (RA)	83,7
Fidelity index Rf	Rf 84,6
Gammut index Rg	Rg 96,9



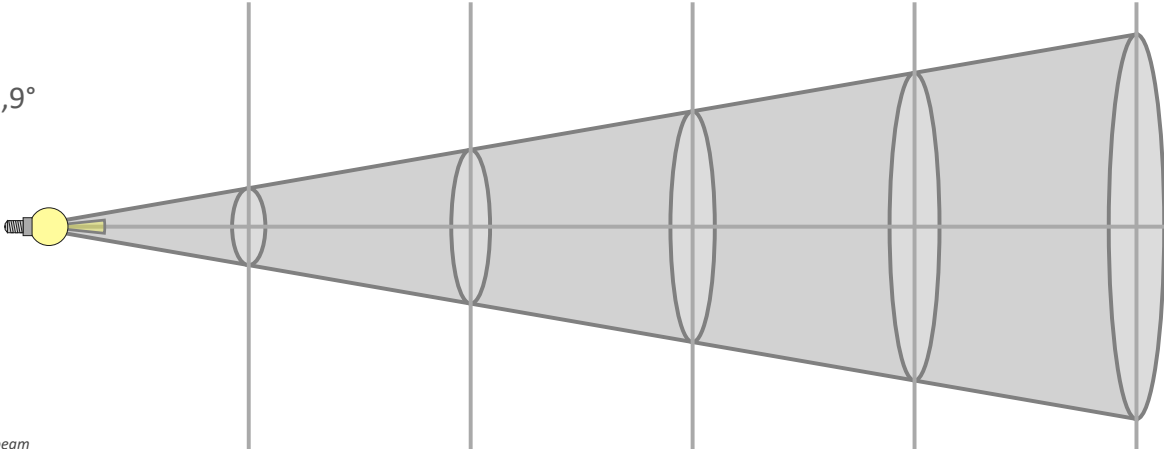
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Beam details					1m		2m		3m		4m		5m						
Lux*					35126 lx		8782 lx		3903 lx		2195 lx		1405 lx						
11,9° 																			
*measured at center of beam																			
Footcandles*					3263,3 fcd		815,8 fcd		362,6 fcd		204,0 fcd		130,5 fcd						
Beam width (meter)					0,2 m		0,4 m		0,6 m		0,8 m		1 m						
Beam width (Feet)					0,7 ft		1,4 ft		2 ft		2,7 ft		3,4 ft						
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
35126lx	8782lx	3903lx	2195lx	1405lx	976lx	717lx	549lx	434lx	351lx	290lx	244lx	208lx	179lx	156lx	137lx	122lx	108lx	97lx	88lx
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
3263,3fcd	815,8fcd	362,6fcd	204fcd	130,5fcd	90,6fcd	66,6fcd	51fcd	40,3fcd	32,6fcd	27fcd	22,7fcd	19,3fcd	16,6fcd	14,5fcd	12,7fcd	11,3fcd	10,1fcd	9fcd	8,2fcd
Intensities in 0° c-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
35,1K	33,8K	30,4K	27,0K	23,7K	20,2K	16,9K	13,8K	10,8K	7,7K	5,6K	4,4K	3,4K	2,5K	1,6K	1,0K	0,8K	0,7K	0,5K	0,4K
100%	96%	87%	77%	67%	57%	48%	39%	31%	22%	16%	12%	10%	7%	4%	3%	2%	2%	1%	1%
Intensities in 90° c-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
35,1K	35,1K	34,3K	31,1K	26,8K	22,3K	17,8K	13,7K	10,4K	8,5K	6,6K	4,8K	3,3K	2,4K	1,9K	1,4K	0,9K	0,6K	0,4K	0,4K
100%	100%	98%	89%	76%	63%	51%	39%	30%	24%	19%	14%	9%	7%	5%	4%	3%	2%	1%	1%
Intensities in 180° c-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
35,1K	33,8K	30,4K	27,0K	23,7K	20,2K	16,9K	13,8K	10,8K	7,7K	5,6K	4,4K	3,4K	2,5K	1,6K	1,0K	0,8K	0,7K	0,5K	0,4K
100%	96%	87%	77%	67%	57%	48%	39%	31%	22%	16%	12%	10%	7%	4%	3%	2%	2%	1%	1%
Intensities in 270° c-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
35,1K	35,1K	34,3K	31,1K	26,8K	22,3K	17,8K	13,7K	10,4K	8,5K	6,6K	4,8K	3,3K	2,4K	1,9K	1,4K	0,9K	0,6K	0,4K	0,4K
100%	100%	98%	89%	76%	63%	51%	39%	30%	24%	19%	14%	9%	7%	5%	4%	3%	2%	1%	1%
Beam angle 50%				Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone			
11,9°				23,8°				{C_ANGLE}°				98,1%				97,5%			



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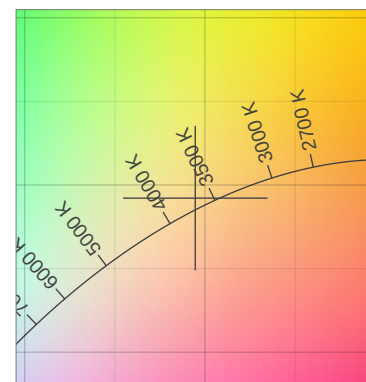
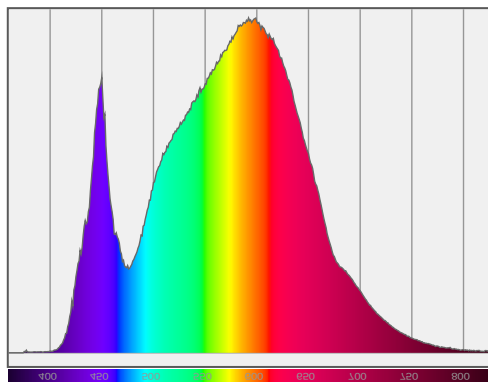
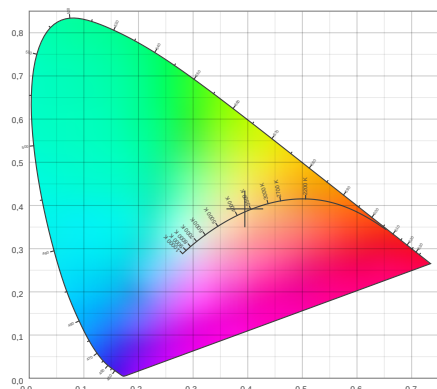
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Color details



CIE 1931

x: 0,395



Spectra

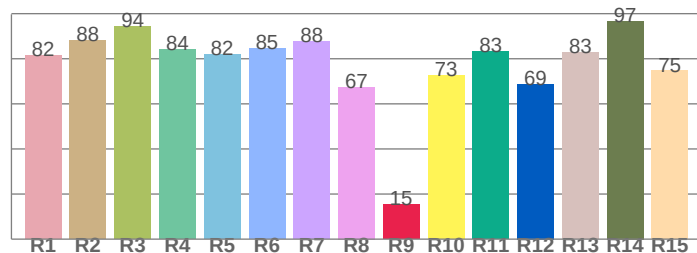
CIE 1931 ZOOM

3759 K

y: 0,392

Δuv : 0,0032

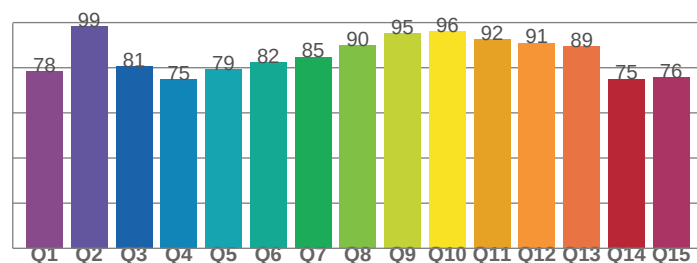
CRI: **83,7** (R1-R8)



CRI values, R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8
81,5	88,1	94,4	84,1	81,8	84,7	87,8	67,5
R9	R10	R11	R12	R13	R14	R15	
15,4	72,7	83,4	68,9	82,7	96,8	74,6	

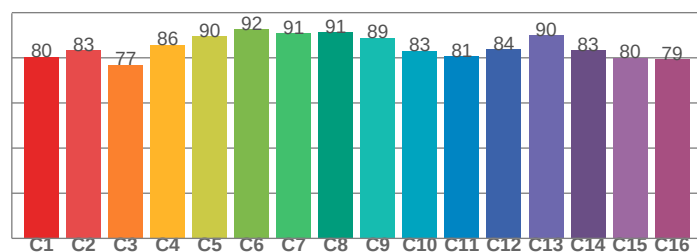
CQS: **83,6**



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
78,4	98,5	80,5	74,9	79,2	82,4	84,8	89,9
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
95,3	96,3	92,5	91,1	89,4	75,1	76,0	

TM30: **84,6**



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

C1	C2	C3	C4	C5	C6	C7	C8
80,5	83,2	76,7	85,8	89,5	92,5	90,7	91,3
C9	C10	C11	C12	C13	C14	C15	
88,8	83,0	80,7	83,7	89,8	83,2	80,0	

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
3759 K	83,7	15,4	84,6	96,9	83,6	0,395	0,392	0,228	0,340	0,0032



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TM30 details

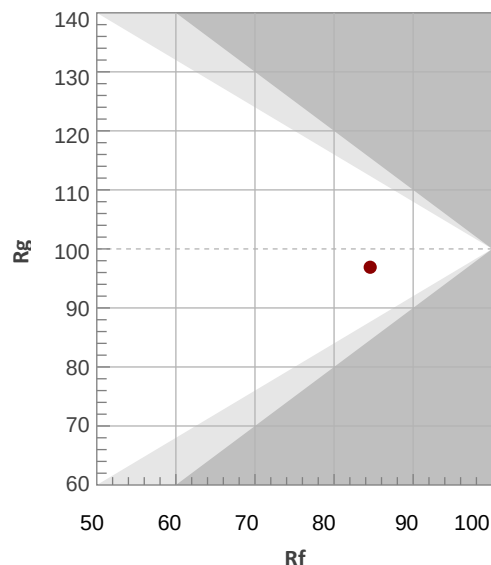
Rf 84,6

Fidelity index Rf

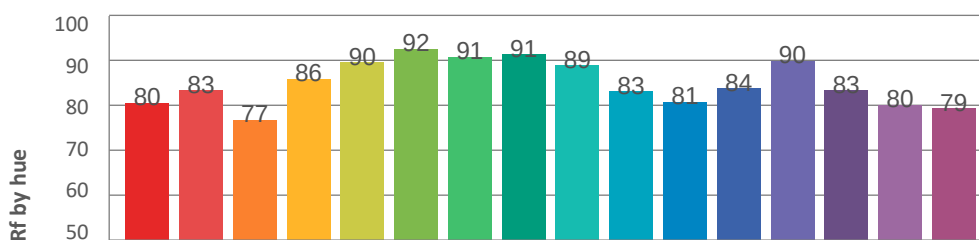
Rg 96,9

Gamut index Rg

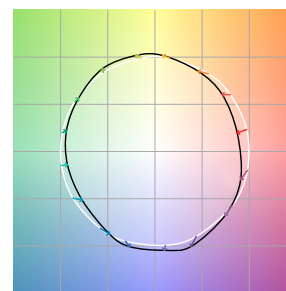
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	80	-11%	-2%
2	83	-7%	5%
3	77	-4%	11%
4	86	1%	8%
5	90	4%	5%
6	92	4%	-2%
7	91	-1%	-5%
8	91	-4%	-3%
9	89	-6%	0%
10	83	-7%	7%
11	81	0%	12%
12	84	5%	6%
13	90	5%	-2%
14	83	6%	-10%
15	80	-1%	-13%
16	79	-5%	-11%



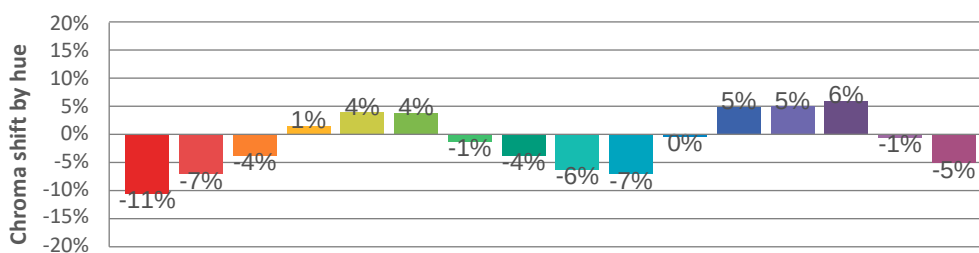
Hue binH



Color vector graphics



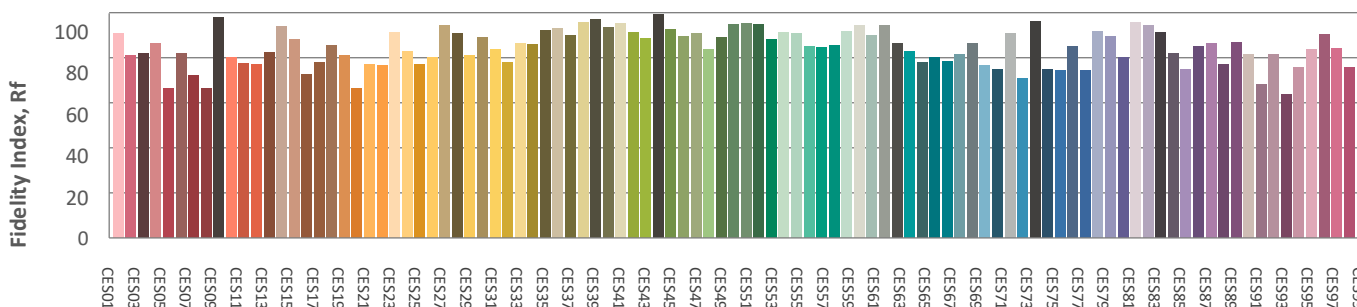
Hue bin



Color distortion graphics



Color Evaluation Sample



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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	0,9	1,5	1,1	1,7	1,9	1,0	1,7	1,3	1,9	2,1
	3H	1,3	1,9	1,6	2,2	2,4	1,4	1,9	1,7	2,2	2,5
	4H	1,7	2,2	2,0	2,5	2,8	1,5	2,1	1,8	2,3	2,6
	6H	3,0	3,5	3,4	3,8	4,1	2,4	2,9	2,8	3,2	3,5
	8H	4,4	4,8	4,7	5,2	5,5	4,0	4,5	4,3	4,8	5,1
	12H	6,2	6,7	6,6	7,0	7,3	6,9	7,4	7,3	7,7	8,1
4H	2H	1,0	1,6	1,3	1,8	2,1	1,2	1,7	1,5	2,0	2,3
	3H	1,6	2,1	2,0	2,4	2,8	1,6	2,1	2,0	2,4	2,7
	4H	2,2	2,5	2,5	2,9	3,3	1,9	2,3	2,3	2,7	3,0
	6H	4,1	4,4	4,5	4,8	5,2	3,4	3,7	3,8	4,1	4,5
	8H	5,8	6,0	6,2	6,5	6,9	5,4	5,7	5,8	6,1	6,5
	12H	8,0	8,2	8,4	8,6	9,1	8,8	9,0	9,2	9,4	9,9
8H	4H	2,5	2,8	2,9	3,2	3,6	2,3	2,6	2,7	3,0	3,4
	6H	5,0	5,2	5,4	5,6	6,1	4,4	4,6	4,8	5,0	5,5
	8H	7,1	7,2	7,5	7,7	8,2	6,8	7,0	7,3	7,5	8,0
	12H	9,6	9,8	10,1	10,3	10,8	10,5	10,6	11,0	11,1	11,6
12H	4H	2,7	3,0	3,2	3,4	3,8	2,6	2,8	3,0	3,2	3,7
	6H	5,5	5,6	5,9	6,1	6,6	5,0	5,1	5,5	5,6	6,1
	8H	7,7	7,9	8,2	8,4	8,9	7,6	7,7	8,1	8,2	8,7

Variation of the observer position for the luminaire distance S

S = 1,0H	+0,3 / -0,3	+0,3 / -0,4
S = 1,5H	+0,5 / -0,6	+0,5 / -0,8
S = 2,0H	+1,0 / -1,0	+0,9 / -1,2
Standard table	---	---
Correction summand	---	---

Corrected glare indices referring to 2023lm total luminous flux

