

LM-79

Test Report

LM79_ULTIMA_4000K_CRI80_12DEG

General Discription

Item number	U-X-X-X-03-1
Date and time	17-2-2017 14:51:39
CCT (Kelvin)	3773 K
Beam angle	15,2°
Luminous flux	1954 lm
Efficiency	108 lm/watt
Weighted energy	18,1 kWh/1000h
Power factor	0,9
CRI (RA)	83,8
Fidelity index Rf	Rf 84,7
Gammut index Rg	Rg 96,8



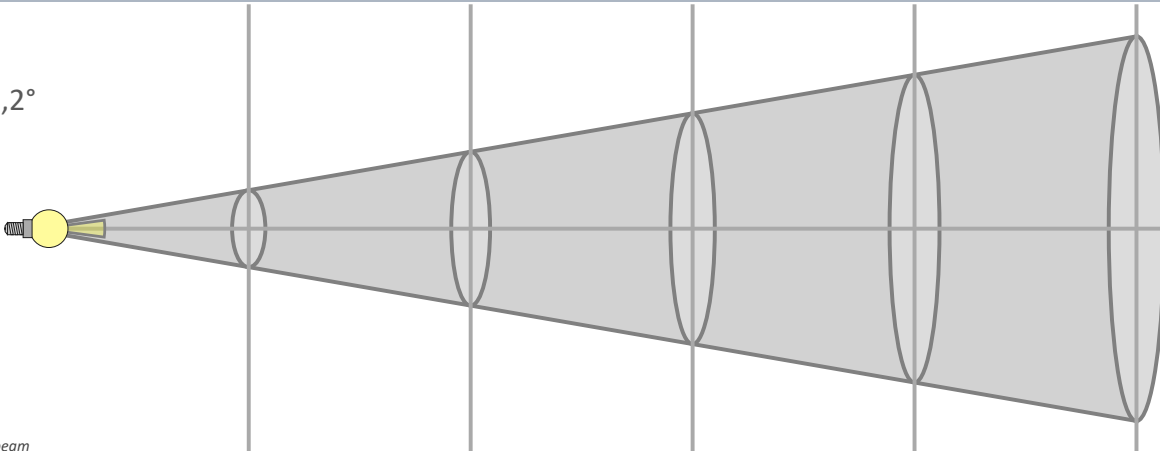
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Beam details		1m		2m		3m		4m		5m									
Lux*		21439 lx		5360 lx		2382 lx		1340 lx		858 lx									
15,2° 																			
*measured at center of beam																			
Footcandles*		1991,8 fcd		497,9 fcd		221,3 fcd		124,5 fcd		79,7 fcd									
Beam width (meter)		0,3 m		0,5 m		0,8 m		1,1 m		1,3 m									
Beam width (Feet)		0,9 ft		1,7 ft		2,6 ft		3,5 ft		4,4 ft									
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
21439lx	5360lx	2382lx	1340lx	858lx	596lx	438lx	335lx	265lx	214lx	177lx	149lx	127lx	109lx	95lx	84lx	74lx	66lx	59lx	54lx
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
1991,8fcd	497,9fcd	221,3fcd	124,5fcd	79,7fcd	55,3fcd	40,6fcd	31,1fcd	24,6fcd	19,9fcd	16,5fcd	13,8fcd	11,8fcd	10,2fcd	8,9fcd	7,8fcd	6,9fcd	6,1fcd	5,5fcd	5fcd
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°
21,4K	21,4K	20,5K	19,2K	17,8K	15,8K	13,8K	11,8K	9,9K	8,1K	6,6K	5,2K	4,2K	3,2K	2,4K	1,9K	1,4K	1,1K	0,9K	0,7K
100%	100%	96%	90%	83%	74%	64%	55%	46%	38%	31%	24%	19%	15%	11%	9%	7%	5%	4%	3%
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°
21,4K	21,4K	20,7K	19,5K	17,9K	15,8K	13,8K	11,8K	9,9K	8,2K	6,7K	5,2K	4,1K	3,1K	2,4K	1,9K	1,4K	1,1K	0,8K	0,6K
100%	100%	97%	91%	83%	74%	64%	55%	46%	38%	31%	24%	19%	14%	11%	9%	7%	5%	4%	3%
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°
21,4K	21,4K	20,5K	19,2K	17,8K	15,8K	13,8K	11,8K	9,9K	8,1K	6,6K	5,2K	4,2K	3,2K	2,4K	1,9K	1,4K	1,1K	0,9K	0,7K
100%	100%	96%	90%	83%	74%	64%	55%	46%	38%	31%	24%	19%	15%	11%	9%	7%	5%	4%	3%
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°
21,4K	21,4K	20,7K	19,5K	17,9K	15,8K	13,8K	11,8K	9,9K	8,2K	6,7K	5,2K	4,1K	3,1K	2,4K	1,9K	1,4K	1,1K	0,8K	0,6K
100%	100%	97%	91%	83%	74%	64%	55%	46%	38%	31%	24%	19%	14%	11%	9%	7%	5%	4%	3%
Beam angle 50%				Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone			
15,2°				29,1°				{C_ANG}°				98,1%				97,5%			



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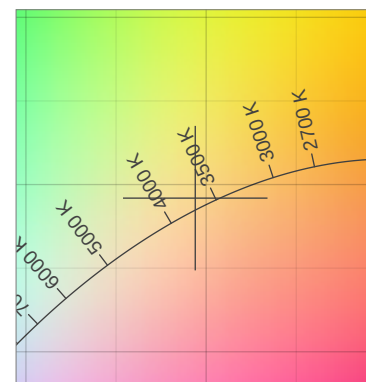
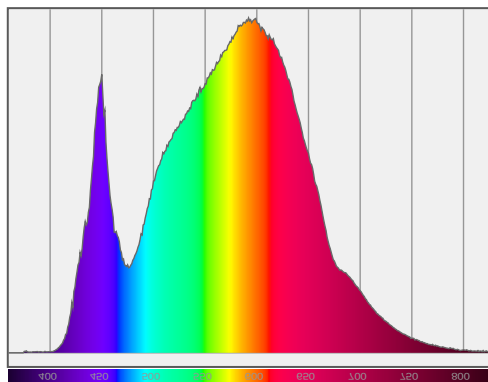
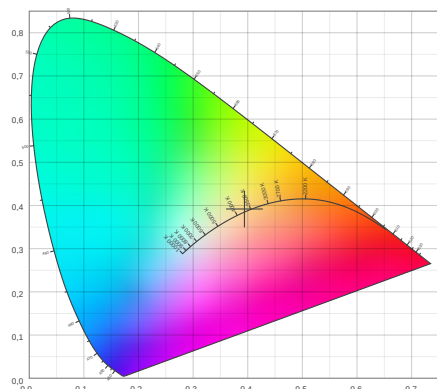
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Color details



CIE 1931

x: 0,394

3773 K

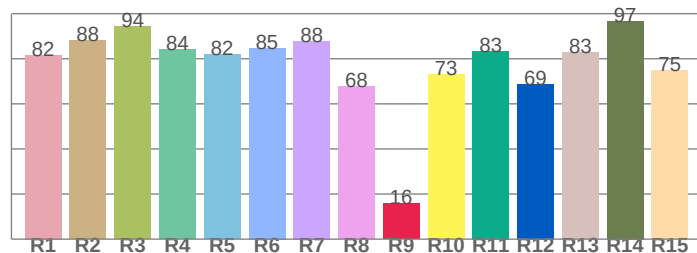
y: 0,392

Spectra

CIE 1931 ZOOM

Δuv : 0,0032

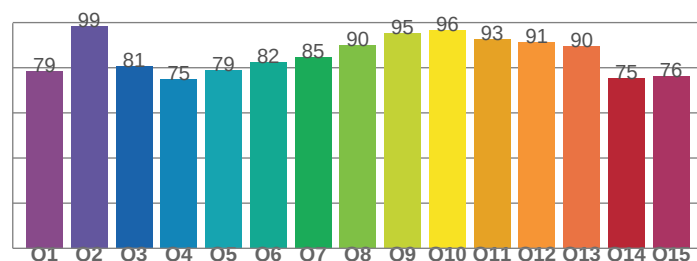
CRI: **83,8** (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
81,6	88,2	94,4	84,2	81,9	84,8	87,9	67,6
R9	R10	R11	R12	R13	R14	R15	
15,7	72,9	83,5	68,8	82,9	96,8	74,7	

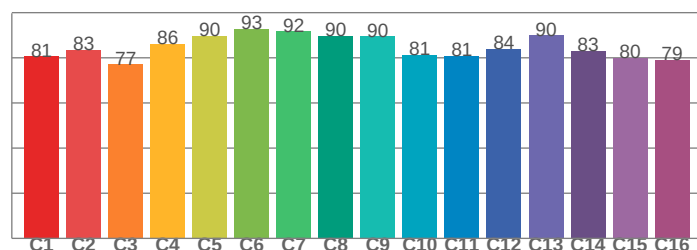
CQS: **83,6**



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
78,6	98,5	80,5	74,8	79,0	82,3	84,8	89,8
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
95,1	96,4	92,6	91,2	89,5	75,3	76,1	

TM30: **84,7**



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

C1	C2	C3	C4	C5	C6	C7	C8
80,5	83,3	77,0	86,1	89,7	92,7	91,7	89,7
C9	C10	C11	C12	C13	C14	C15	
89,5	81,2	80,7	83,8	89,9	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
3773 K	83,8	15,7	84,7	96,8	83,6	0,394	0,392	0,228	0,340	0,0032



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TM30 details

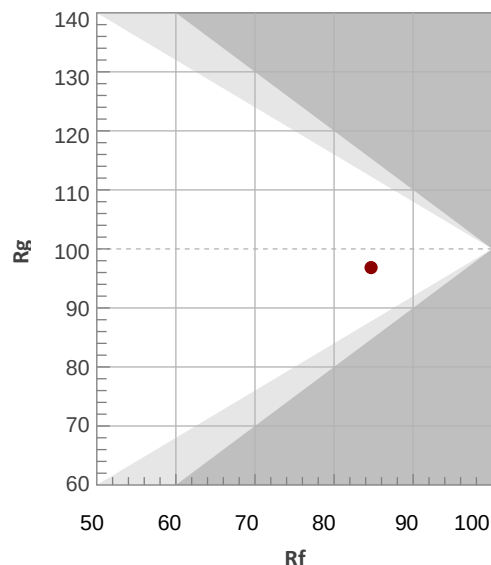
Rf 84,7

Fidelity index Rf

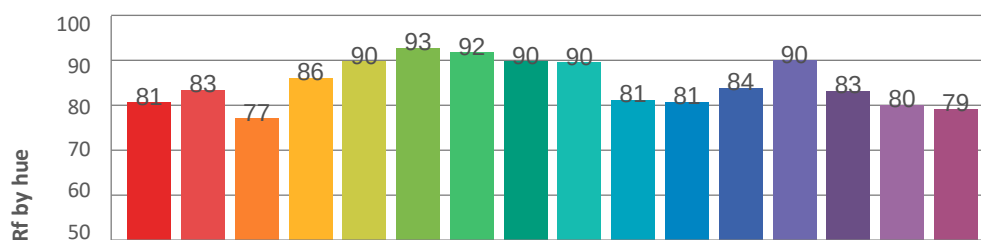
Rg 96,8

Gamut index Rg

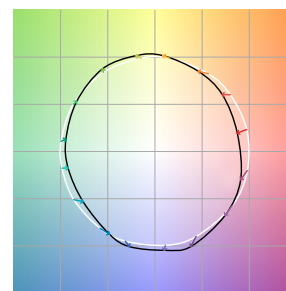
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	81	-11%	-2%
2	83	-7%	5%
3	77	-4%	10%
4	86	1%	8%
5	90	4%	5%
6	93	4%	-2%
7	92	-1%	-5%
8	90	-5%	-3%
9	90	-6%	1%
10	81	-7%	7%
11	81	0%	12%
12	84	5%	6%
13	90	5%	-2%
14	83	6%	-11%
15	80	-1%	-13%
16	79	-5%	-11%



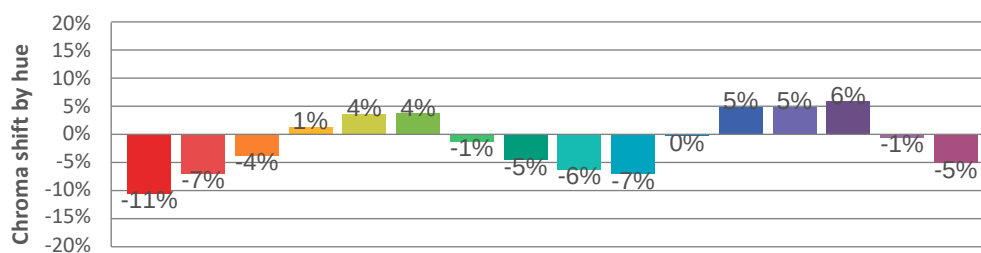
Hue binH



Color vector graphics



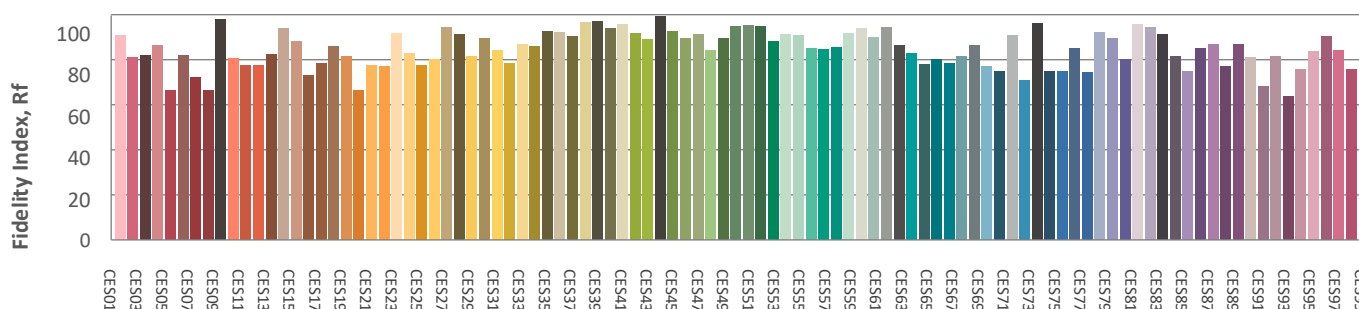
Hue bin



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	1,3	2,0	1,6	2,2	2,4	1,2	1,9	1,5	2,1	2,3
	3H	1,5	2,1	1,8	2,4	2,6	1,6	2,2	1,9	2,5	2,7
	4H	1,7	2,2	2,0	2,5	2,8	1,8	2,4	2,2	2,7	3,0
	6H	2,4	2,9	2,7	3,2	3,5	2,5	3,0	2,9	3,3	3,6
	8H	3,2	3,7	3,6	4,0	4,3	3,5	4,0	3,9	4,3	4,6
	12H	4,9	5,3	5,3	5,7	6,0	5,2	5,7	5,6	6,0	6,3
4H	2H	1,4	2,0	1,7	2,3	2,5	1,3	1,9	1,7	2,2	2,4
	3H	1,7	2,2	2,1	2,5	2,9	1,9	2,3	2,2	2,7	3,0
	4H	2,0	2,4	2,4	2,8	3,1	2,2	2,6	2,6	2,9	3,3
	6H	3,1	3,4	3,5	3,8	4,2	3,3	3,6	3,7	4,0	4,4
	8H	4,3	4,6	4,7	5,0	5,4	4,6	4,9	5,1	5,3	5,7
	12H	6,4	6,7	6,9	7,1	7,5	6,7	7,0	7,2	7,4	7,9
8H	4H	2,2	2,5	2,7	2,9	3,3	2,4	2,7	2,8	3,1	3,5
	6H	3,8	4,0	4,2	4,4	4,9	3,9	4,2	4,4	4,6	5,1
	8H	5,4	5,6	5,9	6,0	6,5	5,7	5,9	6,2	6,3	6,8
	12H	7,9	8,1	8,4	8,6	9,1	8,2	8,4	8,7	8,9	9,4
12H	4H	2,4	2,6	2,8	3,0	3,5	2,5	2,8	3,0	3,2	3,6
	6H	4,2	4,3	4,6	4,8	5,3	4,3	4,5	4,8	5,0	5,4
	8H	6,0	6,1	6,5	6,6	7,1	6,2	6,4	6,7	6,9	7,4
Variation of the observer position for the luminaire distance S											
S = 1,0H		+0,5 / -0,4					+0,4 / -0,4				
S = 1,5H		+1,0 / -0,8					+0,9 / -0,8				
S = 2,0H		+2,0 / -1,3					+1,8 / -1,2				
Standard table		---					---				
Correction summand		---					---				
Corrected glare indices referring to 1954lm total luminous flux											

