

LM-79

Test Report

LM79_ULTIMA_4000K_CRI80_30DEG

General Discription

Item number	U-X-X-X-03-3
Date and time	17-2-2017 14:57:11
CCT (Kelvin)	3795 K
Beam angle	28,7°
Luminous flux	1896 lm
Efficiency	105 lm/watt
Weighted energy	18,0 kWh/1000h
Power factor	0,9
CRI (RA)	83,7
Fidelity index Rf	Rf 84,6
Gammut index Rg	Rg 96,6



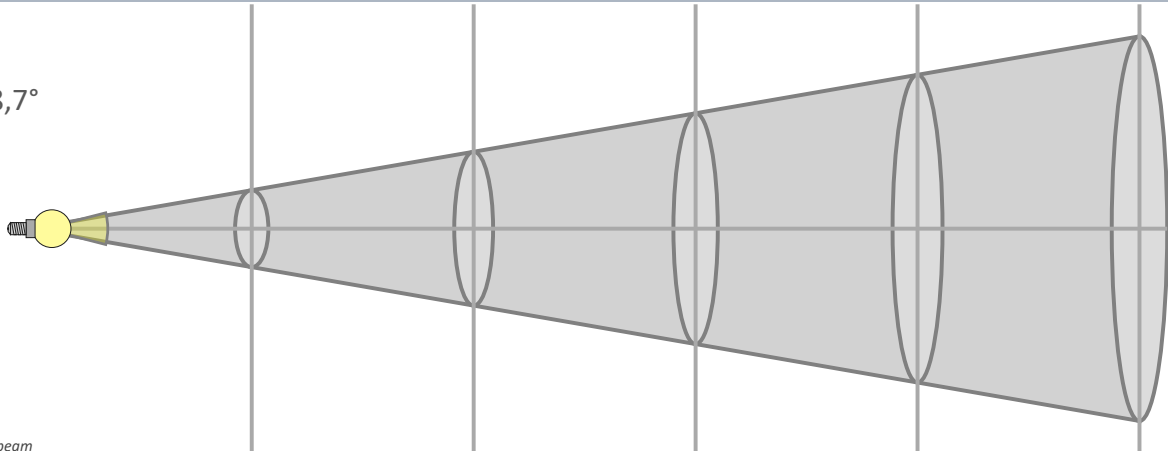
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Beam details					1m		2m		3m		4m		5m											
Lux*					6209 lx		1552 lx		690 lx		388 lx		248 lx											
28,7° 																								
*measured at center of beam																								
Footcandles*					576,9 fcd		144,2 fcd		64,1 fcd		36,1 fcd		23,1 fcd											
Beam width (meter)					0,5 m		1 m		1,5 m		2 m		2,6 m											
Beam width (Feet)					1,7 ft		3,4 ft		5 ft		6,7 ft		8,4 ft											
Beam intensities																								
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m					
6209lx	1552lx	690lx	388lx	248lx	172lx	127lx	97lx	77lx	62lx	51lx	43lx	37lx	32lx	28lx	24lx	21lx	19lx	17lx	16lx					
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					
576,9fcd	144,2fcd	64,1fcd	36,1fcd	23,1fcd	16fcd	11,8fcd	9fcd	7,1fcd	5,8fcd	4,8fcd	4fcd	3,4fcd	2,9fcd	2,6fcd	2,3fcd	2fcd	1,8fcd	1,6fcd	1,4fcd					
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°					
6209	6069	5843	5428	4879	4310	3730	3154	2612	2100	1637	1268	920	680	495	343	255	178	130	95					
100%	98%	94%	87%	79%	69%	60%	51%	42%	34%	26%	20%	15%	11%	8%	6%	4%	3%	2%	2%					
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°					
6209	6061	5834	5431	4896	4349	3790	3233	2717	2227	1763	1375	1003	746	541	373	279	192	140	101					
100%	98%	94%	87%	79%	70%	61%	52%	44%	36%	28%	22%	16%	12%	9%	6%	4%	3%	2%	2%					
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°					
6209	6069	5843	5428	4879	4310	3730	3154	2612	2100	1637	1268	920	680	495	343	255	178	130	95					
100%	98%	94%	87%	79%	69%	60%	51%	42%	34%	26%	20%	15%	11%	8%	6%	4%	3%	2%	2%					
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°					
6209	6061	5834	5431	4896	4349	3790	3233	2717	2227	1763	1375	1003	746	541	373	279	192	140	101					
100%	98%	94%	87%	79%	70%	61%	52%	44%	36%	28%	22%	16%	12%	9%	6%	4%	3%	2%	2%					
Beam angle 50%					Field angle 10%					Cutoff angle 2,5%					Intensity ratio in 120° cone					Intensity ratio in 90° cone				
28,7°					53,9°					{C_ANG}°					97,0%					95,8%				



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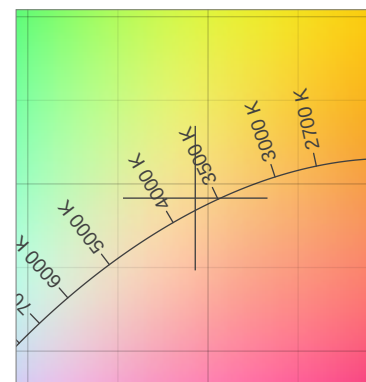
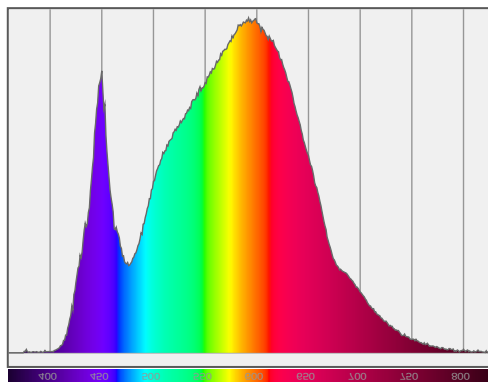
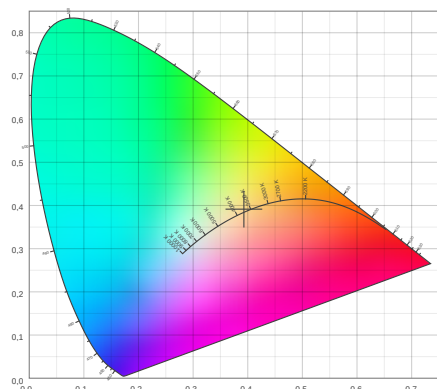
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Color details



CIE 1931

x: 0,393

3795 K

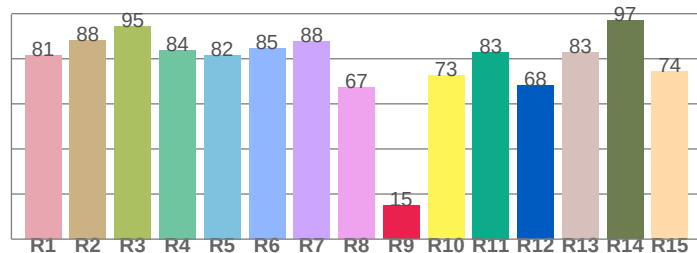
y: 0,392

Spectra

CIE 1931 ZOOM

Δuv : 0,0033

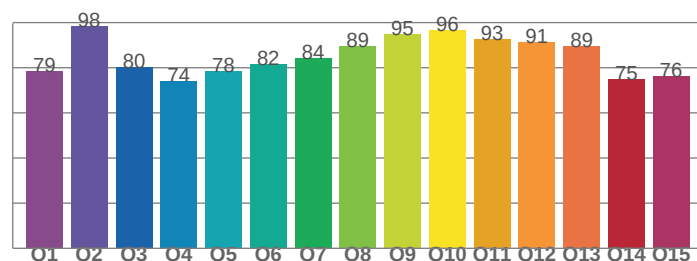
CRI: **83,7** (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
81,4	88,2	94,5	83,9	81,6	84,6	87,8	67,3
R9	R10	R11	R12	R13	R14	R15	
14,8	72,7	83,0	68,2	82,7	96,9	74,5	

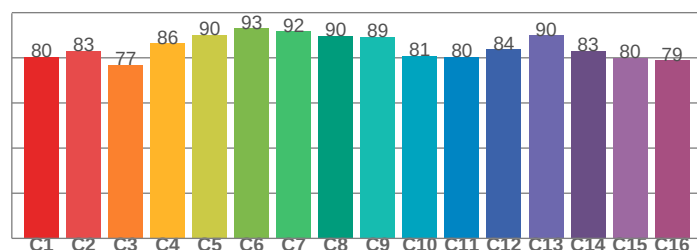
CQS: **83,3**



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
78,6	98,5	80,2	74,1	78,3	81,6	84,2	89,4
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
94,8	96,4	92,6	91,2	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
80,3	83,2	77,0	86,3	90,0	93,0	91,7	89,7
C9	C10	C11	C12	C13	C14	C15	
89,2	80,7	80,3	83,7	89,9	82,9	79,8	

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
3795 K	83,7	14,8	84,6	96,6	83,3	0,393	0,392	0,227	0,340	0,0033



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TM30 details

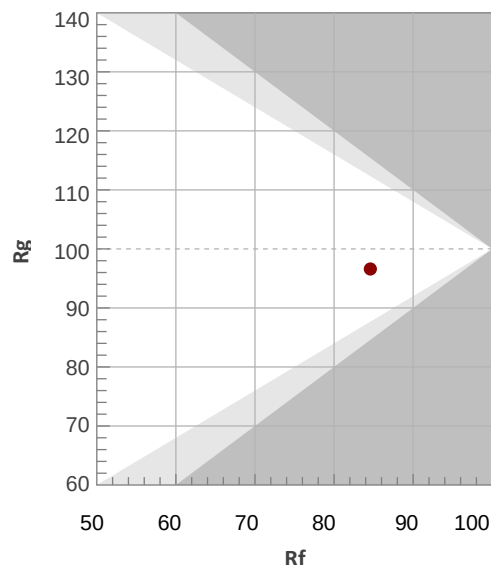
Rf 84,6

Fidelity index Rf

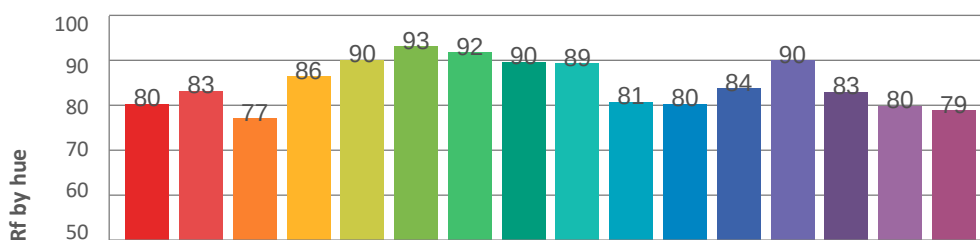
Rg 96,6

Gamut index Rg

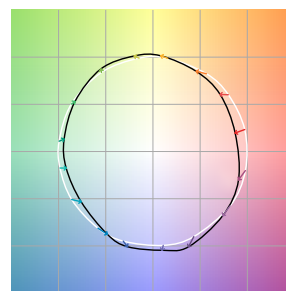
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	80	-11%	-2%
2	83	-7%	5%
3	77	-4%	10%
4	86	1%	8%
5	90	3%	5%
6	93	3%	-2%
7	92	-2%	-4%
8	90	-5%	-3%
9	89	-6%	1%
10	81	-7%	8%
11	80	0%	12%
12	84	5%	6%
13	90	5%	-2%
14	83	6%	-11%
15	80	-1%	-13%
16	79	-5%	-11%



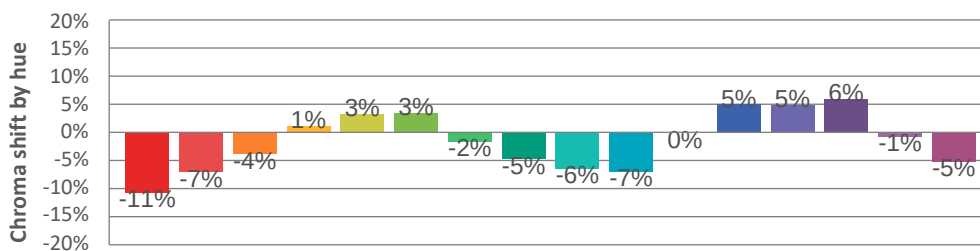
Hue binH



Color vector graphics



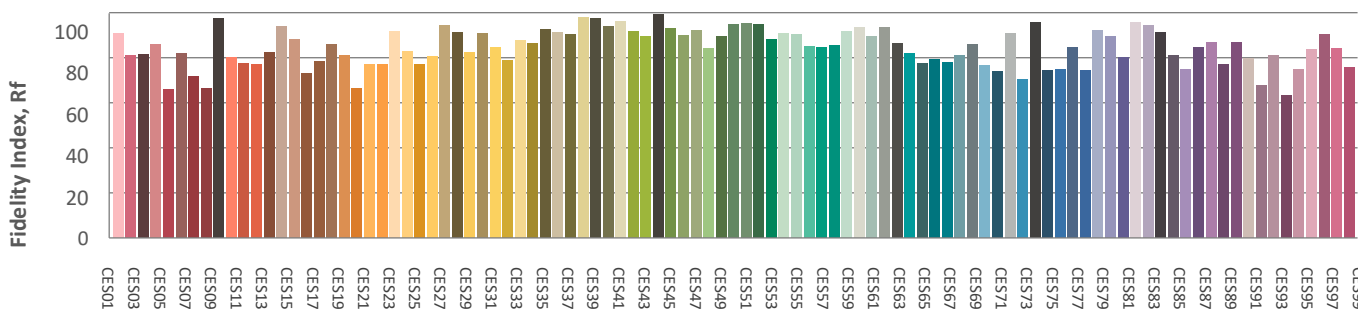
Hue bin



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	8,7	9,3	9,0	9,6	9,8	9,0	9,6	9,2	9,9	10,1
	3H	8,7	9,3	9,1	9,6	9,9	9,0	9,6	9,3	9,9	10,1
	4H	8,8	9,4	9,1	9,6	9,9	9,1	9,6	9,4	9,9	10,2
	6H	8,9	9,4	9,2	9,7	10,0	9,2	9,7	9,6	10,0	10,4
	8H	9,1	9,6	9,4	9,9	10,2	9,4	9,9	9,8	10,2	10,6
	12H	9,4	9,9	9,8	10,2	10,6	9,9	10,3	10,2	10,7	11,0
4H	2H	8,6	9,2	8,9	9,4	9,7	8,9	9,4	9,2	9,7	10,0
	3H	8,7	9,2	9,1	9,5	9,9	9,0	9,4	9,4	9,8	10,1
	4H	8,8	9,2	9,2	9,6	10,0	9,1	9,5	9,5	9,9	10,3
	6H	9,1	9,4	9,5	9,8	10,2	9,4	9,7	9,8	10,1	10,5
	8H	9,4	9,7	9,8	10,1	10,5	9,7	10,0	10,2	10,5	10,9
	12H	10,0	10,2	10,4	10,7	11,1	10,5	10,7	10,9	11,2	11,6
8H	4H	8,8	9,1	9,3	9,6	10,0	9,1	9,4	9,5	9,8	10,3
	6H	9,2	9,4	9,7	9,9	10,4	9,5	9,8	10,0	10,2	10,7
	8H	9,7	9,9	10,2	10,4	10,9	10,1	10,3	10,6	10,8	11,3
	12H	10,7	10,8	11,2	11,3	11,8	11,2	11,3	11,7	11,8	12,4
12H	4H	8,9	9,1	9,3	9,5	10,0	9,1	9,4	9,6	9,8	10,3
	6H	9,3	9,5	9,8	10,0	10,5	9,6	9,8	10,1	10,3	10,8
	8H	9,9	10,1	10,5	10,6	11,1	10,3	10,4	10,8	10,9	11,5
Variation of the observer position for the luminaire distance S											
S = 1,0H		+3,0 / -1,7					+3,0 / -1,6				
S = 1,5H		+5,3 / -2,2					+5,3 / -2,1				
S = 2,0H		+7,2 / -2,8					+7,3 / -2,7				
Standard table		---					---				
Correction summand		---					---				
Corrected glare indices referring to 1896lm total luminous flux											

