

LM-79

Test Report

LM79_ULTIMA_3000K_CRI80_12DEG

General Discription

Item number	U-X-X-X-02-1
Date and time	17-2-2017 14:21:00
CCT (Kelvin)	2925 K
Beam angle	15°
Luminous flux	1810 lm
Efficiency	100 lm/watt
Weighted energy	18,0 kWh/1000h
Power factor	0,9
CRI (RA)	83,9
Fidelity index Rf	Rf 84,4
Gammut index Rg	Rg 97,3



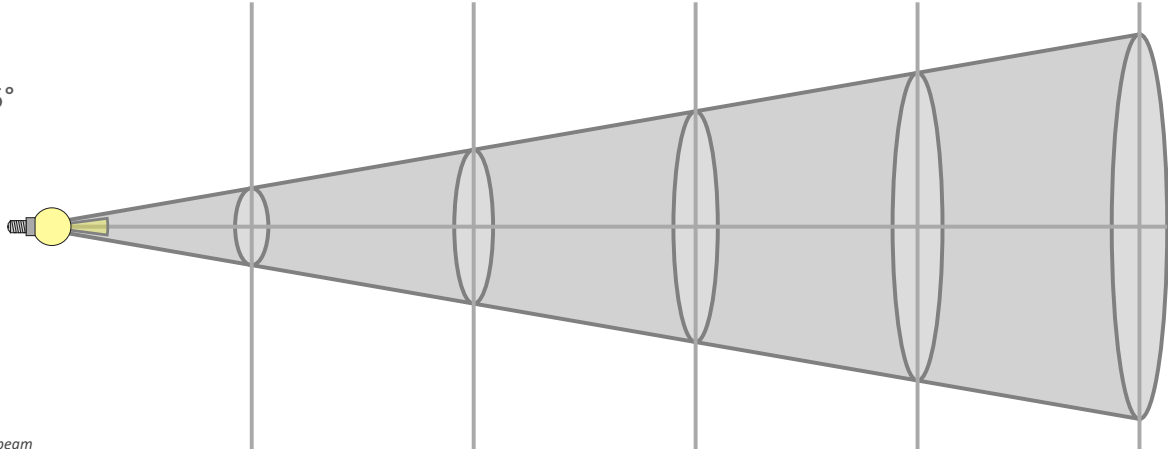
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Beam details					1m		2m		3m		4m		5m								
Lux*					20496 lx		5124 lx		2277 lx		1281 lx		820 lx								
15° 																					
*measured at center of beam																					
Footcandles*					1904,1 fcd		476,0 fcd		211,6 fcd		119,0 fcd		76,2 fcd								
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		4,3 ft								
Beam intensities																					
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m		
20496lx	5124lx	2277lx	1281lx	820lx	569lx	418lx	320lx	253lx	205lx	169lx	142lx	121lx	105lx	91lx	80lx	71lx	63lx	57lx	51lx		
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		
1904,1fcd	476fcd	211,6fcd	119fcd	76,2fcd	52,9fcd	38,9fcd	29,8fcd	23,5fcd	19fcd	15,7fcd	13,2fcd	11,3fcd	9,7fcd	8,5fcd	7,4fcd	6,6fcd	5,9fcd	5,3fcd	4,8fcd		
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°		
20,5K	19,5K	18,4K	17,2K	16,0K	14,7K	12,8K	11,0K	9,2K	7,3K	5,7K	4,8K	4,0K	3,2K	2,3K	1,6K	1,4K	1,1K	0,9K	0,6K		
100%	95%	90%	84%	78%	72%	63%	54%	45%	36%	28%	24%	20%	15%	11%	8%	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°		
20,5K	20,5K	19,6K	18,4K	17,0K	15,1K	13,2K	11,3K	9,5K	7,8K	6,4K	4,9K	4,0K	3,1K	2,4K	1,9K	1,4K	1,1K	0,8K	0,6K		
100%	100%	96%	90%	83%	74%	64%	55%	46%	38%	31%	24%	19%	15%	12%	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°		
20,5K	19,5K	18,4K	17,2K	16,0K	14,7K	12,8K	11,0K	9,2K	7,3K	5,7K	4,8K	4,0K	3,2K	2,3K	1,6K	1,4K	1,1K	0,9K	0,6K		
100%	95%	90%	84%	78%	72%	63%	54%	45%	36%	28%	24%	20%	15%	11%	8%	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°		
20,5K	20,5K	19,6K	18,4K	17,0K	15,1K	13,2K	11,3K	9,5K	7,8K	6,4K	4,9K	4,0K	3,1K	2,4K	1,9K	1,4K	1,1K	0,8K	0,6K		
100%	100%	96%	90%	83%	74%	64%	55%	46%	38%	31%	24%	19%	15%	12%	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°					29°					{C_ANG}°					97,9%					97,3%	



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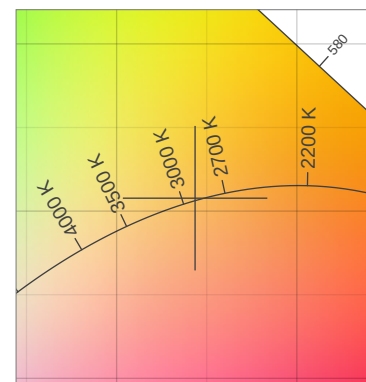
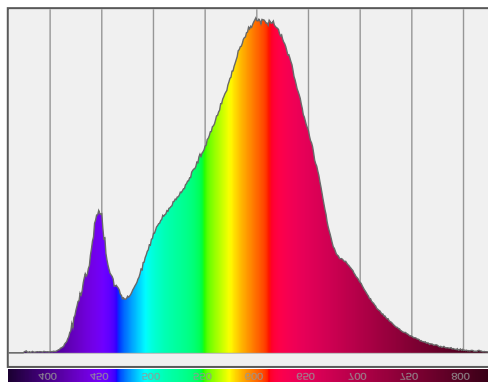
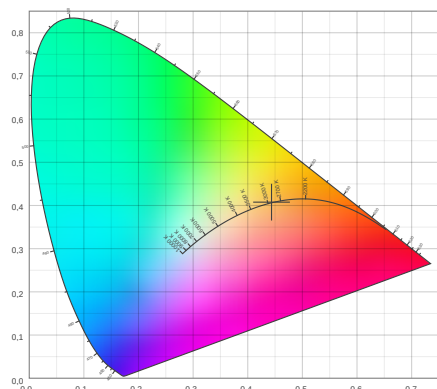
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Color details



CIE 1931

x: 0,444

2925 K

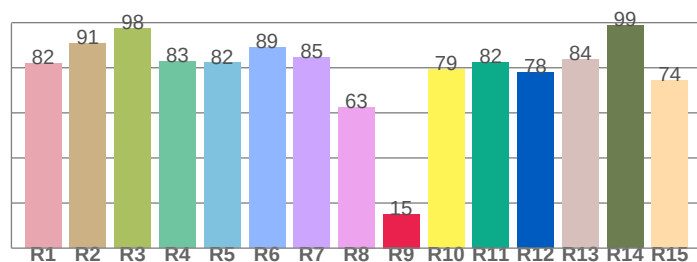
y: 0,408

Spectra

CIE 1931 ZOOM

Δuv : 0,0006

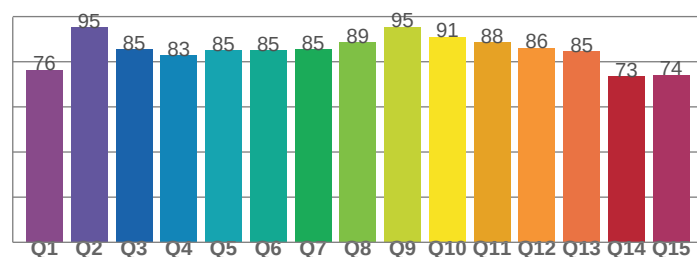
CRI: 83,9 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
81,8	90,6	97,5	82,8	82,2	89,1	84,6	62,6
R9	R10	R11	R12	R13	R14	R15	
15,2	79,1	82,4	77,8	83,6	98,9	74,4	

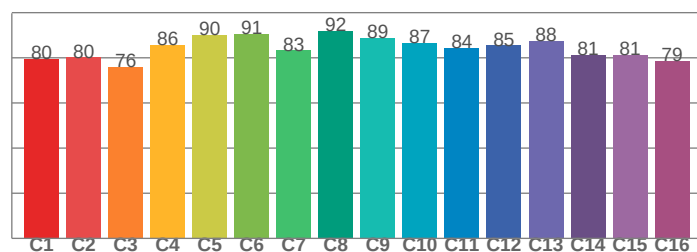
CQS: 83,7



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
76,4	95,2	85,3	82,8	84,9	85,2	85,4	88,5
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
95,5	91,1	88,5	86,2	84,8	73,4	74,2	

TM30: 84,4



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

C1	C2	C3	C4	C5	C6	C7	C8
79,5	80,2	76,1	85,8	90,1	90,7	83,3	92,0
C9	C10	C11	C12	C13	C14	C15	
88,8	86,7	84,3	85,4	87,5	81,3	81,3	

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
2925 K	83,9	15,2	84,4	97,3	83,7	0,444	0,408	0,253	0,349	0,0006



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TM30 details

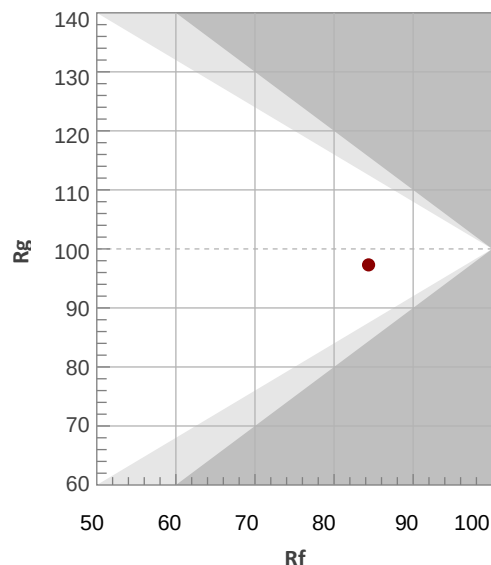
Rf 84,4

Fidelity index Rf

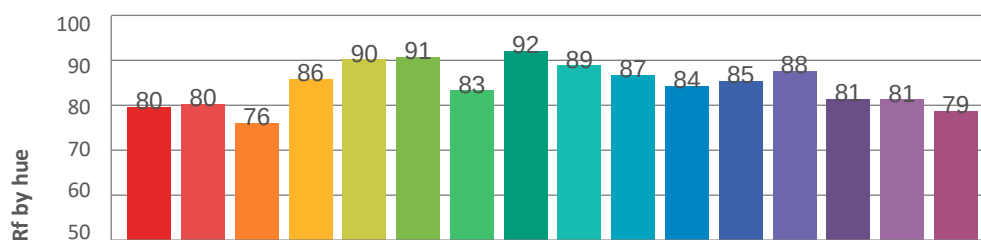
Rg 97,3

Gamut index Rg

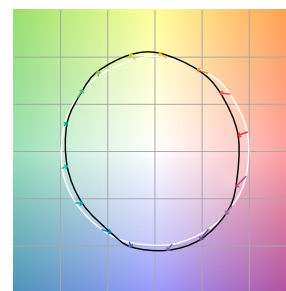
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	80	-10%	-2%
2	80	-8%	7%
3	76	-3%	11%
4	86	3%	8%
5	90	6%	5%
6	91	4%	-3%
7	83	0%	-10%
8	92	-3%	-3%
9	89	-6%	-1%
10	87	-5%	4%
11	84	-3%	9%
12	85	4%	3%
13	88	5%	-6%
14	81	4%	-13%
15	81	-1%	-10%
16	79	-8%	-13%



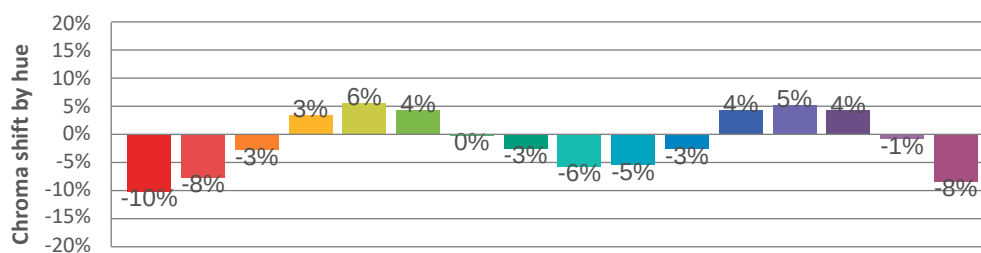
Hue binH



Color vector graphics



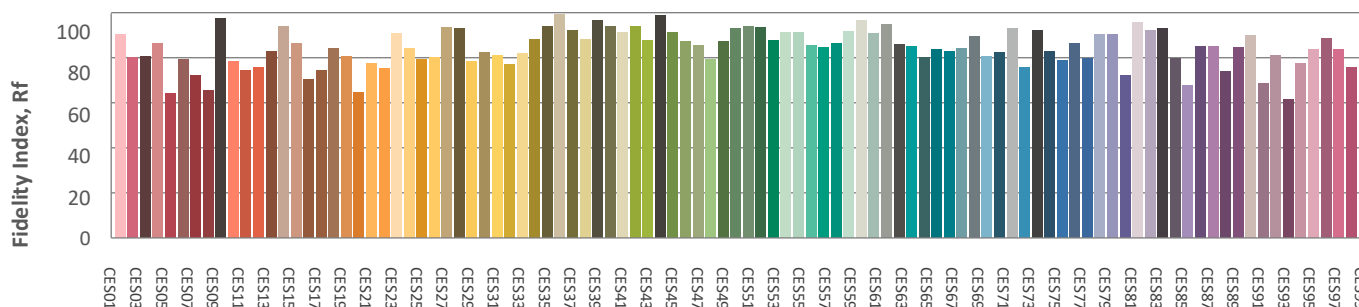
Hue bin



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	0,7	1,4	1,0	1,6	1,8	0,4	1,1	0,7	1,3	1,5
	3H	1,3	1,9	1,6	2,2	2,4	0,9	1,5	1,2	1,8	2,0
	4H	1,9	2,4	2,2	2,7	3,0	1,7	2,3	2,1	2,6	2,8
	6H	3,0	3,6	3,4	3,9	4,2	3,3	3,9	3,7	4,2	4,5
	8H	4,5	5,0	4,9	5,3	5,6	4,9	5,4	5,3	5,7	6,1
	12H	6,7	7,1	7,0	7,5	7,8	7,4	7,9	7,8	8,2	8,5
4H	2H	0,8	1,4	1,2	1,7	1,9	0,6	1,1	0,9	1,4	1,7
	3H	1,7	2,1	2,0	2,5	2,8	1,3	1,8	1,7	2,1	2,4
	4H	2,5	2,9	2,9	3,3	3,7	2,5	2,9	2,9	3,3	3,6
	6H	4,2	4,5	4,6	4,9	5,3	4,6	4,9	5,0	5,3	5,7
	8H	6,0	6,3	6,4	6,7	7,1	6,5	6,8	6,9	7,2	7,6
	12H	8,5	8,7	8,9	9,2	9,6	9,2	9,5	9,7	9,9	10,4
8H	4H	3,1	3,4	3,5	3,8	4,2	3,1	3,4	3,5	3,8	4,2
	6H	5,3	5,5	5,7	5,9	6,4	5,6	5,8	6,1	6,3	6,8
	8H	7,4	7,6	7,9	8,1	8,6	7,9	8,0	8,4	8,5	9,0
	12H	10,2	10,4	10,7	10,8	11,4	10,9	11,0	11,4	11,5	12,0
12H	4H	3,3	3,6	3,8	4,0	4,5	3,3	3,6	3,8	4,0	4,4
	6H	5,8	6,0	6,3	6,5	7,0	6,1	6,3	6,6	6,8	7,3
	8H	8,2	8,3	8,7	8,8	9,3	8,5	8,7	9,0	9,2	9,7
Variation of the observer position for the luminaire distance S											
S = 1,0H		+0,3 / -0,3					+0,3 / -0,3				
S = 1,5H		+0,5 / -0,6					+0,4 / -0,6				
S = 2,0H		+0,8 / -1,0					+0,7 / -1,0				
Standard table		---					---				
Correction summand		---					---				
Corrected glare indices referring to 1810lm total luminous flux											

