

LM-79

Test Report

LM79_ULTIMA_2700K_CRI80_8DEG

General Discription

Item number	U-X-X-X-01-5
Date and time	17-2-2017 15:44:24
CCT (Kelvin)	2682 K
Beam angle	12,5°
Luminous flux	1641 lm
Efficiency	90 lm/watt
Weighted energy	18,2 kWh/1000h
Power factor	0,9
CRI (RA)	81,4
Fidelity index Rf	Rf 79,1
Gammut index Rg	Rg 99,4



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Beam details	1m	2m	3m	4m	5m														
Lux*	25655 lx	6414 lx	2851 lx	1603 lx	1026 lx														
*measured at center of beam																			
Footcandles*	2383,4 fcd	595,8 fcd	264,8 fcd	149,0 fcd	95,3 fcd														
Beam width (meter)	0,2 m	0,4 m	0,7 m	0,9 m	1,1 m														
Beam width (Feet)	0,7 ft	1,4 ft	2,2 ft	2,9 ft	3,6 ft														
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
25655lx	6414lx	2851lx	1603lx	1026lx	713lx	524lx	401lx	317lx	257lx	212lx	178lx	152lx	131lx	114lx	100lx	89lx	79lx	71lx	64lx
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
2383,4fcd	595,8fcd	264,8fcd	149fcd	95,3fcd	66,2fcd	48,6fcd	37,2fcd	29,4fcd	23,8fcd	19,7fcd	16,6fcd	14,1fcd	12,2fcd	10,6fcd	9,3fcd	8,2fcd	7,4fcd	6,6fcd	6fcd
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°
25,7K	24,4K	22,2K	20,0K	17,8K	15,5K	13,2K	10,9K	8,7K	6,5K	4,7K	3,7K	3,0K	2,3K	1,6K	1,1K	0,8K	0,7K	0,5K	0,4K
100%	95%	87%	78%	69%	60%	51%	43%	34%	25%	18%	14%	12%	9%	6%	4%	3%	3%	2%	2%
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°
25,7K	25,7K	24,8K	22,7K	20,0K	16,9K	13,8K	11,0K	8,7K	6,9K	5,6K	4,2K	3,1K	2,3K	1,7K	1,4K	1,0K	0,7K	0,5K	0,4K
100%	100%	97%	88%	78%	66%	54%	43%	34%	27%	22%	17%	12%	9%	7%	5%	4%	3%	2%	2%
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°
25,7K	24,4K	22,2K	20,0K	17,8K	15,5K	13,2K	10,9K	8,7K	6,5K	4,7K	3,7K	3,0K	2,3K	1,6K	1,1K	0,8K	0,7K	0,5K	0,4K
100%	95%	87%	78%	69%	60%	51%	43%	34%	25%	18%	14%	12%	9%	6%	4%	3%	3%	2%	2%
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°
25,7K	25,7K	24,8K	22,7K	20,0K	16,9K	13,8K	11,0K	8,7K	6,9K	5,6K	4,2K	3,1K	2,3K	1,7K	1,4K	1,0K	0,7K	0,5K	0,4K
100%	100%	97%	88%	78%	66%	54%	43%	34%	27%	22%	17%	12%	9%	7%	5%	4%	3%	2%	2%
Beam angle 50%		Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone					
12,5°		25,3°				{C_ANG}°				98,3%				97,8%					



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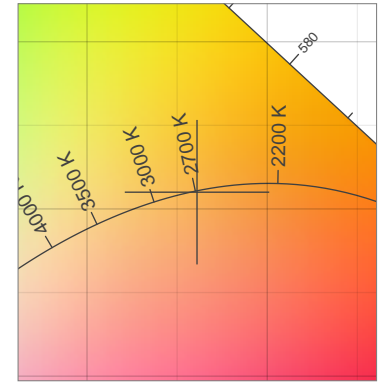
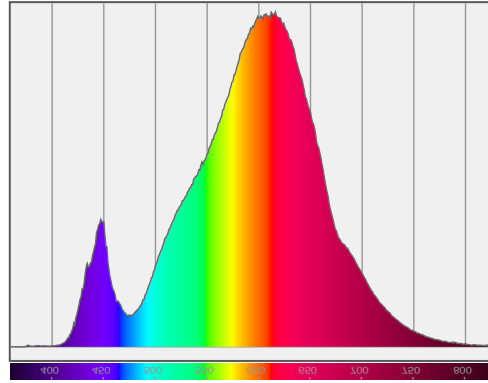
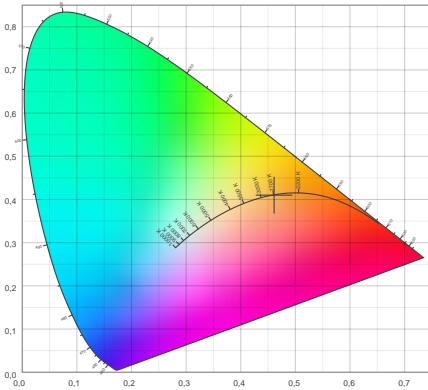
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Color details



CIE 1931

x: 0,461



Spectra

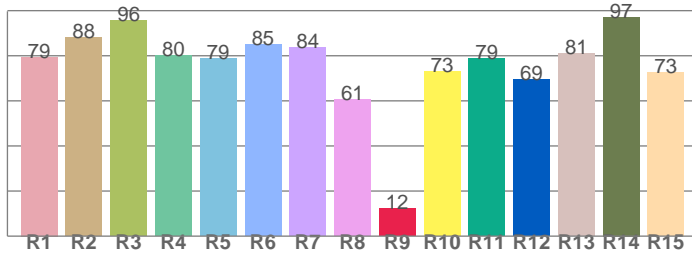
CIE 1931 ZOOM

2682 K

y: 0,410

Δuv : 0,0003

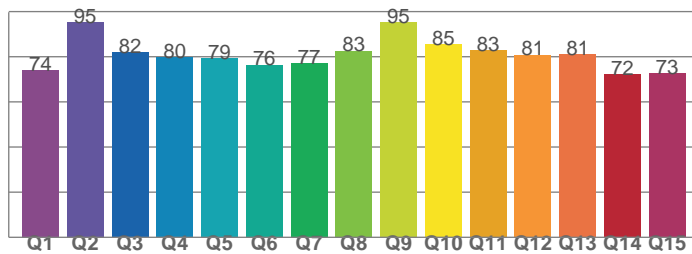
CRI: 81,4 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
79,5	88,1	95,8	80,1	78,7	85,0	83,6	60,5
R9	R10	R11	R12	R13	R14	R15	
12,1	72,9	78,8	69,4	81,0	97,2	72,7	

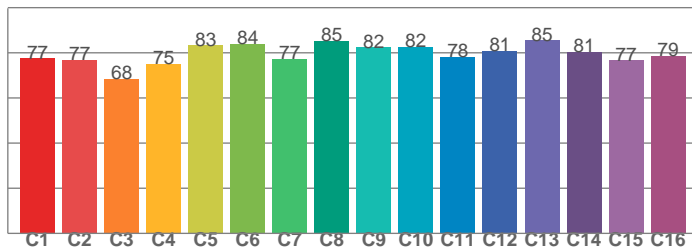
CQS: 79,8



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
74,2	95,3	81,8	79,6	79,5	76,5	77,2	82,7
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
95,3	85,4	82,9	80,9	81,0	72,2	72,6	

TM30: 79,1



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

C1	C2	C3	C4	C5	C6	C7	C8
77,5	76,7	68,3	75,1	83,2	84,0	77,3	85,1
C9	C10	C11	C12	C13	C14	C15	
82,3	82,5	78,3	80,8	85,4	80,5	76,6	

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
2682 K	81,4	12,1	79,1	99,4	79,8	0,461	0,410	0,264	0,352	0,0003



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TM30 details

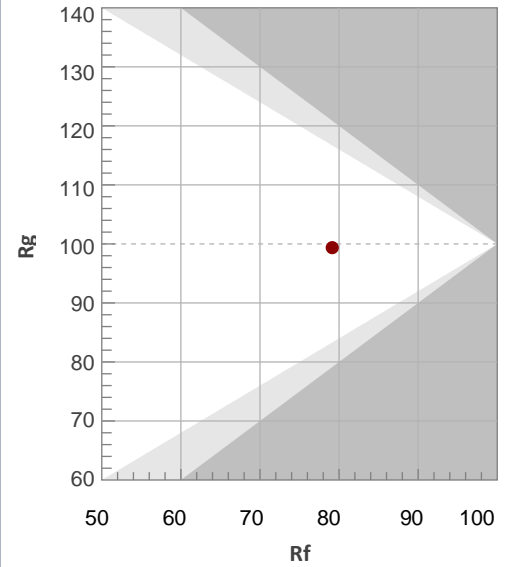
Rf 79,1

Fidelity index Rf

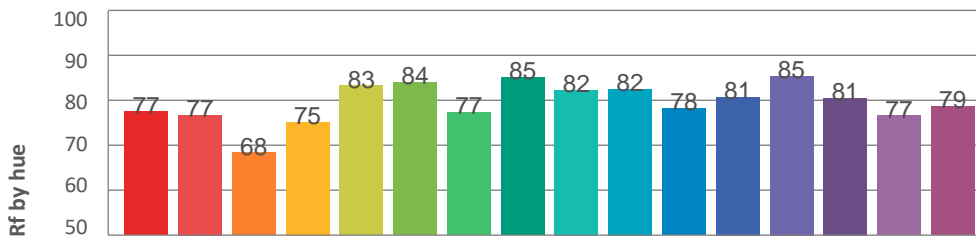
Rg 99,4

Gamut index Rg

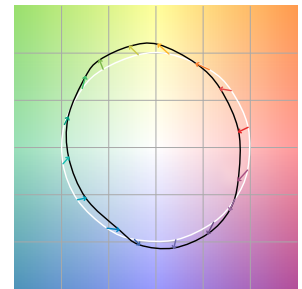
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	77	-11%	-3%
2	77	-9%	8%
3	68	-2%	15%
4	75	8%	13%
5	83	11%	7%
6	84	10%	-2%
7	77	4%	-12%
8	85	-2%	-8%
9	82	-7%	-6%
10	82	-8%	3%
11	78	-6%	12%
12	81	5%	6%
13	85	8%	-4%
14	81	7%	-12%
15	77	2%	-13%
16	79	-8%	-13%



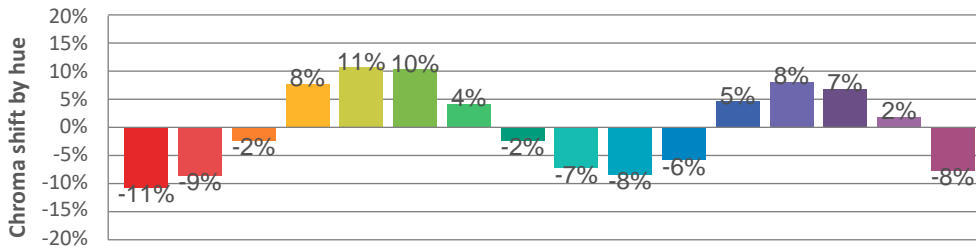
Hue binH



Color vector graphics



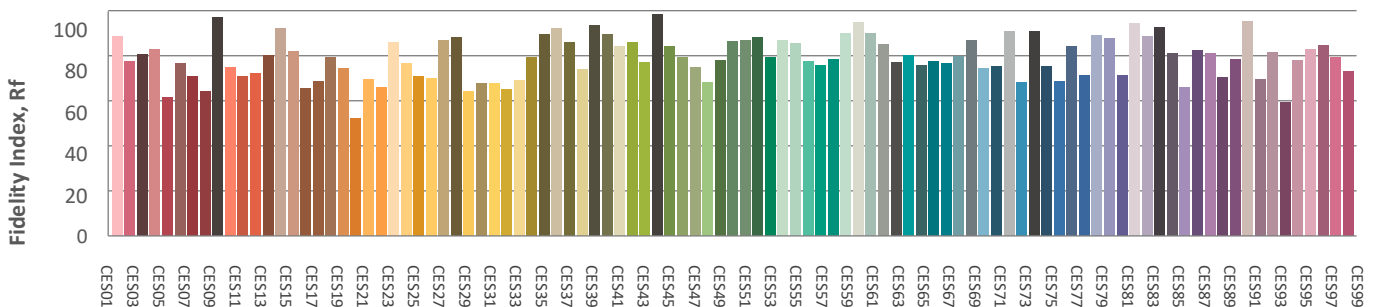
Hue bin



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	-0,8	-0,1	-0,5	0,1	0,3	-0,4	0,2	-0,2	0,4	0,6
	3H	-0,2	0,4	0,1	0,6	0,9	-0,1	0,5	0,2	0,7	1,0
	4H	0,1	0,7	0,4	0,9	1,2	0,0	0,6	0,3	0,8	1,1
	6H	1,4	1,9	1,7	2,2	2,5	0,7	1,2	1,0	1,5	1,8
	8H	2,8	3,3	3,2	3,6	3,9	2,0	2,5	2,3	2,8	3,1
	12H	4,9	5,4	5,3	5,7	6,0	3,9	4,4	4,3	4,7	5,0
4H	2H	-0,6	-0,1	-0,3	0,2	0,5	-0,3	0,2	0,0	0,5	0,8
	3H	0,1	0,6	0,5	0,9	1,2	0,1	0,6	0,5	0,9	1,2
	4H	0,6	1,0	1,0	1,3	1,7	0,4	0,8	0,8	1,1	1,5
	6H	2,4	2,7	2,8	3,1	3,5	1,5	1,8	1,9	2,2	2,6
	8H	4,2	4,5	4,6	4,9	5,3	3,3	3,6	3,7	4,0	4,4
	12H	6,6	6,9	7,1	7,3	7,7	5,6	5,9	6,1	6,3	6,7
8H	4H	0,8	1,1	1,3	1,5	2,0	0,7	1,0	1,1	1,4	1,8
	6H	3,2	3,4	3,7	3,9	4,4	2,5	2,7	2,9	3,1	3,6
	8H	5,5	5,6	5,9	6,1	6,6	4,7	4,8	5,1	5,3	5,8
	12H	8,2	8,3	8,7	8,8	9,3	7,3	7,4	7,8	7,9	8,4
12H	4H	1,0	1,3	1,5	1,7	2,2	0,9	1,2	1,4	1,6	2,0
	6H	3,7	3,9	4,2	4,3	4,8	3,1	3,2	3,5	3,7	4,2
	8H	6,1	6,2	6,6	6,7	7,2	5,4	5,5	5,9	6,0	6,5
Variation of the observer position for the luminaire distance S											
S = 1,0H	+0,3 / -0,3					+0,4 / -0,3					
S = 1,5H	+0,6 / -0,7					+0,8 / -0,7					
S = 2,0H	+1,2 / -1,0					+1,5 / -1,1					
Standard table	---					---					
Correction summand	---					---					
Corrected glare indices referring to 1641lm total luminous flux											

