

LM-79

Test Report

LM79-RUBY-5-4000K-CRI80-SPOT

General Description

Item number	
Date and time	10-3-2017 16:00:38
CCT (Kelvin)	3825 K
Beam angle	15,7°
Luminous flux	2148 lm
Efficiency	104 lm/watt
Weighted energy	20,6 kWh/1000h
Power factor	0,89
CRI (RA)	82,8
Fidelity index Rf	Rf 82,9
Gammut index Rg	Rg 97,7

NEW



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Beam details	1m	2m	3m	4m	5m														
Lux*	11478 lx	2870 lx	1275 lx	717 lx	459 lx														
*measured at center of beam																			
Footcandles*	1066,4 fcd	266,6 fcd	118,5 fcd	66,6 fcd	42,7 fcd														
Beam width (meter)	0,3 m	0,6 m	0,8 m	1,1 m	1,4 m														
Beam width (Feet)	0,9 ft	1,8 ft	2,7 ft	3,6 ft	4,5 ft														
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
11478lx	2870lx	1275lx	717lx	459lx	319lx	234lx	179lx	142lx	115lx	95lx	80lx	68lx	59lx	51lx	45lx	40lx	35lx	32lx	29lx
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
1066,4fcd	266,6fcd	118,5fcd	66,6fcd	42,7fcd	29,6fcd	21,8fcd	16,7fcd	13,2fcd	10,7fcd	8,8fcd	7,4fcd	6,3fcd	5,4fcd	4,7fcd	4,2fcd	3,7fcd	3,3fcd	3fcd	2,7fcd
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°
11,5K	10,3K	9,0K	7,4K	5,6K	3,9K	3,0K	2,2K	1,7K	1,5K	1,2K	1,1K	1,0K	1,0K	0,9K	0,9K	0,8K	0,7K	0,5K	0,3K
100%	89%	79%	65%	49%	34%	26%	19%	15%	13%	11%	10%	9%	8%	8%	7%	7%	6%	5%	3%
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°
11,5K	10,3K	9,0K	7,4K	5,6K	3,9K	3,0K	2,2K	1,7K	1,5K	1,2K	1,1K	1,0K	1,0K	0,9K	0,9K	0,8K	0,7K	0,5K	0,3K
100%	89%	79%	65%	49%	34%	26%	19%	15%	13%	11%	10%	9%	8%	8%	7%	7%	6%	5%	3%
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°
11,5K	10,3K	9,0K	7,4K	5,6K	3,9K	3,0K	2,2K	1,8K	1,5K	1,3K	1,2K	1,0K	1,0K	0,9K	0,9K	0,9K	0,8K	0,7K	0,5K
100%	89%	79%	65%	49%	34%	27%	20%	16%	13%	11%	10%	9%	9%	8%	8%	7%	7%	6%	5%
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°
11,5K	10,3K	9,0K	7,4K	5,6K	3,9K	3,0K	2,2K	1,8K	1,5K	1,3K	1,2K	1,0K	1,0K	0,9K	0,9K	0,9K	0,8K	0,7K	0,5K
100%	89%	79%	65%	49%	34%	27%	20%	16%	13%	11%	10%	9%	9%	8%	8%	7%	7%	6%	5%
Beam angle 50%		Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone					
15,7°		43,6°				{C_ANG}°				99,3%				98,3%					



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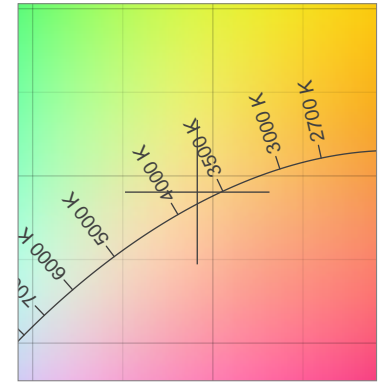
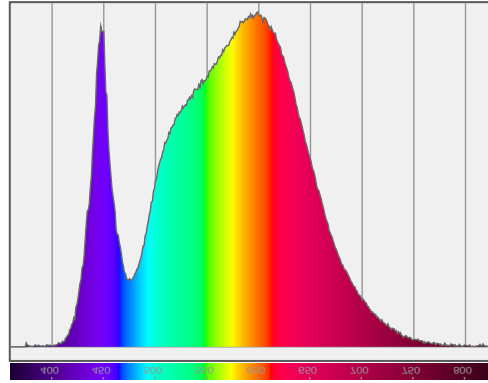
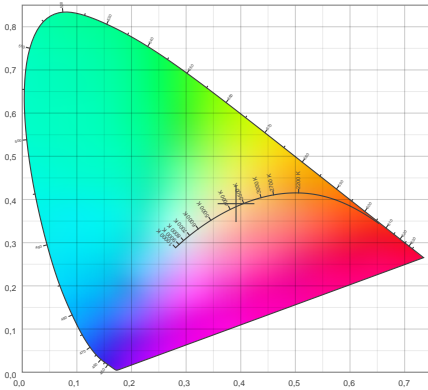
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Color details



CIE 1931

x: 0,391



Spectra

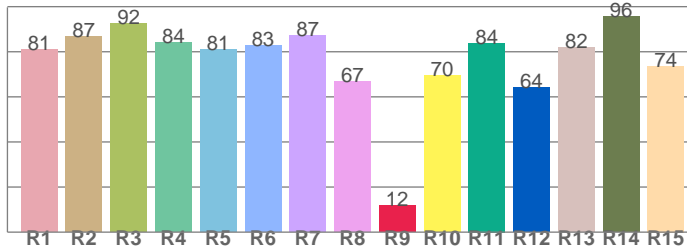
CIE 1931 ZOOM

3825 K

y: 0,390

Δuv : 0,0032

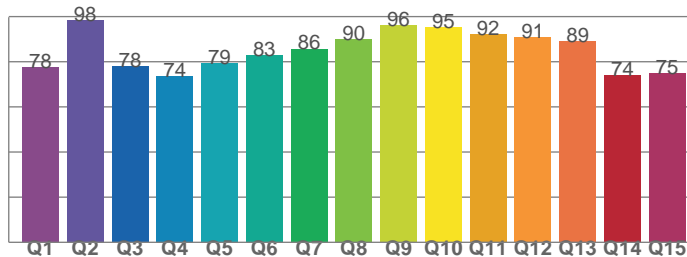
CRI: **82,8** (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
81,0	86,7	92,4	84,0	81,1	82,8	87,2	66,8
R9	R10	R11	R12	R13	R14	R15	
11,7	69,6	83,9	64,3	82,0	95,7	73,7	

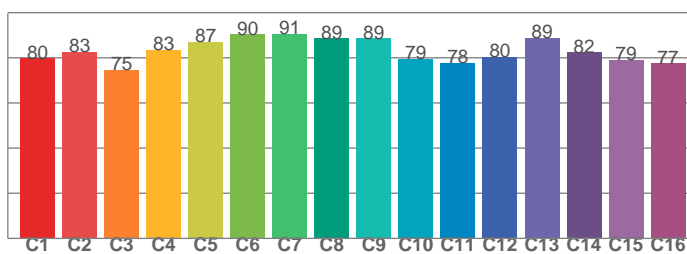
CQS: **83,1**



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
77,6	98,4	77,9	73,6	79,4	83,0	85,7	90,1
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,1	95,3	92,0	90,8	89,2	74,1	75,0	

TM30: **82,9**



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

C1	C2	C3	C4	C5	C6	C7	C8
79,8	82,6	74,6	83,5	87,1	90,3	90,7	88,5
C9	C10	C11	C12	C13	C14	C15	
88,6	79,4	77,7	80,5	88,7	82,3	79,1	

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
3825 K	82,8	11,7	82,9	97,7	83,1	0,391	0,390	0,227	0,339	0,0032



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TM30 details

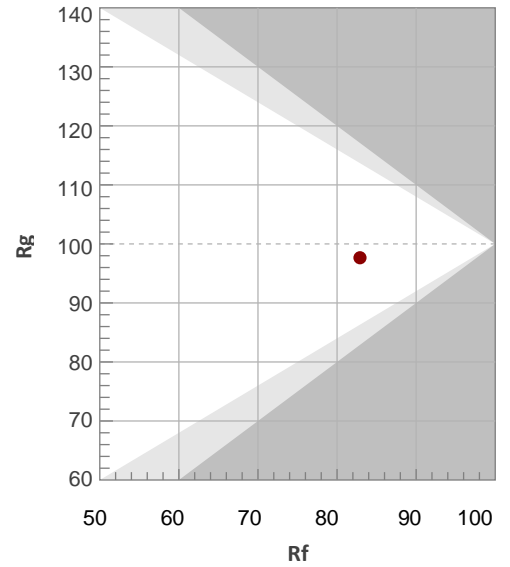
Rf 82,9

Fidelity index Rf

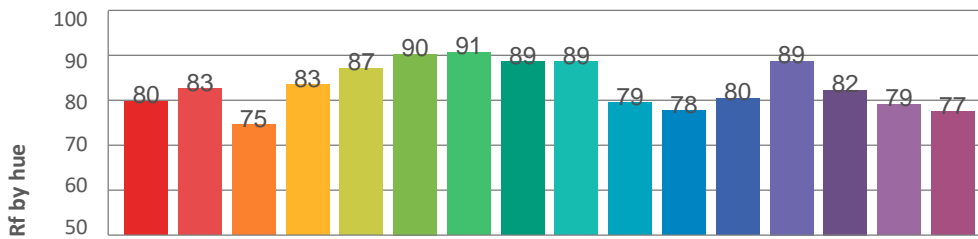
Rg 97,7

Gamut index Rg

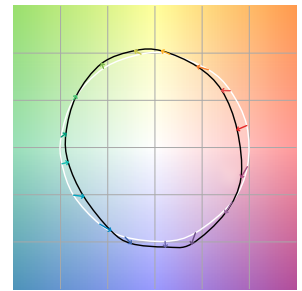
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	80	-11%	-2%
2	83	-7%	5%
3	75	-4%	12%
4	83	2%	9%
5	87	5%	6%
6	90	5%	-1%
7	91	0%	-6%
8	89	-4%	-5%
9	89	-7%	0%
10	79	-8%	7%
11	78	-1%	14%
12	80	5%	8%
13	89	6%	-1%
14	82	8%	-10%
15	79	1%	-13%
16	77	-4%	-12%



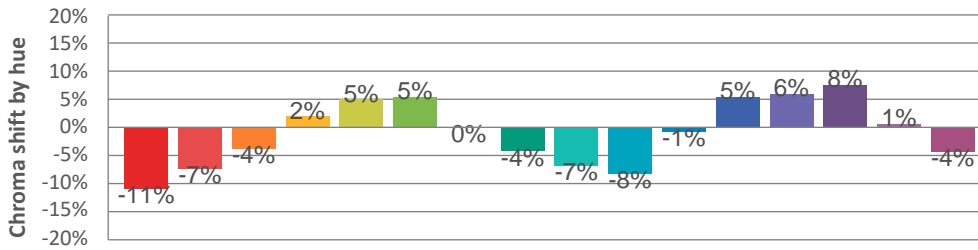
Hue binH



Color vector graphics



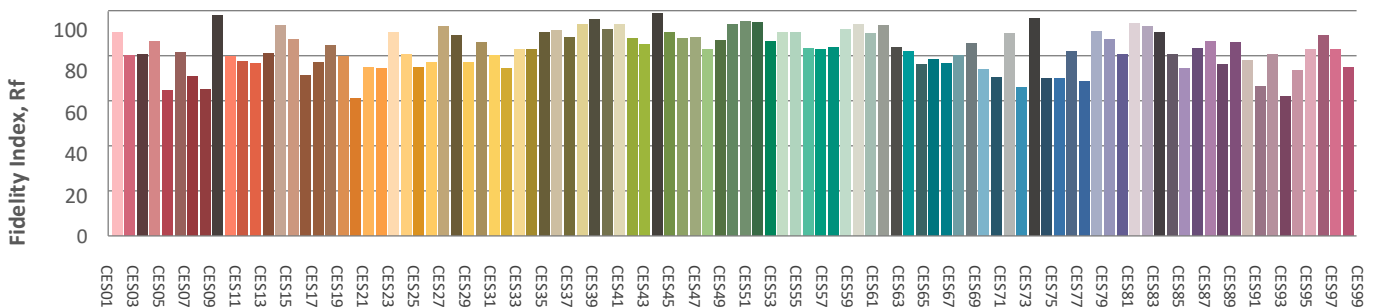
Hue bin



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	17,4	18,1	17,7	18,3	18,5	17,9	18,6	18,2	18,8	19,0
	3H	17,3	17,9	17,6	18,1	18,4	17,8	18,4	18,1	18,6	18,9
	4H	17,2	17,8	17,5	18,0	18,3	17,7	18,3	18,0	18,5	18,8
	6H	17,1	17,7	17,5	17,9	18,2	17,6	18,2	18,0	18,4	18,7
	8H	17,1	17,6	17,4	17,9	18,2	17,6	18,1	18,0	18,4	18,7
	12H	17,1	17,5	17,4	17,8	18,2	17,6	18,0	17,9	18,4	18,7
4H	2H	17,2	17,8	17,5	18,0	18,3	17,7	18,3	18,0	18,5	18,8
	3H	17,1	17,5	17,4	17,8	18,2	17,6	18,0	17,9	18,3	18,7
	4H	17,0	17,4	17,4	17,7	18,1	17,5	17,9	17,9	18,2	18,6
	6H	16,9	17,3	17,3	17,6	18,0	17,4	17,8	17,8	18,1	18,5
	8H	16,9	17,2	17,3	17,6	18,0	17,4	17,7	17,8	18,1	18,5
	12H	16,8	17,1	17,3	17,5	17,9	17,4	17,6	17,8	18,0	18,4
8H	4H	16,9	17,2	17,3	17,6	18,0	17,4	17,7	17,8	18,1	18,5
	6H	16,8	17,0	17,2	17,4	17,9	17,3	17,5	17,8	17,9	18,4
	8H	16,8	16,9	17,2	17,4	17,9	17,3	17,4	17,7	17,9	18,4
	12H	16,7	16,9	17,2	17,3	17,8	17,2	17,4	17,7	17,8	18,3
12H	4H	16,8	17,1	17,3	17,5	17,9	17,3	17,6	17,8	18,0	18,4
	6H	16,7	16,9	17,2	17,4	17,9	17,3	17,4	17,7	17,9	18,4
	8H	16,7	16,8	17,2	17,3	17,8	17,2	17,4	17,7	17,8	18,3
Variation of the observer position for the luminaire distance S											
S = 1,0H	+5,3 / -14,8					+5,1 / -15,2					
S = 1,5H	+8,1 / -16,2					+8,0 / -16,6					
S = 2,0H	+10,1 / -17,1					+10,0 / -17,8					
Standard table	BK00					BK00					
Correction summand	-1,2					-0,7					
Corrected glare indices referring to 2148lm total luminous flux											

