

LM-79

Test Report

LM79-RUBY-5-4000K-CRI80-MEDIUM

General Description

Item number	
Date and time	10-3-2017 16:02:28
CCT (Kelvin)	3833 K
Beam angle	46,1°
Luminous flux	2188 lm
Efficiency	106 lm/watt
Weighted energy	20,5 kWh/1000h
Power factor	0,89
CRI (RA)	82,7
Fidelity index Rf	Rf 82,9
Gammut index Rg	Rg 97,6

NEW



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Beam details	1m	2m	3m	4m	5m																			
Lux*	3081 lx	770 lx	342 lx	193 lx	123 lx																			
<i>*measured at center of beam</i>																								
Footcandles*	286,2 fcd	71,6 fcd	31,8 fcd	17,9 fcd	11,4 fcd																			
Beam width (meter)	0,9 m	1,7 m	2,6 m	3,4 m	4,3 m																			
Beam width (Feet)	2,8 ft	5,6 ft	8,4 ft	11,2 ft	14 ft																			
Beam intensities																								
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m					
3081lx	770lx	342lx	193lx	123lx	86lx	63lx	48lx	38lx	31lx	25lx	21lx	18lx	16lx	14lx	12lx	11lx	10lx	9lx	8lx					
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					
286,2fcd	71,6fcd	31,8fcd	17,9fcd	11,4fcd	8fcd	5,8fcd	4,5fcd	3,5fcd	2,9fcd	2,4fcd	2fcd	1,7fcd	1,5fcd	1,3fcd	1,1fcd	1fcd	0,9fcd	0,8fcd	0,7fcd					
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°					
3081	3055	3025	2962	2900	2777	2627	2463	2250	2038	1841	1648	1476	1349	1221	1117	1017	870	654	438					
100%	99%	98%	96%	94%	90%	85%	80%	73%	66%	60%	54%	48%	44%	40%	36%	33%	28%	21%	14%					
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°					
3081	3055	3025	2962	2900	2777	2627	2463	2250	2038	1841	1648	1476	1349	1221	1117	1017	870	654	438					
100%	99%	98%	96%	94%	90%	85%	80%	73%	66%	60%	54%	48%	44%	40%	36%	33%	28%	21%	14%					
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°					
3081	3095	3091	3087	2990	2886	2729	2513	2297	2064	1832	1636	1467	1305	1197	1089	974	856	725	541					
100%	100%	100%	100%	97%	94%	89%	82%	75%	67%	59%	53%	48%	42%	39%	35%	32%	28%	24%	18%					
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°					
3081	3095	3091	3087	2990	2886	2729	2513	2297	2064	1832	1636	1467	1305	1197	1089	974	856	725	541					
100%	100%	100%	100%	97%	94%	89%	82%	75%	67%	59%	53%	48%	42%	39%	35%	32%	28%	24%	18%					
Beam angle 50%					Field angle 10%					Cutoff angle 2,5%					Intensity ratio in 120° cone					Intensity ratio in 90° cone				
46,1°					80,6°					{C_ANG}°					99,2%					96,9%				



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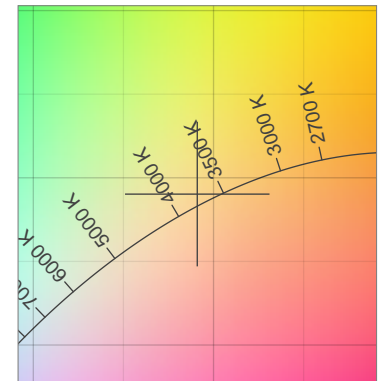
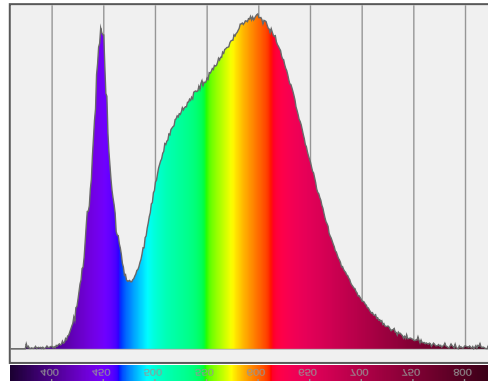
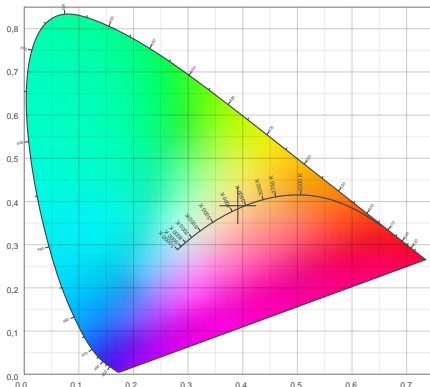
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Color details



CIE 1931

x: 0,391



Spectra

CIE 1931 ZOOM

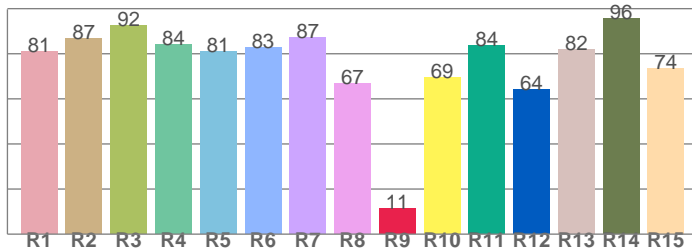
3833 K

y: 0,390

Δuv : 0,0033

CRI: **82,7** (R1-R8)

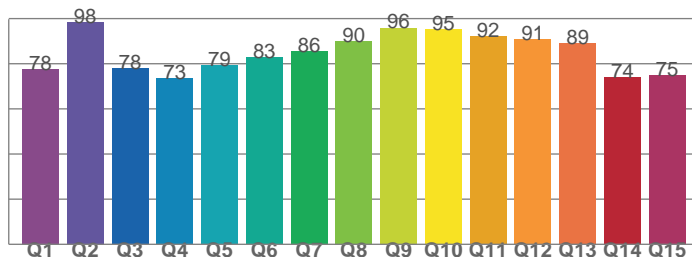
CRI values, R1-R8 are used to calculate final CRI value



R1	R2	R3	R4	R5	R6	R7	R8
80,9	86,7	92,5	84,0	81,0	82,8	87,2	66,7
R9	R10	R11	R12	R13	R14	R15	
11,4	69,5	83,8	64,3	81,9	95,7	73,6	

CQS: **83,0**

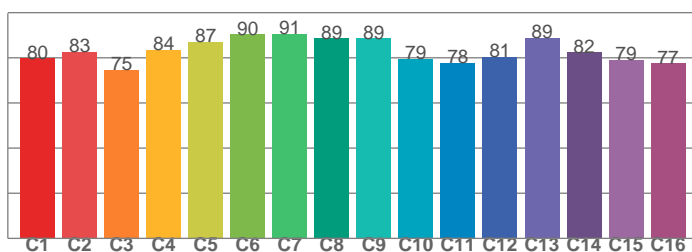
CQS values



Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
77,6	98,4	77,9	73,5	79,2	82,8	85,6	90,0
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
95,9	95,4	92,1	90,8	89,2	74,0	74,9	

TM30: **82,9**

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



C1	C2	C3	C4	C5	C6	C7	C8
79,7	82,5	74,6	83,5	87,2	90,3	90,7	88,5
C9	C10	C11	C12	C13	C14	C15	
88,6	79,4	77,7	80,5	88,8	82,3	79,0	

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
3833 K	82,7	11,4	82,9	97,6	83,0	0,391	0,390	0,227	0,339	0,0033



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TM30 details

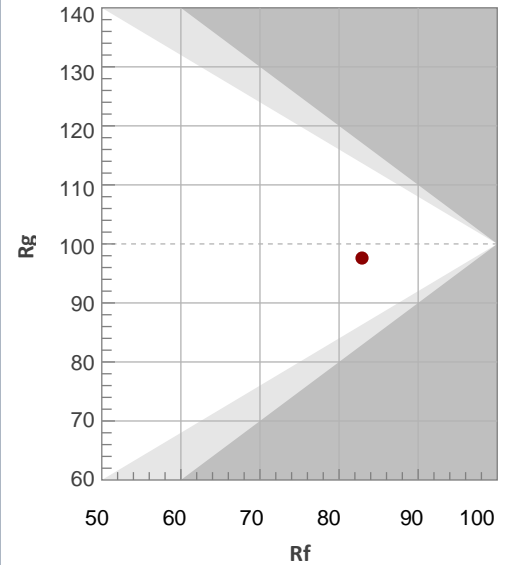
Rf 82,9

Fidelity index Rf

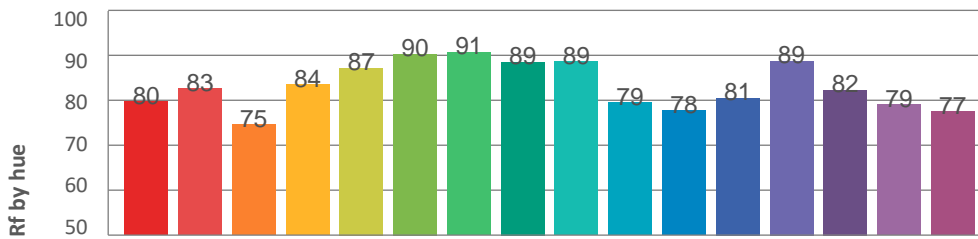
Rg 97,6

Gamut index Rg

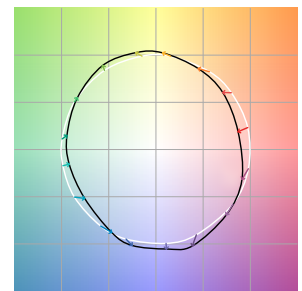
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	80	-11%	-2%
2	83	-7%	5%
3	75	-4%	12%
4	84	2%	9%
5	87	5%	6%
6	90	5%	-1%
7	91	0%	-6%
8	89	-4%	-5%
9	89	-7%	0%
10	79	-8%	7%
11	78	-1%	14%
12	81	5%	8%
13	89	6%	-1%
14	82	7%	-10%
15	79	1%	-13%
16	77	-4%	-12%



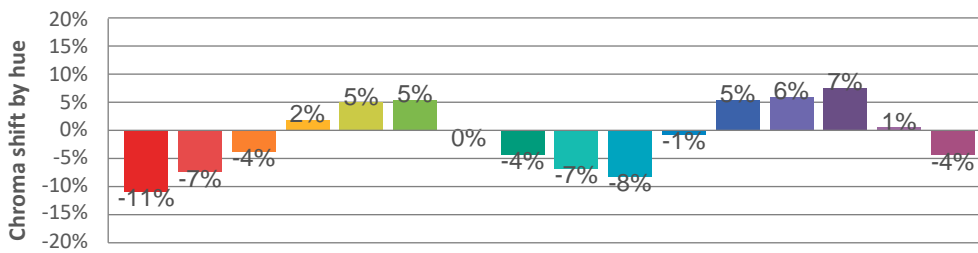
Hue binH



Color vector graphics



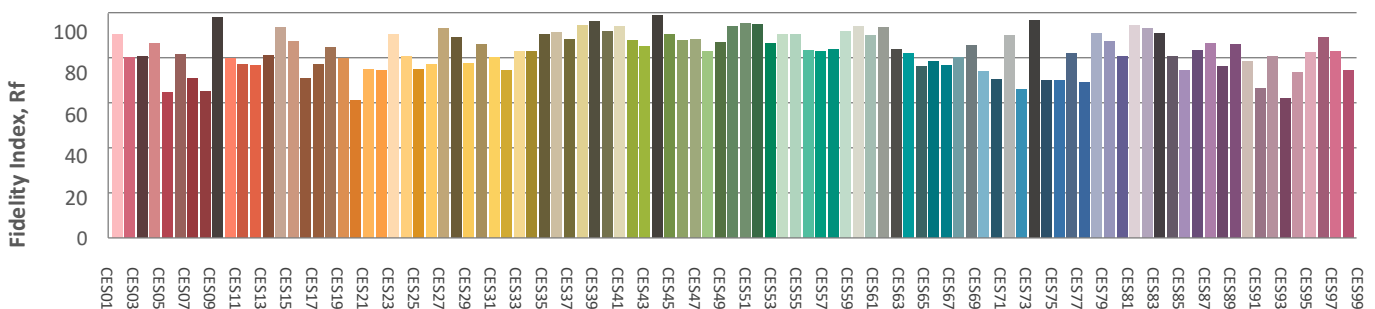
Hue bin



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	19,1	19,8	19,4	20,0	20,2	19,2	19,9	19,5	20,1	20,3
	3H	19,0	19,6	19,3	19,9	20,1	19,1	19,7	19,4	19,9	20,2
	4H	18,9	19,5	19,2	19,8	20,0	19,0	19,6	19,3	19,8	20,1
	6H	18,9	19,4	19,2	19,7	20,0	18,9	19,5	19,3	19,8	20,0
	8H	18,8	19,3	19,2	19,6	19,9	18,9	19,4	19,2	19,7	20,0
	12H	18,8	19,3	19,1	19,6	19,9	18,9	19,3	19,2	19,7	20,0
4H	2H	18,9	19,5	19,3	19,8	20,0	19,0	19,6	19,3	19,9	20,1
	3H	18,8	19,3	19,1	19,6	19,9	18,9	19,3	19,2	19,7	20,0
	4H	18,7	19,1	19,1	19,5	19,8	18,8	19,2	19,2	19,5	19,9
	6H	18,6	19,0	19,1	19,4	19,8	18,7	19,1	19,1	19,4	19,8
	8H	18,6	18,9	19,0	19,3	19,7	18,7	19,0	19,1	19,4	19,8
	12H	18,6	18,8	19,0	19,2	19,7	18,6	18,9	19,1	19,3	19,7
8H	4H	18,6	18,9	19,0	19,3	19,7	18,7	19,0	19,1	19,4	19,8
	6H	18,5	18,7	19,0	19,2	19,6	18,6	18,8	19,0	19,2	19,7
	8H	18,5	18,7	18,9	19,1	19,6	18,5	18,7	19,0	19,2	19,7
	12H	18,4	18,6	18,9	19,1	19,6	18,5	18,6	19,0	19,1	19,6
12H	4H	18,6	18,8	19,0	19,2	19,7	18,6	18,9	19,1	19,3	19,7
	6H	18,5	18,7	18,9	19,1	19,6	18,5	18,7	19,0	19,2	19,7
	8H	18,4	18,6	18,9	19,1	19,6	18,5	18,6	19,0	19,1	19,6

Variation of the observer position for the luminaire distance S

S = 1,0H	+5,2 / -11,8	+5,0 / -11,9
S = 1,5H	+7,9 / -18,8	+7,8 / -19,0
S = 2,0H	+9,9 / -20,3	+9,8 / -20,8
Standard table	BK00	BK00
Correction summand	0,5	0,5

Corrected glare indices referring to 2188lm total luminous flux



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