

LM-79

Test Report

LM79-RUBY-BRACKET-7-3000K-CRI80-MEDIUM

General Discription

Item number	RU-37-X-X-02-2-X	
Date and time	21-11-2016 09:04:43	
CCT (Kelvin)	3091 K	
Beam angle	49,5°	
Luminous flux	3615 lm	
Efficiency	87 lm/watt	
Weighted energy	41,7 kWh/1000h	
Power factor	0,95	
CRI (RA)	81,1	
Fidelity index Rf	Rf 82,5	
Gammut index Rg	Rg 95,6	
Peak	4656 cd	



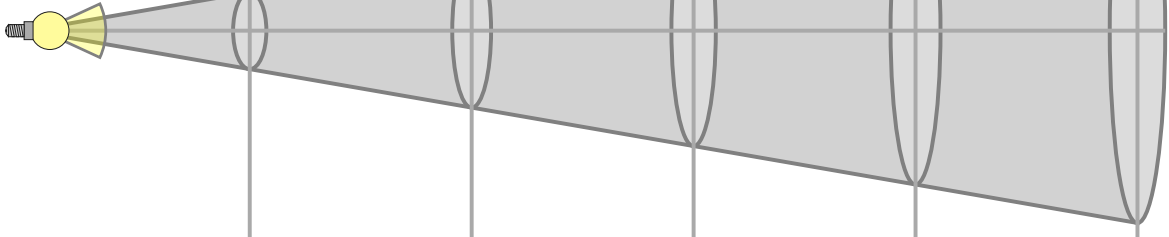
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Beam details					1m		2m		3m		4m		5m											
Lux*					4639 lx		1160 lx		515 lx		290 lx		186 lx											
49,5° 																								
*measured at center of beam																								
Footcandles*					431,0 fcd		107,8 fcd		47,9 fcd		26,9 fcd		17,2 fcd											
Beam width (meter)					0,9 m		1,8 m		2,8 m		3,7 m		4,6 m											
Beam width (Feet)					3 ft		6 ft		9,1 ft		12,1 ft		15,1 ft											
Beam intensities																								
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m					
4639lx	1160lx	515lx	290lx	186lx	129lx	95lx	72lx	57lx	46lx	38lx	32lx	27lx	24lx	21lx	18lx	16lx	14lx	13lx	12lx					
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					
431fcd	107,8fcd	47,9fcd	26,9fcd	17,2fcd	12fcd	8,8fcd	6,7fcd	5,3fcd	4,3fcd	3,6fcd	3fcd	2,6fcd	2,2fcd	1,9fcd	1,7fcd	1,5fcd	1,3fcd	1,2fcd	1,1fcd					
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°					
4639	4623	4618	4592	4544	4496	4269	4040	3754	3406	3058	2751	2445	2187	1984	1781	1586	1392	1160	883					
100%	100%	100%	99%	98%	97%	92%	87%	81%	73%	66%	59%	53%	47%	43%	38%	34%	30%	25%	19%					
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°					
4639	4656	4656	4637	4599	4562	4324	4083	3783	3419	3055	2739	2425	2164	1962	1761	1569	1378	1147	869					
100%	100%	100%	100%	99%	98%	93%	88%	82%	74%	66%	59%	52%	47%	42%	38%	34%	30%	25%	19%					
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°					
4639	4623	4618	4592	4544	4496	4269	4040	3754	3406	3058	2751	2445	2187	1984	1781	1586	1392	1160	883					
100%	100%	100%	99%	98%	97%	92%	87%	81%	73%	66%	59%	53%	47%	43%	38%	34%	30%	25%	19%					
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°					
4639	4656	4656	4637	4599	4562	4324	4083	3783	3419	3055	2739	2425	2164	1962	1761	1569	1378	1147	869					
100%	100%	100%	100%	99%	98%	93%	88%	82%	74%	66%	59%	52%	47%	42%	38%	34%	30%	25%	19%					
Beam angle 50%					Field angle 10%					Cutoff angle 2,5%					Intensity ratio in 120° cone					Intensity ratio in 90° cone				
49,5°					83,2°					97°					98,9%					96,2%				



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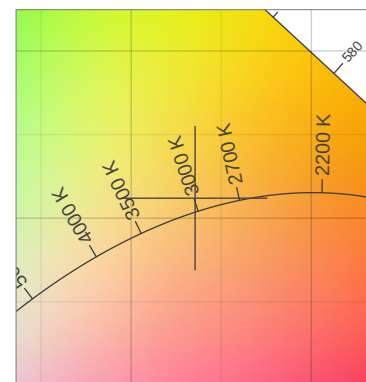
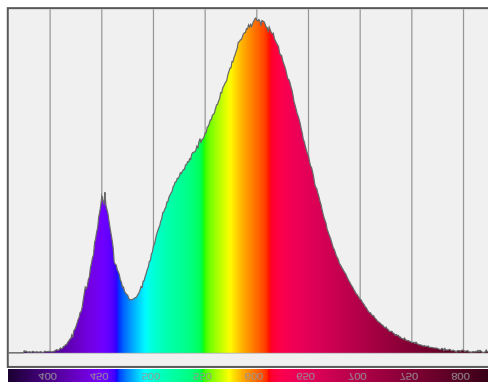
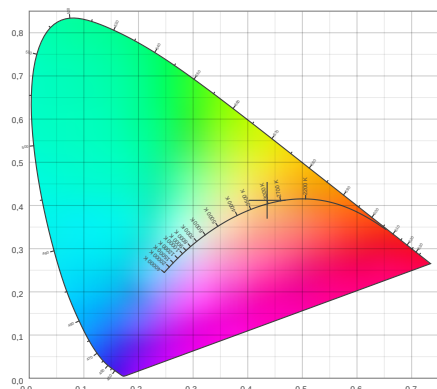
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Color details



CIE 1931

x: 0,435



Spectra

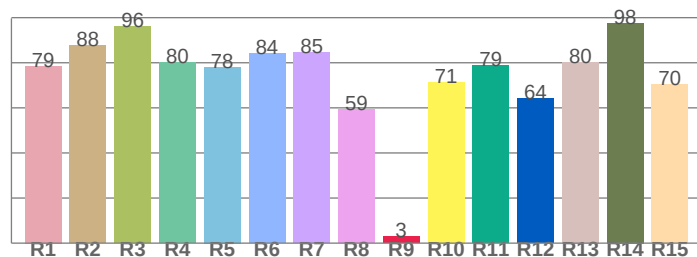
CIE 1931 ZOOM

3091 K

y: 0,412

Δuv : 0,0033

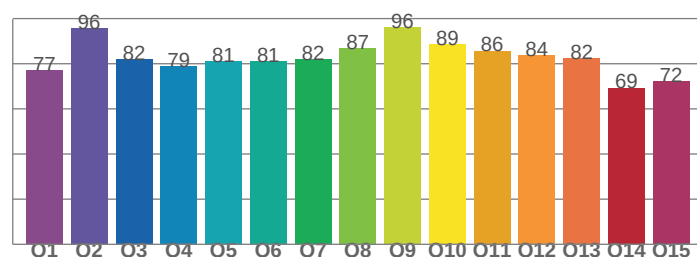
CRI: 81,1 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
78,5	87,5	96,1	80,1	78,1	84,2	84,7	59,3
R9	R10	R11	R12	R13	R14	R15	
2,9	71,5	78,7	64,2	80,3	97,7	70,3	

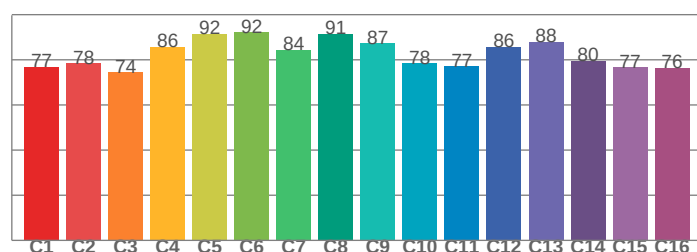
CQS: 81,3



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
77,1	95,8	81,8	78,9	81,2	81,1	82,2	86,9
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,1	88,5	85,8	83,6	82,3	69,4	72,1	

TM30: 82,5



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

C1	C2	C3	C4	C5	C6	C7	C8
76,8	78,3	74,4	85,6	91,5	92,1	84,5	91,3
C9	C10	C11	C12	C13	C14	C15	
87,2	78,3	77,0	85,6	87,9	79,6	76,7	

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
3091 K	81,1	2,9	82,5	95,6	81,3	0,435	0,412	0,246	0,349	0,0033



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TM30 details

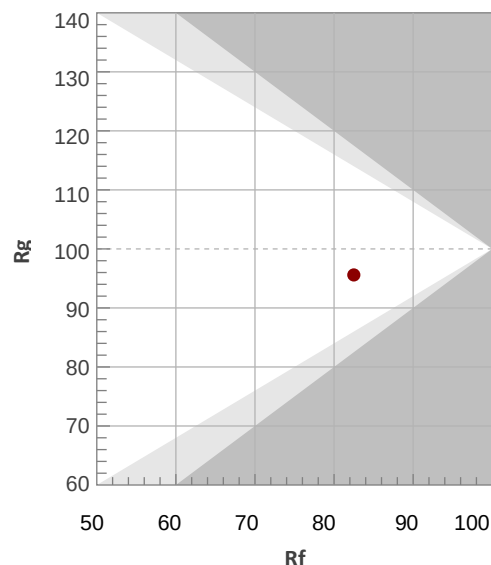
Rf 82,5

Fidelity index Rf

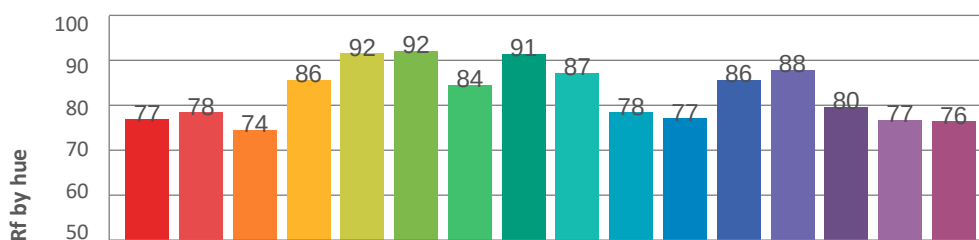
Rg 95,6

Gamut index Rg

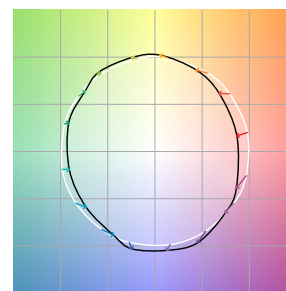
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	77	-12%	-1%
2	78	-9%	7%
3	74	-4%	11%
4	86	1%	8%
5	92	2%	5%
6	92	3%	-2%
7	84	-3%	-8%
8	91	-4%	-2%
9	87	-7%	2%
10	78	-7%	9%
11	77	-2%	14%
12	86	6%	4%
13	88	5%	-5%
14	80	6%	-14%
15	77	-2%	-13%
16	76	-8%	-15%



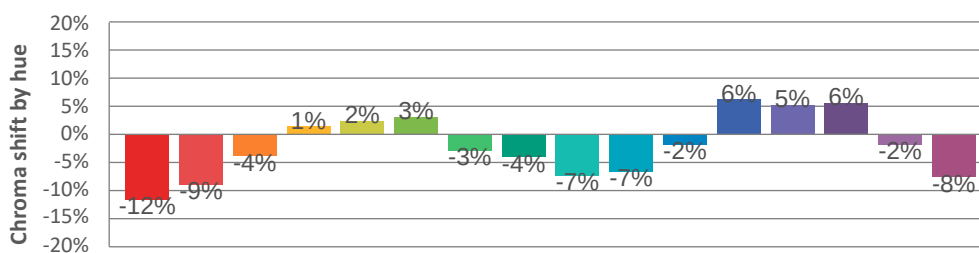
Hue binH



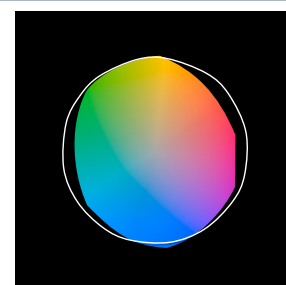
Color vector graphics



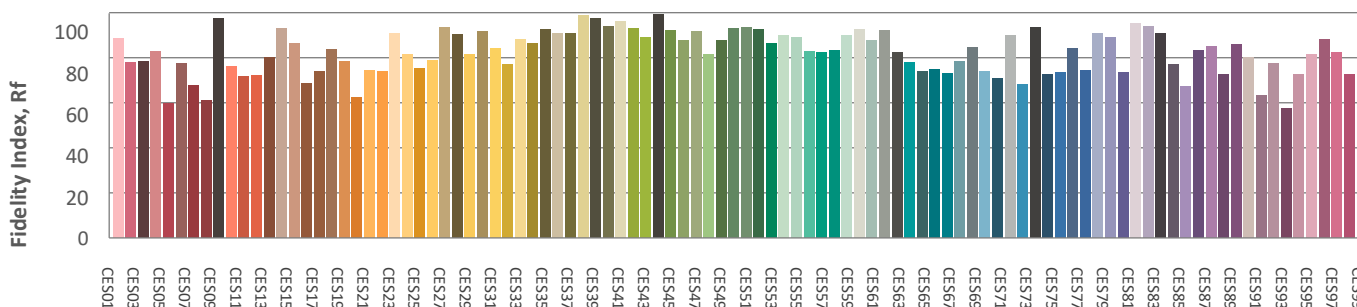
Hue bin



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	21,1	21,8	21,4	22,0	22,2	21,1	21,8	21,4	22,0	22,2
	3H	21,0	21,6	21,3	21,9	22,1	21,0	21,6	21,3	21,9	22,1
	4H	20,9	21,5	21,2	21,8	22,1	20,9	21,5	21,2	21,8	22,1
	6H	20,9	21,4	21,2	21,7	22,0	20,9	21,4	21,2	21,7	22,0
	8H	20,8	21,3	21,2	21,6	22,0	20,8	21,3	21,2	21,6	22,0
	12H	20,8	21,3	21,1	21,6	21,9	20,8	21,3	21,1	21,6	21,9
4H	2H	20,9	21,5	21,3	21,8	22,1	20,9	21,5	21,3	21,8	22,1
	3H	20,8	21,3	21,2	21,6	21,9	20,8	21,3	21,2	21,6	21,9
	4H	20,7	21,1	21,1	21,5	21,8	20,7	21,1	21,1	21,5	21,8
	6H	20,7	21,0	21,1	21,4	21,8	20,7	21,0	21,1	21,4	21,8
	8H	20,6	20,9	21,0	21,3	21,7	20,6	20,9	21,0	21,3	21,7
	12H	20,6	20,8	21,0	21,3	21,7	20,6	20,8	21,0	21,3	21,7
8H	4H	20,6	20,9	21,0	21,3	21,7	20,6	20,9	21,0	21,3	21,7
	6H	20,5	20,8	21,0	21,2	21,7	20,5	20,8	21,0	21,2	21,7
	8H	20,5	20,7	21,0	21,1	21,6	20,5	20,7	21,0	21,1	21,6
	12H	20,4	20,6	20,9	21,1	21,6	20,4	20,6	20,9	21,1	21,6
12H	4H	20,6	20,8	21,0	21,3	21,7	20,6	20,8	21,0	21,3	21,7
	6H	20,5	20,7	21,0	21,1	21,6	20,5	20,7	21,0	21,1	21,6
	8H	20,4	20,6	20,9	21,1	21,6	20,4	20,6	20,9	21,1	21,6
Variation of the observer position for the luminaire distance S											
S = 1,0H		+4,5 / -10,7					+4,5 / -10,7				
S = 1,5H		+7,2 / -13,8					+7,2 / -13,8				
S = 2,0H		+9,2 / -16,2					+9,2 / -16,2				
Standard table		BK00					BK00				
Correction summand		2,5					2,5				
Corrected glare indices referring to 3615lm total luminous flux											

