

LM-79

Test Report

LM79-RUBY-BRACKET-6-4000K-CRI80-SPOT

General Discription

Item number	RU-36-X-X-03-1-X	
Date and time	18-11-2016 15:28:50	
CCT (Kelvin)	3845 K	
Beam angle	18,8°	
Luminous flux	3134 lm	
Efficiency	109 lm/watt	
Weighted energy	28,9 kWh/1000h	
Power factor	0,99	
CRI (RA)	82,6	
Fidelity index Rf	Rf 82,7	
Gammut index Rg	Rg 97,9	
Peak	11928 cd	



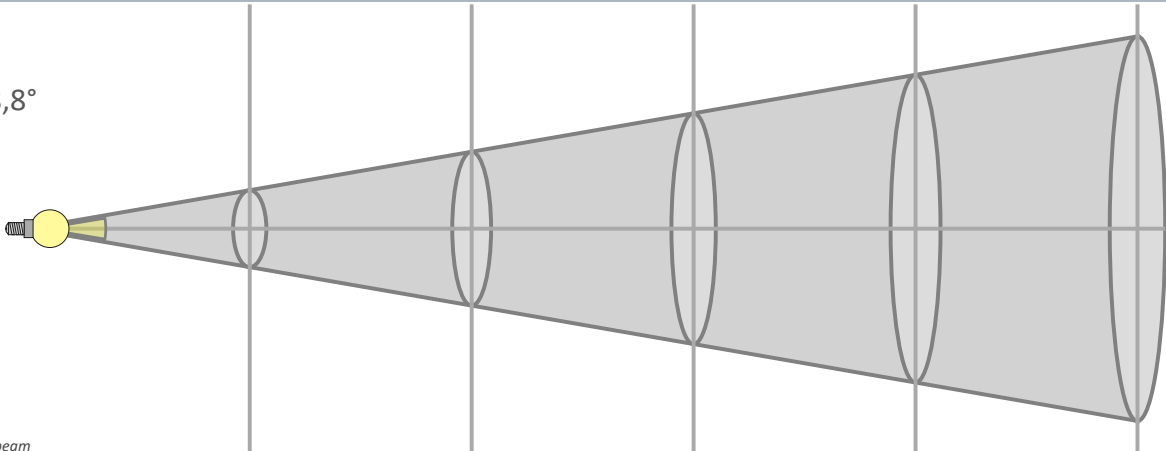
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Beam details					1m		2m		3m		4m		5m						
Lux*					11926 lx		2982 lx		1325 lx		745 lx		477 lx						
18,8° 																			
*measured at center of beam																			
Footcandles*					1108,0 fcd		277,0 fcd		123,1 fcd		69,2 fcd		44,3 fcd						
Beam width (meter)					0,3 m		0,7 m		1 m		1,3 m		1,7 m						
Beam width (Feet)					1,1 ft		2,2 ft		3,3 ft		4,3 ft		5,4 ft						
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
11926lx	2982lx	1325lx	745lx	477lx	331lx	243lx	186lx	147lx	119lx	99lx	83lx	71lx	61lx	53lx	47lx	41lx	37lx	33lx	30lx
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
1108fcd	277fcd	123,1fcd	69,2fcd	44,3fcd	30,8fcd	22,6fcd	17,3fcd	13,7fcd	11,1fcd	9,2fcd	7,7fcd	6,6fcd	5,7fcd	4,9fcd	4,3fcd	3,8fcd	3,4fcd	3,1fcd	2,8fcd
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°
11,9K	11,9K	11,9K	10,5K	7,8K	5,3K	4,2K	3,1K	2,4K	2,0K	1,7K	1,6K	1,4K	1,3K	1,3K	1,2K	1,1K	1,1K	1,0K	0,9K
100%	100%	100%	88%	66%	44%	35%	26%	20%	17%	14%	13%	12%	11%	10%	10%	10%	9%	8%	7%
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°
11,9K	11,9K	11,9K	10,5K	7,8K	5,3K	4,2K	3,0K	2,4K	2,0K	1,7K	1,6K	1,4K	1,3K	1,3K	1,2K	1,1K	1,1K	1,0K	0,9K
100%	100%	100%	88%	65%	44%	35%	26%	20%	17%	14%	13%	12%	11%	10%	10%	10%	9%	8%	7%
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°
11,9K	11,9K	11,9K	10,5K	7,8K	5,3K	4,2K	3,1K	2,4K	2,0K	1,7K	1,6K	1,4K	1,3K	1,3K	1,2K	1,1K	1,1K	1,0K	0,9K
100%	100%	100%	88%	66%	44%	35%	26%	20%	17%	14%	13%	12%	11%	10%	10%	10%	9%	8%	7%
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°
11,9K	11,9K	11,9K	10,5K	7,8K	5,3K	4,2K	3,0K	2,4K	2,0K	1,7K	1,6K	1,4K	1,3K	1,3K	1,2K	1,1K	1,1K	1,0K	0,9K
100%	100%	100%	88%	65%	44%	35%	26%	20%	17%	14%	13%	12%	11%	10%	10%	10%	9%	8%	7%
Beam angle 50%				Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone			
18,8°				59,6°				86,8°				99,4%				97,6%			



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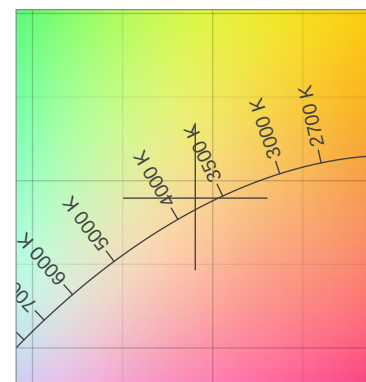
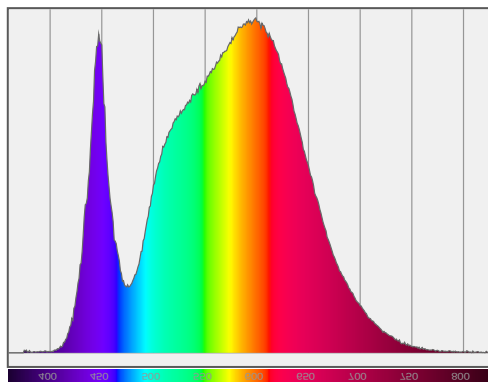
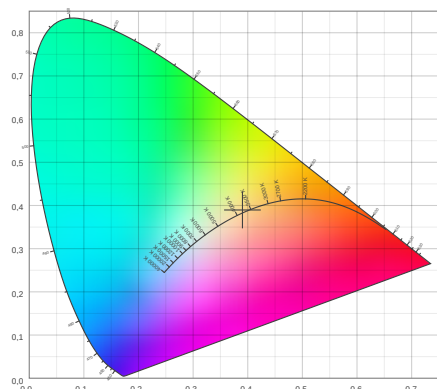
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Color details



CIE 1931

x: 0,390

3845 K

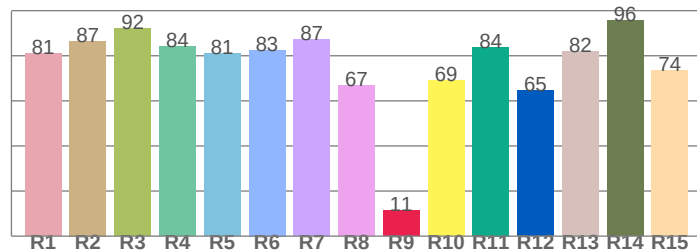
y: 0,390

Spectra

CIE 1931 ZOOM

Δuv : 0,0031

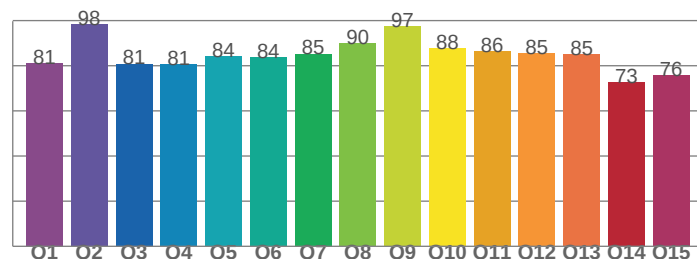
CRI: 82,6 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
80,9	86,5	92,2	84,0	81,0	82,6	87,1	66,7
R9	R10	R11	R12	R13	R14	R15	
11,3	69,1	83,9	64,7	81,8	95,5	73,5	

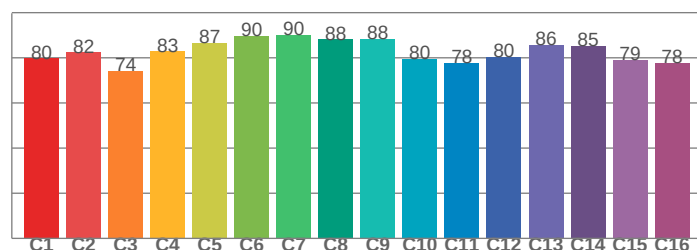
CQS: 83,5



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
81,1	98,3	80,9	80,6	84,0	83,7	85,3	89,9
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
97,3	87,8	86,3	85,4	84,9	72,6	75,6	

TM30: 82,7



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

C1	C2	C3	C4	C5	C6	C7	C8
79,7	82,4	74,2	82,8	86,6	89,7	90,3	88,2
C9	C10	C11	C12	C13	C14	C15	
88,5	79,6	77,8	80,3	85,8	85,2	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
3845 K	82,6	11,3	82,7	97,9	83,5	0,390	0,390	0,226	0,339	0,0031



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TM30 details

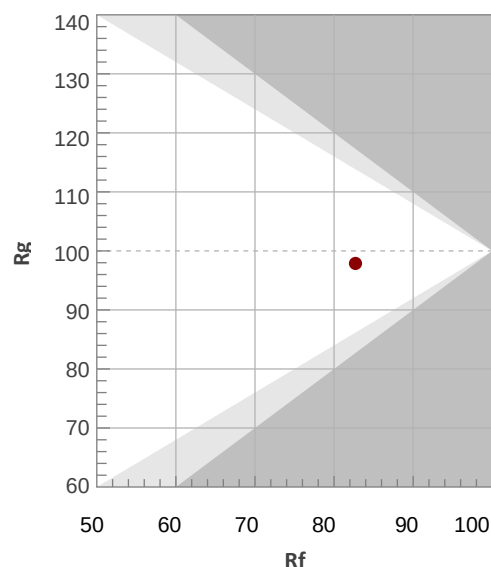
Rf 82,7

Fidelity index Rf

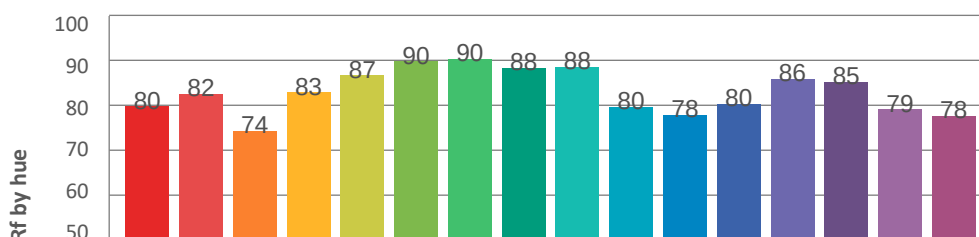
Rg 97,9

Gamut index Rg

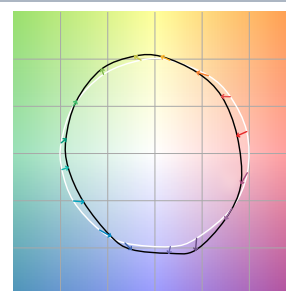
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	80	-11%	-2%
2	82	-7%	5%
3	74	-4%	12%
4	83	2%	9%
5	87	5%	6%
6	90	6%	-1%
7	90	0%	-6%
8	88	-4%	-5%
9	88	-7%	-1%
10	80	-8%	7%
11	78	-1%	13%
12	80	5%	8%
13	86	7%	-3%
14	85	10%	-8%
15	79	1%	-13%
16	78	-4%	-12%



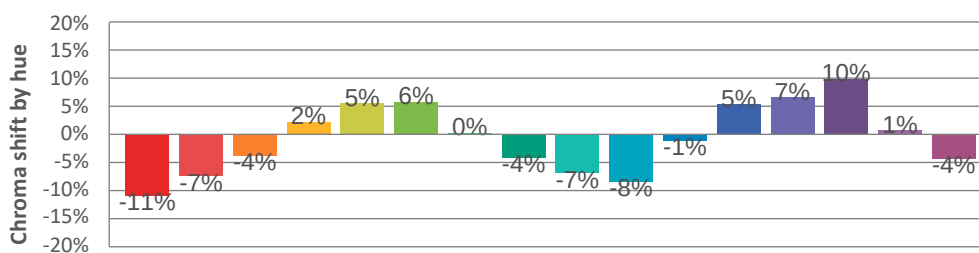
Hue binH



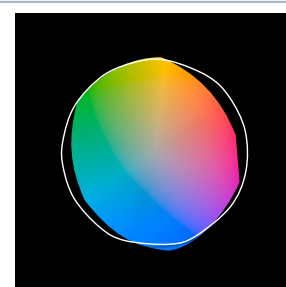
Color vector graphics



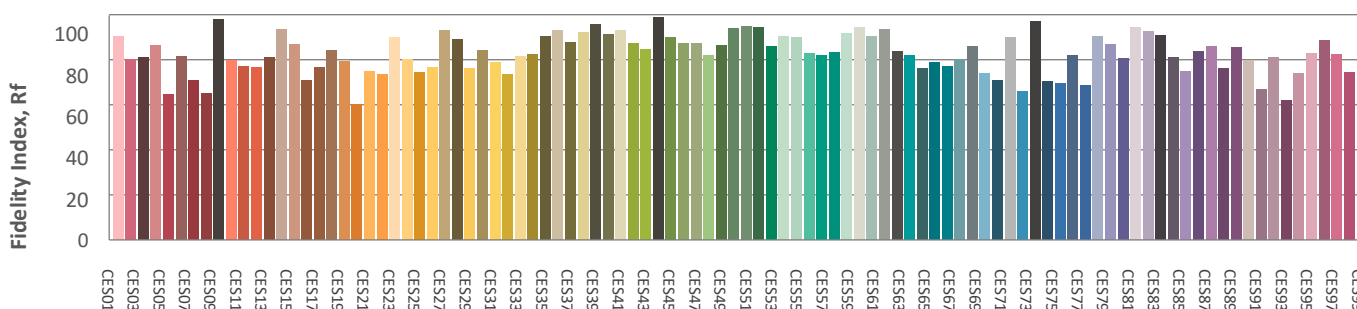
Hue bin



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	20,4	21,1	20,6	21,3	21,5	20,4	21,1	20,6	21,3	21,5
	3H	20,2	20,9	20,5	21,1	21,3	20,2	20,9	20,5	21,1	21,3
	4H	20,2	20,8	20,5	21,0	21,3	20,2	20,8	20,5	21,0	21,3
	6H	20,1	20,6	20,4	20,9	21,2	20,1	20,6	20,4	20,9	21,2
	8H	20,1	20,6	20,4	20,9	21,2	20,1	20,6	20,4	20,9	21,2
	12H	20,0	20,5	20,4	20,8	21,1	20,0	20,5	20,4	20,8	21,1
4H	2H	20,2	20,8	20,5	21,0	21,3	20,2	20,8	20,5	21,0	21,3
	3H	20,0	20,5	20,4	20,8	21,1	20,0	20,5	20,4	20,8	21,1
	4H	19,9	20,4	20,3	20,7	21,1	19,9	20,4	20,3	20,7	21,1
	6H	19,9	20,2	20,3	20,6	21,0	19,9	20,2	20,3	20,6	21,0
	8H	19,8	20,1	20,3	20,5	20,9	19,8	20,1	20,3	20,5	20,9
	12H	19,8	20,1	20,2	20,5	20,9	19,8	20,1	20,2	20,5	20,9
8H	4H	19,8	20,1	20,3	20,5	20,9	19,8	20,1	20,3	20,5	20,9
	6H	19,7	20,0	20,2	20,4	20,9	19,7	20,0	20,2	20,4	20,9
	8H	19,7	19,9	20,2	20,3	20,8	19,7	19,9	20,2	20,3	20,8
	12H	19,7	19,8	20,1	20,3	20,8	19,7	19,8	20,1	20,3	20,8
12H	4H	19,8	20,1	20,2	20,5	20,9	19,8	20,1	20,2	20,5	20,9
	6H	19,7	19,9	20,2	20,3	20,8	19,7	19,9	20,2	20,3	20,8
	8H	19,6	19,8	20,1	20,3	20,8	19,6	19,8	20,1	20,3	20,8

Variation of the observer position for the luminaire distance S

S = 1,0H	+3,8 / -16,5	+3,8 / -16,5
S = 1,5H	+6,4 / -19,0	+6,4 / -19,0
S = 2,0H	+8,4 / -20,0	+8,4 / -20,0
Standard table	BK00	BK00
Correction summand	1,7	1,7

Corrected glare indices referring to 3134lm total luminous flux

