

LM-79

Test Report

LM79-RUBY-BRACKET-7-4000K-CRI80-FLOOD

General Discription

Item number	RU-37-X-X-03-3-X	
Date and time	18-11-2016 16:30:15	
CCT (Kelvin)	3908 K	
Beam angle	63,8°	
Luminous flux	3977 lm	
Efficiency	96 lm/watt	
Weighted energy	41,6 kWh/1000h	
Power factor	0,95	
CRI (RA)	82,1	
Fidelity index Rf	Rf 82,3	
Gammut index Rg	Rg 97,5	
Peak	4080 cd	



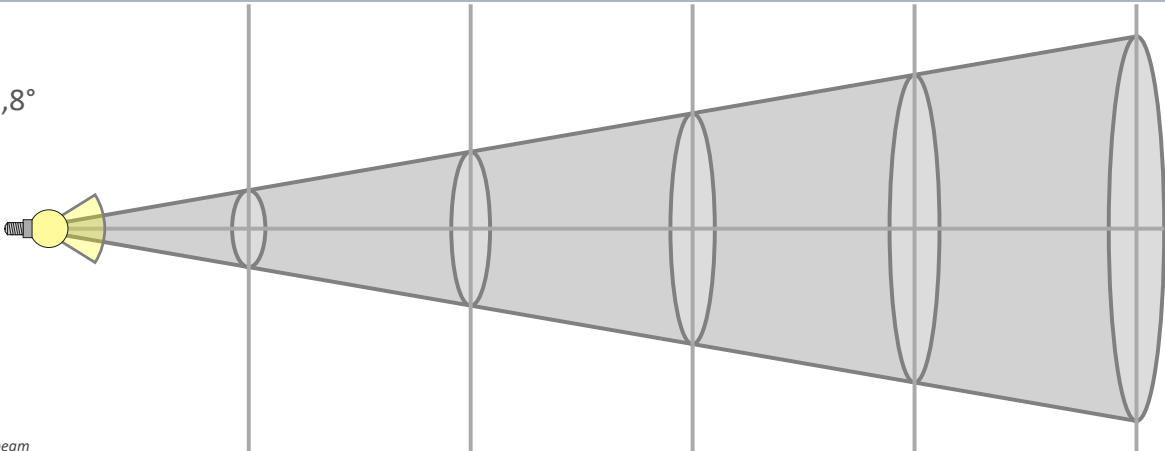
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Beam details		1m		2m		3m		4m		5m									
Lux*		4058 lx		1015 lx		451 lx		254 lx		162 lx									
63,8° 																			
*measured at center of beam																			
Footcandles*		377,0 fcd		94,3 fcd		41,9 fcd		23,6 fcd		15,1 fcd									
Beam width (meter)		1,2 m		2,5 m		3,7 m		5 m		6,2 m									
Beam width (Feet)		4,1 ft		8,2 ft		12,3 ft		16,3 ft		20,4 ft									
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
4058lx	1015lx	451lx	254lx	162lx	113lx	83lx	63lx	50lx	41lx	34lx	28lx	24lx	21lx	18lx	16lx	14lx	13lx	11lx	10lx
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
377fcd	94,3fcd	41,9fcd	23,6fcd	15,1fcd	10,5fcd	7,7fcd	5,9fcd	4,7fcd	3,8fcd	3,1fcd	2,6fcd	2,2fcd	1,9fcd	1,7fcd	1,5fcd	1,3fcd	1,2fcd	1fcd	0,9fcd
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°
4058	4080	4034	3976	3897	3776	3655	3483	3306	3145	3003	2861	2726	2591	2431	2255	2054	1717	1381	1080
100%	101%	99%	98%	96%	93%	90%	86%	81%	77%	74%	70%	67%	64%	60%	56%	51%	42%	34%	27%
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°
4058	4037	4037	3994	3919	3833	3674	3516	3341	3160	2989	2849	2710	2565	2419	2234	1981	1729	1389	1043
100%	99%	99%	98%	97%	94%	91%	87%	82%	78%	74%	70%	67%	63%	60%	55%	49%	43%	34%	26%
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°
4058	4080	4034	3976	3897	3776	3655	3483	3306	3145	3003	2861	2726	2591	2431	2255	2054	1717	1381	1080
100%	101%	99%	98%	96%	93%	90%	86%	81%	77%	74%	70%	67%	64%	60%	56%	51%	42%	34%	27%
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°
4058	4037	4037	3994	3919	3833	3674	3516	3341	3160	2989	2849	2710	2565	2419	2234	1981	1729	1389	1043
100%	99%	99%	98%	97%	94%	91%	87%	82%	78%	74%	70%	67%	63%	60%	55%	49%	43%	34%	26%
Beam angle 50%				Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone			
63,8°				88,6°				112,6°				98,1%				92,7%			



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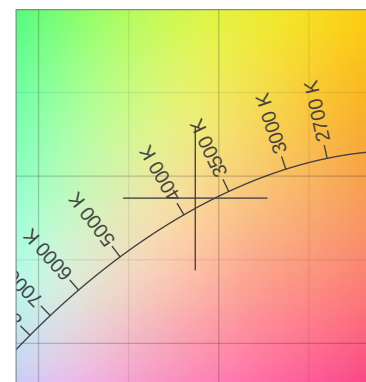
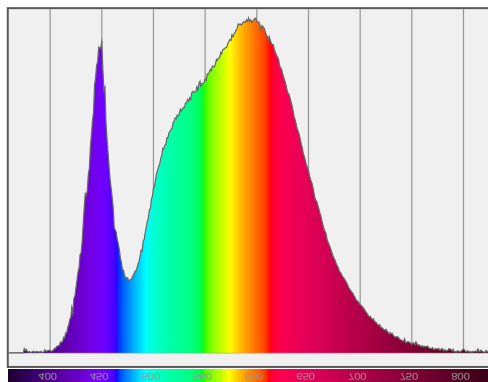
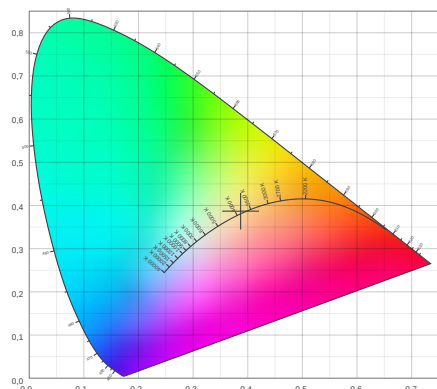
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Color details



CIE 1931

x: 0,387

3908 K

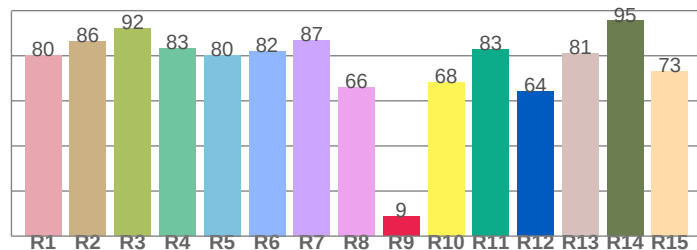
y: 0,387

Spectra

CIE 1931 ZOOM

Δuv : 0,0028

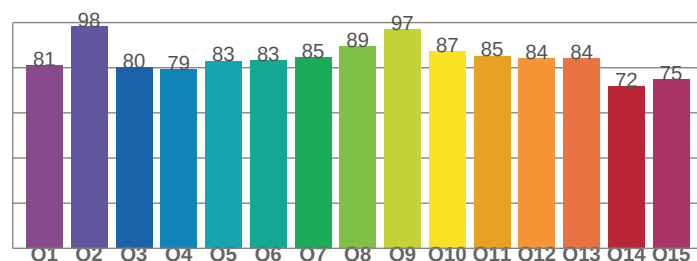
CRI: 82,1 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
80,2	86,3	92,1	83,2	80,3	82,1	86,8	65,8
R9	R10	R11	R12	R13	R14	R15	
8,7	68,3	82,7	64,0	81,2	95,5	72,9	

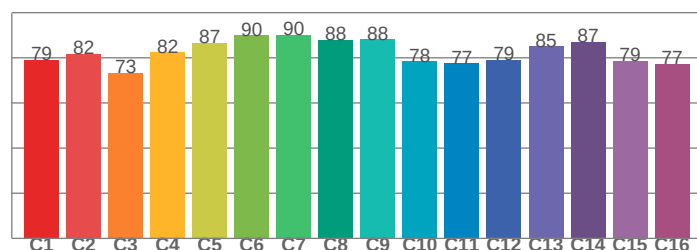
CQS: 82,8



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
80,9	98,2	80,1	79,3	83,1	83,1	84,7	89,4
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
97,1	87,2	85,3	84,4	84,0	71,7	75,0	

TM30: 82,3



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

C1	C2	C3	C4	C5	C6	C7	C8
79,1	81,6	73,4	82,4	86,6	89,9	90,1	87,9
C9	C10	C11	C12	C13	C14	C15	
88,1	78,4	77,5	79,0	85,0	86,9	78,7	

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
3908 K	82,1	8,7	82,3	97,5	82,8	0,387	0,387	0,225	0,338	0,0028



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TM30 details

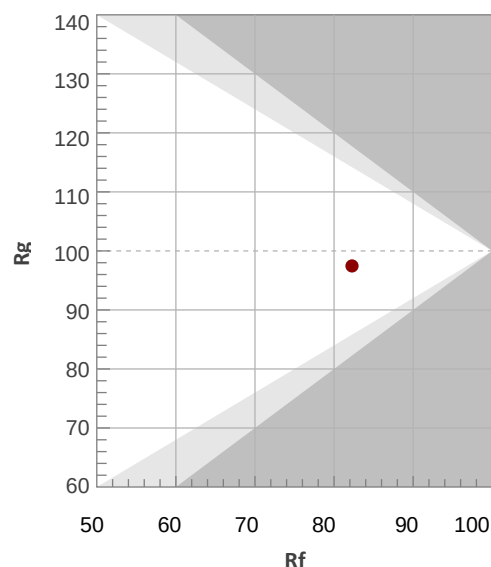
Rf 82,3

Fidelity index Rf

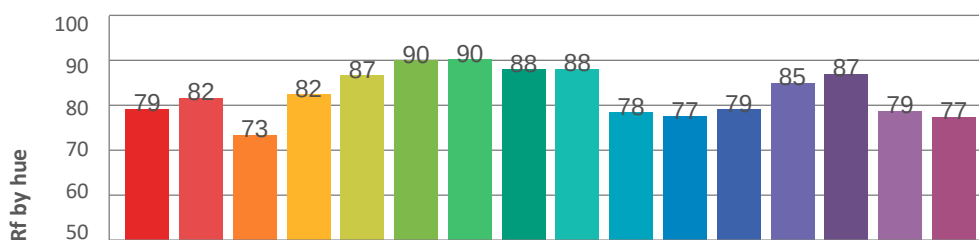
Rg 97,5

Gamut index Rg

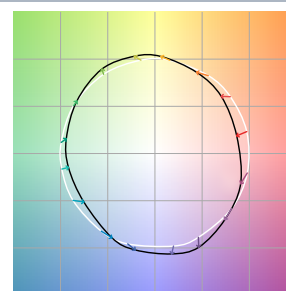
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	79	-11%	-2%
2	82	-8%	6%
3	73	-4%	12%
4	82	2%	10%
5	87	5%	6%
6	90	6%	-2%
7	90	0%	-6%
8	88	-5%	-5%
9	88	-7%	0%
10	78	-9%	8%
11	77	0%	13%
12	79	5%	9%
13	85	8%	-4%
14	87	9%	-6%
15	79	1%	-14%
16	77	-5%	-12%



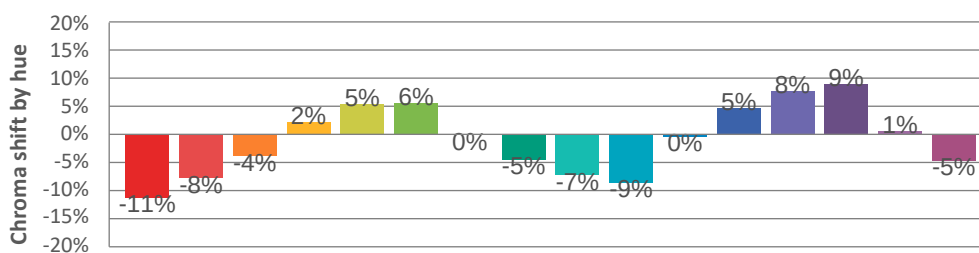
Hue binH



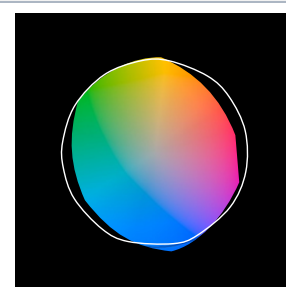
Color vector graphics



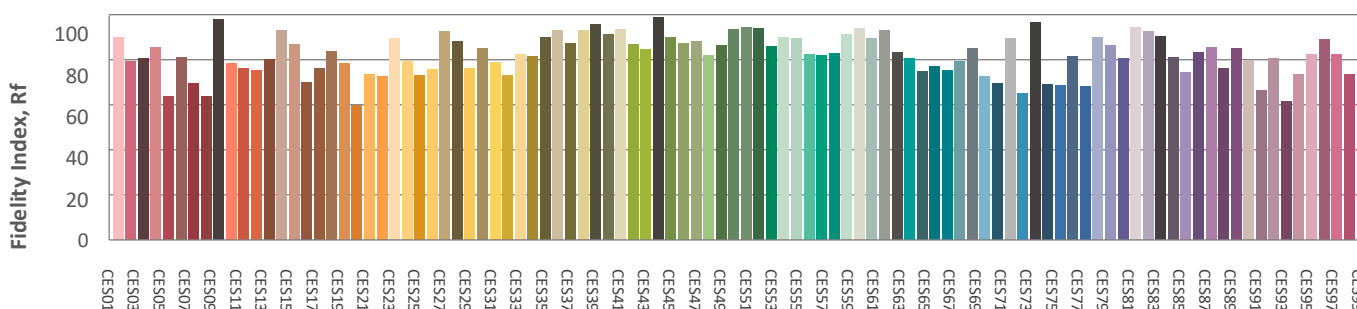
Hue bin



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	22,9	23,6	23,1	23,8	24,0	22,9	23,6	23,1	23,8	24,0
	3H	22,8	23,5	23,1	23,7	23,9	22,8	23,5	23,1	23,7	23,9
	4H	22,7	23,3	23,0	23,6	23,9	22,7	23,3	23,0	23,6	23,9
	6H	22,6	23,2	23,0	23,5	23,8	22,6	23,2	23,0	23,5	23,8
	8H	22,6	23,2	22,9	23,5	23,8	22,6	23,2	22,9	23,5	23,8
	12H	22,6	23,1	22,9	23,4	23,7	22,6	23,1	22,9	23,4	23,7
4H	2H	22,7	23,4	23,0	23,6	23,9	22,7	23,4	23,0	23,6	23,9
	3H	22,6	23,2	23,0	23,5	23,8	22,6	23,2	23,0	23,5	23,8
	4H	22,6	23,0	23,0	23,4	23,7	22,6	23,0	23,0	23,4	23,7
	6H	22,5	22,9	22,9	23,3	23,7	22,5	22,9	22,9	23,3	23,7
	8H	22,5	22,8	22,9	23,2	23,6	22,5	22,8	22,9	23,2	23,6
	12H	22,4	22,7	22,9	23,1	23,6	22,4	22,7	22,9	23,1	23,6
8H	4H	22,5	22,8	22,9	23,2	23,6	22,5	22,8	22,9	23,2	23,6
	6H	22,4	22,6	22,8	23,1	23,5	22,4	22,6	22,8	23,1	23,5
	8H	22,3	22,6	22,8	23,0	23,5	22,3	22,6	22,8	23,0	23,5
	12H	22,3	22,5	22,8	22,9	23,5	22,3	22,5	22,8	22,9	23,5
12H	4H	22,4	22,7	22,9	23,1	23,6	22,4	22,7	22,9	23,1	23,6
	6H	22,3	22,6	22,8	23,0	23,5	22,3	22,6	22,8	23,0	23,5
	8H	22,3	22,5	22,8	22,9	23,5	22,3	22,5	22,8	22,9	23,5
Variation of the observer position for the luminaire distance S											
S = 1,0H		+4,1 / -6,0					+4,1 / -6,0				
S = 1,5H		+6,8 / -8,3					+6,8 / -8,3				
S = 2,0H		+8,8 / -11,0					+8,8 / -11,0				
Standard table		BK00					BK00				
Correction summand		4,3					4,3				
Corrected glare indices referring to 3977lm total luminous flux											



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