

LM-79

Test Report

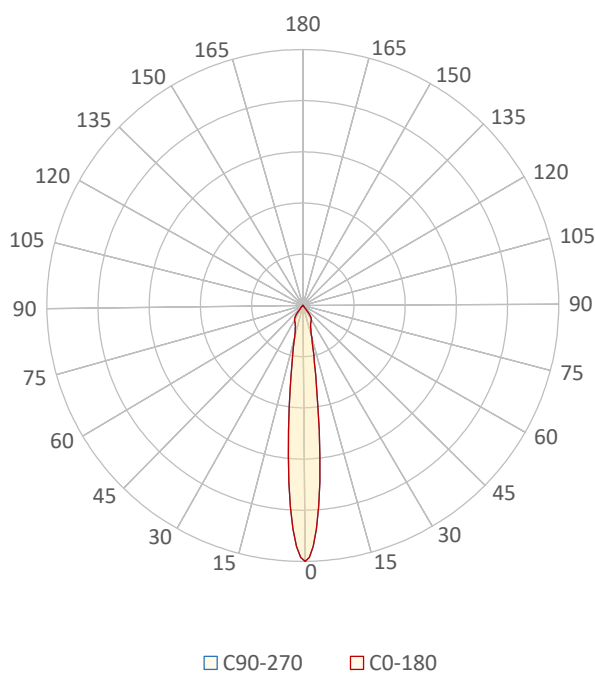
LM79-RUBY-BRACKET-8-3000K-CRI80-SPOT

General Discription

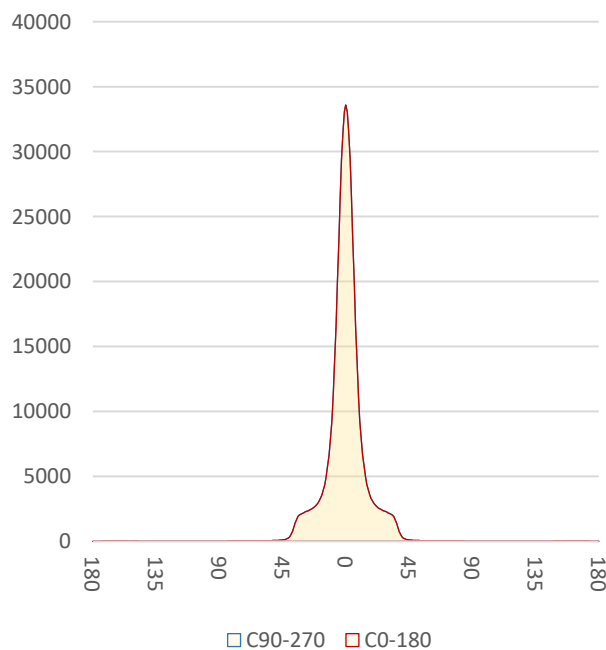
Item number	RU-38-X-X-02-1-X
Date and time	3-4-2019 14:19:01
CCT (Kelvin)	3039 K
Beam angle	13,8°
Luminous flux	5311 lm
Efficiency	91 lm/watt
Weighted energy	58,1 kWh/1000h
Power factor	0,98
CRI (RA)	82,5
Fidelity index Rf	Rf 83,9
Gammut index Rg	Rg 95,2
Peak	33590 cd



Polar diagram



Cartesian diagram



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Beam details	1m	2m	3m	4m	5m
Lux*	33590 lx	8397 lx	3732 lx	2099 lx	1344 lx

*measured at center of beam

Footcandles*	3120,6 fcd	780,2 fcd	346,7 fcd	195,0 fcd	124,8 fcd
Beam width (meter)	0,2 m	0,5 m	0,7 m	1 m	1,2 m
Beam width (Feet)	0,8 ft	1,6 ft	2,4 ft	3,2 ft	4 ft

Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
33590lx	8397lx	3732lx	2099lx	1344lx	933lx	686lx	525lx	415lx	336lx	278lx	233lx	199lx	171lx	149lx	131lx	116lx	104lx	93lx	84lx
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
3120,6fcd	780,2fcd	346,7fcd	195fcd	124,8fcd	86,7fcd	63,7fcd	48,8fcd	38,5fcd	31,2fcd	25,8fcd	21,7fcd	18,5fcd	15,9fcd	13,9fcd	12,2fcd	10,8fcd	9,6fcd	8,6fcd	7,8fcd

Intensities in 0° c-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
33,6K	33,1K	31,7K	29,4K	26,5K	23,3K	19,8K	16,5K	13,6K	11,2K	9,3K	7,8K	6,6K	5,7K	5,0K	4,4K	3,9K	3,6K	3,3K	3,1K
100%	98%	94%	88%	79%	69%	59%	49%	41%	33%	28%	23%	20%	17%	15%	13%	12%	11%	10%	9%

Intensities in 90° c-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
33,6K	33,1K	31,7K	29,4K	26,5K	23,3K	19,8K	16,5K	13,6K	11,2K	9,3K	7,8K	6,6K	5,7K	5,0K	4,4K	3,9K	3,6K	3,3K	3,1K
100%	98%	94%	88%	79%	69%	59%	49%	41%	33%	28%	23%	20%	17%	15%	13%	12%	11%	10%	9%

Intensities in 180° c-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
33,6K	33,1K	31,7K	29,4K	26,5K	23,3K	19,8K	16,5K	13,6K	11,2K	9,3K	7,8K	6,6K	5,7K	5,0K	4,4K	3,9K	3,6K	3,3K	3,1K
100%	98%	94%	88%	79%	69%	59%	49%	41%	33%	28%	23%	20%	17%	15%	13%	12%	11%	10%	9%

Intensities in 270° c-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
33,6K	33,1K	31,7K	29,4K	26,5K	23,3K	19,8K	16,5K	13,6K	11,2K	9,3K	7,8K	6,6K	5,7K	5,0K	4,4K	3,9K	3,6K	3,3K	3,1K
100%	98%	94%	88%	79%	69%	59%	49%	41%	33%	28%	23%	20%	17%	15%	13%	12%	11%	10%	9%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
13,8°	35,6°	75,5°	98,4%	96,9%



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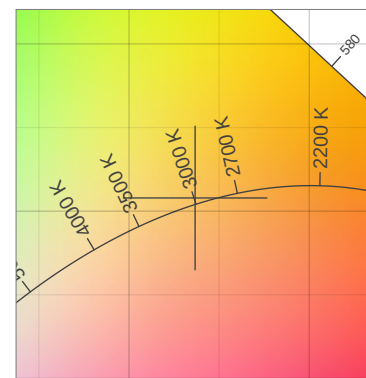
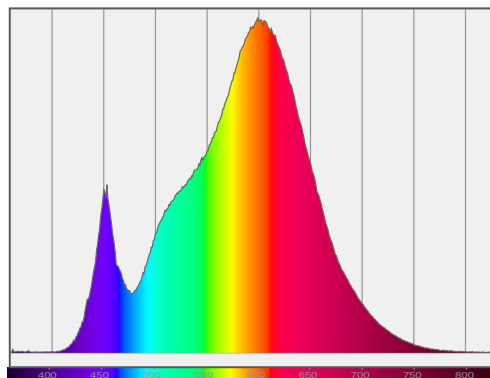
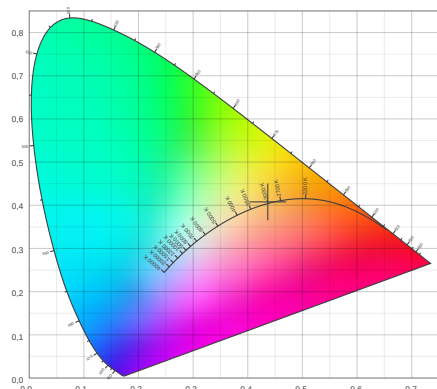
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Color details



CIE 1931

x: 0,437



Spectra

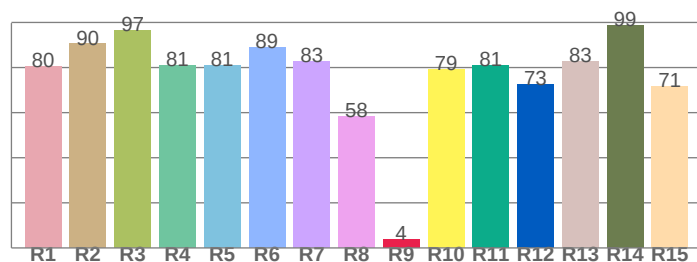
CIE 1931 ZOOM

3039 K

y: 0,408

Δuv : 0,0016

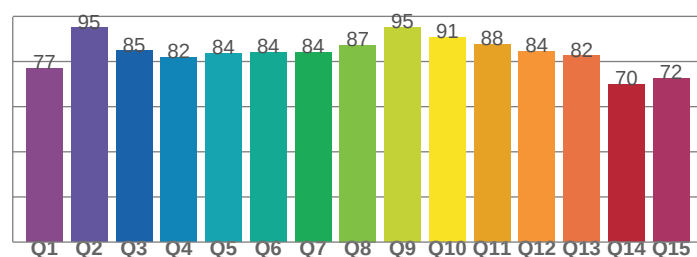
CRI: 82,5 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
80,4	90,5	96,7	81,1	80,8	89,1	82,9	58,2
R9	R10	R11	R12	R13	R14	R15	
3,8	79,1	81,1	72,5	82,8	98,7	71,5	

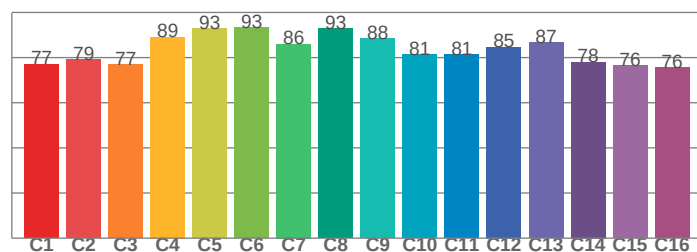
CQS: 82,4



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
77,0	94,9	84,7	81,8	83,7	83,9	84,0	87,3
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
95,1	90,6	87,5	84,4	82,5	69,9	72,4	

TM30: 83,9



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

C1	C2	C3	C4	C5	C6	C7	C8
77,1	79,1	76,9	89,1	92,9	93,4	86,1	92,8
C9	C10	C11	C12	C13	C14	C15	
88,4	81,4	81,4	84,8	86,8	78,1	76,5	

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
3039 K	82,5	3,8	83,9	95,2	82,4	0,437	0,408	0,249	0,349	0,0016



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TM30 details

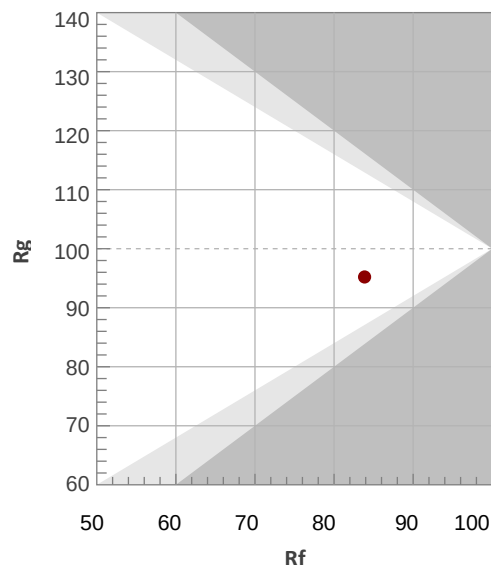
Rf 83,9

Fidelity index Rf

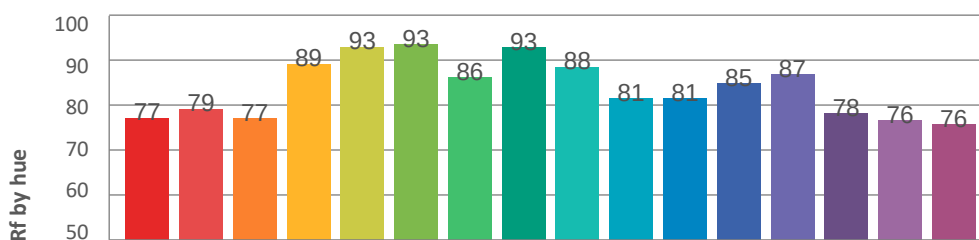
Rg 95,2

Gamut index Rg

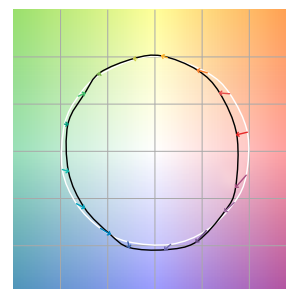
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	77	-12%	0%
2	79	-8%	7%
3	77	-3%	10%
4	89	1%	6%
5	93	1%	3%
6	93	2%	-2%
7	86	-4%	-6%
8	93	-3%	-1%
9	88	-6%	3%
10	81	-5%	8%
11	81	0%	12%
12	85	6%	3%
13	87	4%	-7%
14	78	4%	-16%
15	76	-3%	-13%
16	76	-9%	-15%



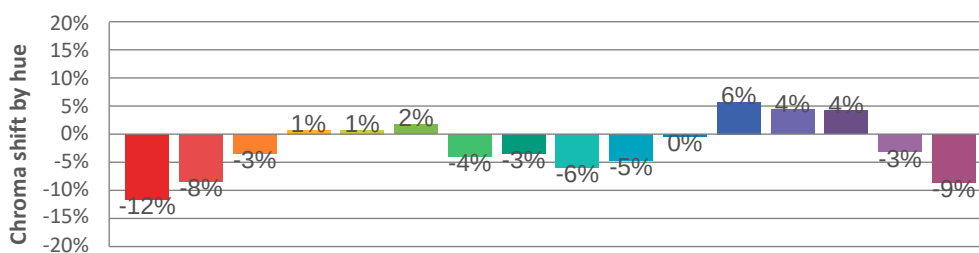
Hue binH



Color vector graphics



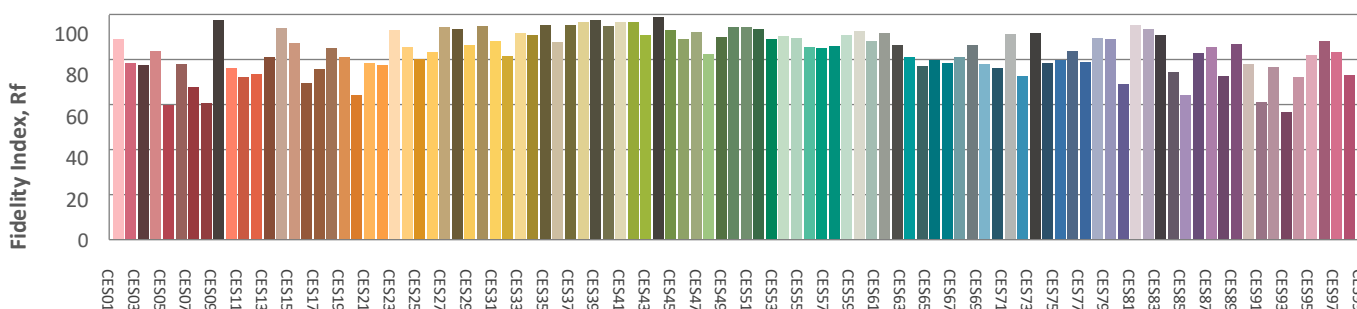
Hue bin



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	20,8	21,4	21,0	21,6	21,8	20,8	21,4	21,0	21,6	21,8
	3H	20,7	21,3	21,0	21,6	21,8	20,7	21,3	21,0	21,6	21,8
	4H	20,7	21,3	21,0	21,5	21,8	20,7	21,3	21,0	21,5	21,8
	6H	20,7	21,2	21,1	21,5	21,8	20,7	21,2	21,1	21,5	21,8
	8H	20,7	21,2	21,1	21,5	21,8	20,7	21,2	21,1	21,5	21,8
	12H	20,7	21,2	21,1	21,5	21,8	20,7	21,2	21,1	21,5	21,8
4H	2H	20,6	21,2	20,9	21,4	21,7	20,6	21,2	20,9	21,4	21,7
	3H	20,6	21,1	20,9	21,4	21,7	20,6	21,1	20,9	21,4	21,7
	4H	20,6	21,0	21,0	21,4	21,7	20,6	21,0	21,0	21,4	21,7
	6H	20,7	21,0	21,1	21,4	21,8	20,7	21,0	21,1	21,4	21,8
	8H	20,7	21,0	21,2	21,4	21,8	20,7	21,0	21,2	21,4	21,8
	12H	20,8	21,0	21,2	21,4	21,9	20,8	21,0	21,2	21,4	21,9
8H	4H	20,6	20,9	21,0	21,3	21,7	20,6	20,9	21,0	21,3	21,7
	6H	20,7	20,9	21,1	21,3	21,8	20,7	20,9	21,1	21,3	21,8
	8H	20,8	21,0	21,2	21,4	21,9	20,8	21,0	21,2	21,4	21,9
	12H	20,8	21,0	21,3	21,4	21,9	20,8	21,0	21,3	21,4	21,9
12H	4H	20,6	20,8	21,0	21,2	21,6	20,6	20,8	21,0	21,2	21,6
	6H	20,7	20,9	21,1	21,3	21,8	20,7	20,9	21,1	21,3	21,8
	8H	20,8	20,9	21,3	21,4	21,9	20,8	20,9	21,3	21,4	21,9
Variation of the observer position for the luminaire distance S											
S = 1,0H		+4,9 / -4,9					+4,9 / -4,9				
S = 1,5H		+7,6 / -5,2					+7,6 / -5,2				
S = 2,0H		+9,6 / -5,7					+9,6 / -5,7				
Standard table		BK01					BK01				
Correction summand		2,7					2,7				
Corrected glare indices referring to 5311lm total luminous flux											



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