

LM-79

Test Report

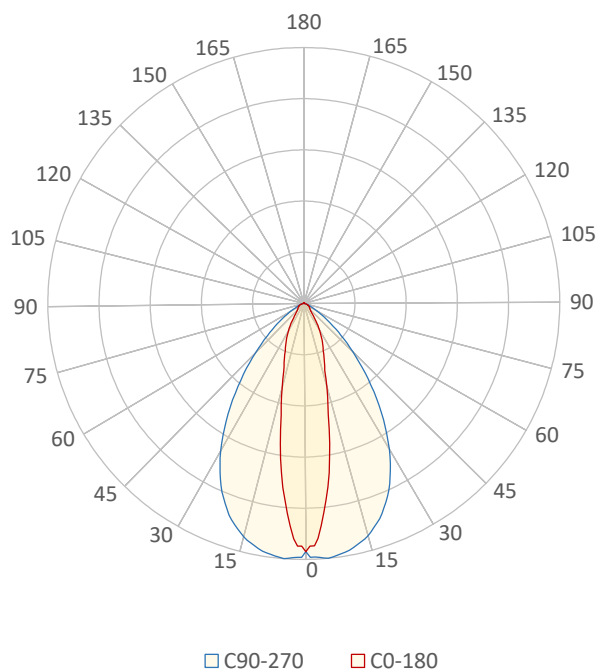
LM79-JADE-EXPO-2700K-CRI90-SPOT+ 55x22° beamshaper

General Description

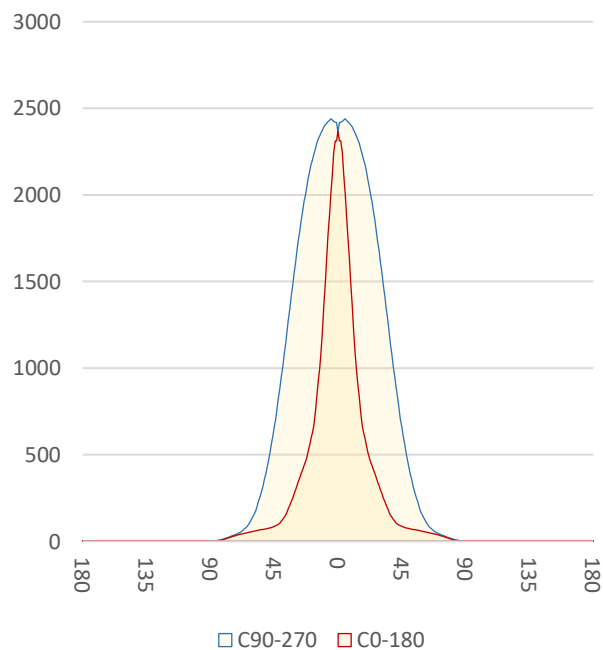
Item number	J-EX-X-3-1-27-90-1
Date and time	16-10-2017 13:32:46
CCT (Kelvin)	2770 K
Beam angle	47,3°
Luminous flux	2172 lm
Efficiency	79 lm/watt
Weighted energy	27,3 kWh/1000h
Power factor	0,93
CRI (RA)	93,0
Fidelity index Rf	Rf 91,5
Gammut index Rg	Rg 101,0
Peak	2440 cd



Polar diagram



Cartesian diagram



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Beam details	1m	2m	3m	4m	5m																			
Lux*	2366 lx	591 lx	263 lx	148 lx	95 lx																			
*measured at center of beam																								
Footcandles*	219,8 fcd	55,0 fcd	24,4 fcd	13,7 fcd	8,8 fcd																			
Beam width (meter)	0,9 m	1,8 m	2,6 m	3,5 m	4,4 m																			
Beam width (Feet)	2,9 ft	5,8 ft	8,6 ft	11,5 ft	14,4 ft																			
Beam intensities																								
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m					
2366lx	591lx	263lx	148lx	95lx	66lx	48lx	37lx	29lx	24lx	20lx	16lx	14lx	12lx	11lx	9lx	8lx	7lx	7lx	6lx					
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					
219,8fcd	55fcd	24,4fcd	13,7fcd	8,8fcd	6,1fcd	4,5fcd	3,4fcd	2,7fcd	2,2fcd	1,8fcd	1,5fcd	1,3fcd	1,1fcd	1fcd	0,9fcd	0,8fcd	0,7fcd	0,6fcd	0,5fcd					
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°					
2366	2312	2125	1885	1633	1359	1085	912	751	629	556	483	437	391	344	296	250	209	167	139					
100%	98%	90%	80%	69%	57%	46%	39%	32%	27%	23%	20%	18%	17%	15%	13%	11%	9%	7%	6%					
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°					
2366	2420	2433	2431	2413	2394	2357	2321	2267	2206	2137	2048	1959	1849	1733	1611	1478	1344	1210	1075					
100%	102%	103%	103%	102%	101%	100%	98%	96%	93%	90%	87%	83%	78%	73%	68%	62%	57%	51%	45%					
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°					
2366	2312	2125	1885	1633	1359	1085	912	751	629	556	483	437	391	344	296	250	209	167	139					
100%	98%	90%	80%	69%	57%	46%	39%	32%	27%	23%	20%	18%	17%	15%	13%	11%	9%	7%	6%					
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°					
2366	2420	2433	2431	2413	2394	2357	2321	2267	2206	2137	2048	1959	1849	1733	1611	1478	1344	1210	1075					
100%	102%	103%	103%	102%	101%	100%	98%	96%	93%	90%	87%	83%	78%	73%	68%	62%	57%	51%	45%					
Beam angle 50%					Field angle 10%					Cutoff angle 2,5%					Intensity ratio in 120° cone					Intensity ratio in 90° cone				
47,3°					88,4°					127,2°					94,8%					82,3%				



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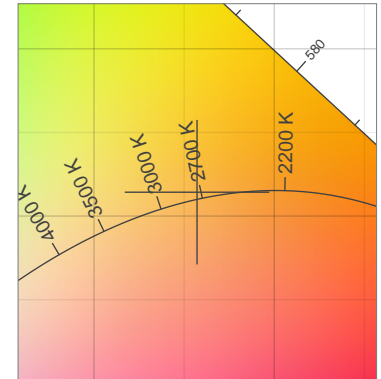
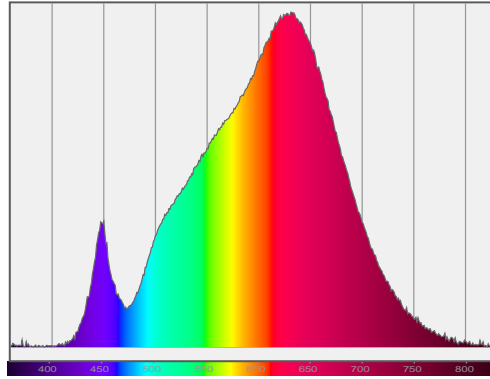
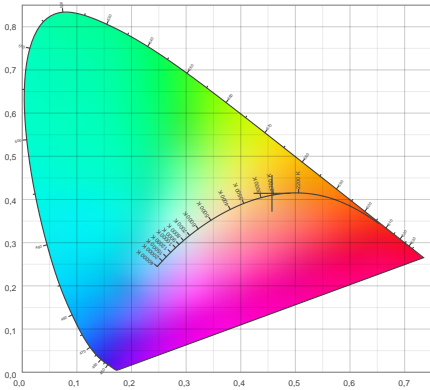
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Color details



CIE 1931

x: 0,457



Spectra

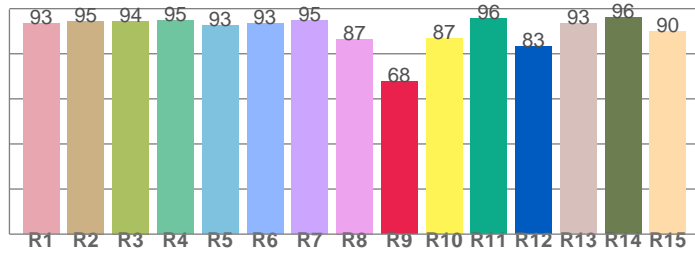
CIE 1931 ZOOM

2770 K

y: 0,414

Δuv : 0,0016

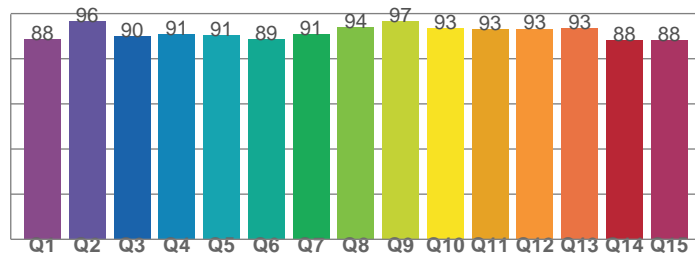
CRI: 93,0 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
93,4	94,6	94,5	94,6	92,6	93,4	94,7	86,5
R9	R10	R11	R12	R13	R14	R15	
67,6	86,7	95,6	83,2	93,3	96,1	90,1	

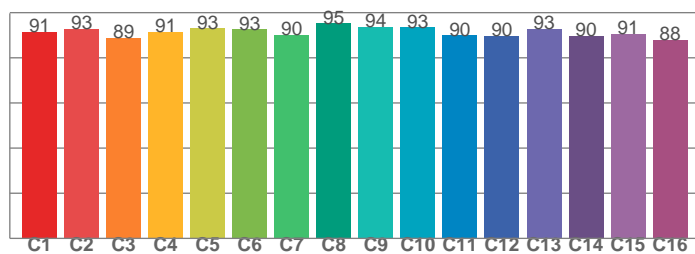
CQS: 91,1



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
88,4	96,4	89,8	90,8	90,5	88,7	90,7	93,9
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,6	93,4	93,1	93,3	93,4	88,2	88,2	

TM30: 91,5



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

C1	C2	C3	C4	C5	C6	C7	C8
91,4	92,8	88,9	91,3	93,0	92,6	90,1	95,2
C9	C10	C11	C12	C13	C14	C15	
93,6	93,4	89,9	89,7	92,6	89,6	90,6	

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
2770 K	93,0	67,6	91,5	101,0	91,1	0,457	0,414	0,259	0,352	0,0016



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TM30 details

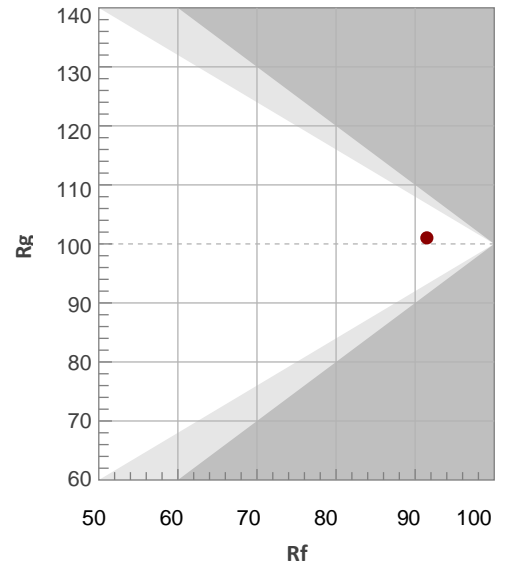
Rf 91,5

Fidelity index Rf

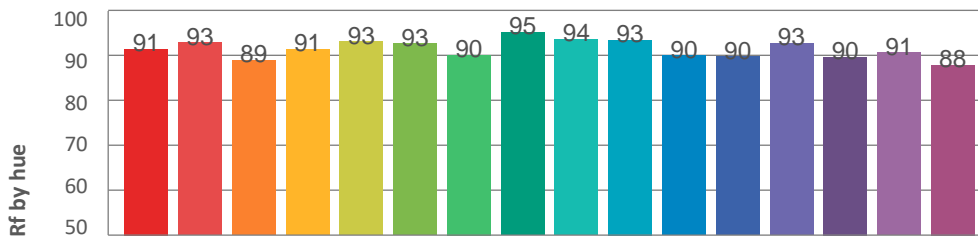
Rg 101,0

Gamut index Rg

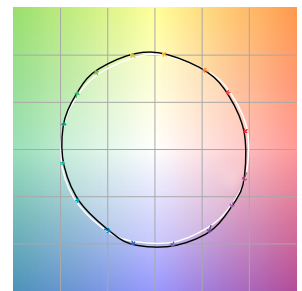
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	91	-4%	-2%
2	93	-3%	2%
3	89	-1%	5%
4	91	2%	4%
5	93	4%	4%
6	93	4%	0%
7	90	2%	-5%
8	95	0%	-3%
9	94	-2%	-3%
10	93	-3%	1%
11	90	-1%	6%
12	90	3%	3%
13	93	4%	-2%
14	90	5%	-6%
15	91	1%	-5%
16	88	-1%	-8%



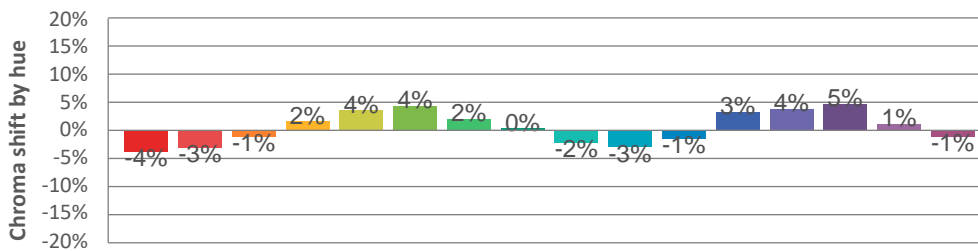
Hue binH



Color vector graphics



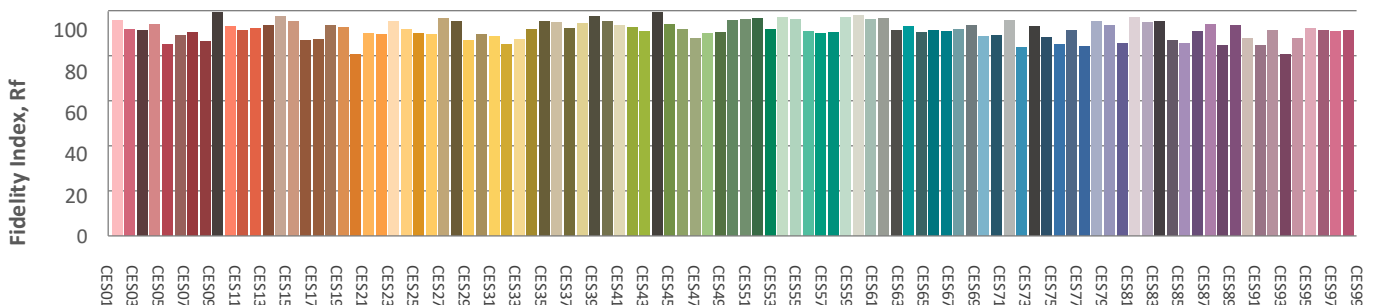
Hue bin



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	21,8	22,7	22,1	22,9	23,1	21,8	22,7	22,1	22,9	23,1
	3H	23,4	24,2	23,7	24,5	24,7	23,4	24,2	23,7	24,5	24,7
	4H	24,0	24,8	24,4	25,1	25,4	24,0	24,8	24,4	25,1	25,4
	6H	24,4	25,1	24,7	25,4	25,7	24,4	25,1	24,7	25,4	25,7
	8H	24,4	25,1	24,8	25,4	25,7	24,4	25,1	24,8	25,4	25,7
	12H	24,4	25,0	24,8	25,4	25,7	24,4	25,0	24,8	25,4	25,7
4H	2H	22,4	23,2	22,8	23,5	23,8	22,4	23,2	22,8	23,5	23,8
	3H	24,2	24,9	24,6	25,2	25,6	24,2	24,9	24,6	25,2	25,6
	4H	25,0	25,6	25,4	25,9	26,3	25,0	25,6	25,4	25,9	26,3
	6H	25,4	25,9	25,9	26,3	26,7	25,4	25,9	25,9	26,3	26,7
	8H	25,5	25,9	25,9	26,3	26,8	25,5	25,9	25,9	26,3	26,8
	12H	25,5	25,9	26,0	26,3	26,8	25,5	25,9	26,0	26,3	26,8
8H	4H	25,3	25,7	25,7	26,1	26,6	25,3	25,7	25,7	26,1	26,6
	6H	25,8	26,1	26,2	26,6	27,0	25,8	26,1	26,2	26,6	27,0
	8H	25,9	26,2	26,4	26,6	27,1	25,9	26,2	26,4	26,6	27,1
	12H	25,9	26,1	26,4	26,6	27,2	25,9	26,1	26,4	26,6	27,2
12H	4H	25,3	25,7	25,7	26,1	26,6	25,3	25,7	25,7	26,1	26,6
	6H	25,8	26,1	26,3	26,5	27,0	25,8	26,1	26,3	26,5	27,0
	8H	25,9	26,1	26,4	26,6	27,2	25,9	26,1	26,4	26,6	27,2

Variation of the observer position for the luminaire distance S

S = 1,0H	+0,3 / -0,2	+0,3 / -0,2
S = 1,5H	+0,7 / -0,4	+0,7 / -0,4
S = 2,0H	+1,2 / -0,7	+1,2 / -0,7
Standard table	BK05	BK05
Correction summand	5,4	5,4

Corrected glare indices referring to 2172lm total luminous flux



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