

LM-79

Test Report

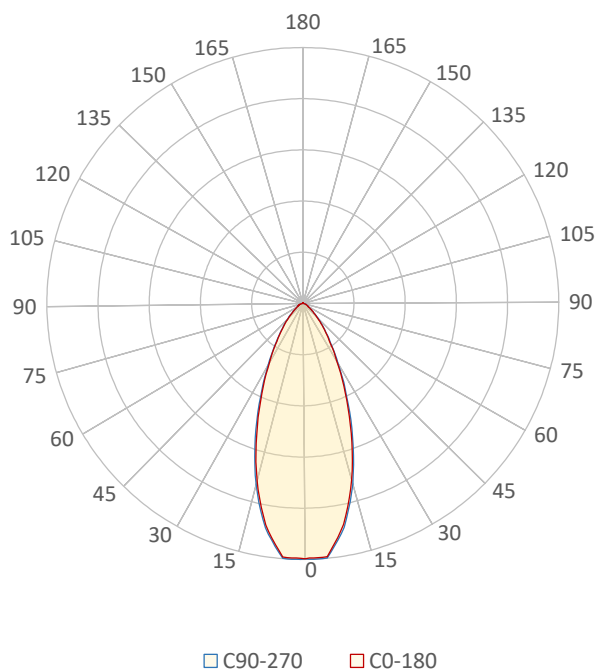
LM79-JADE-EXPO-4000K-CRI90-SPOT+ 42° beamshaper

General Description

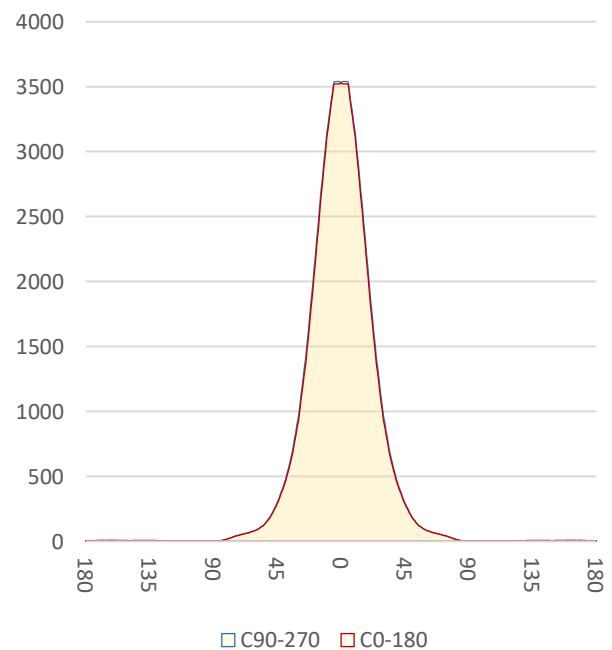
Item number	J-EX-X-3-1-40-90-1
Date and time	24-10-2017 10:34:56
CCT (Kelvin)	3910 K
Beam angle	43,1°
Luminous flux	2547 lm
Efficiency	90 lm/watt
Weighted energy	28,3 kWh/1000h
Power factor	0,97
CRI (RA)	92,8
Fidelity index Rf	Rf 89,8
Gammut index Rg	Rg 98,2
Peak	3539 cd



Polar diagram



Cartesian diagram



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Beam details	1m	2m	3m	4m	5m																			
Lux*	3531 lx	883 lx	392 lx	221 lx	141 lx																			
*measured at center of beam																								
Footcandles*	328,0 fcd	82,0 fcd	36,4 fcd	20,5 fcd	13,1 fcd																			
Beam width (meter)	0,8 m	1,6 m	2,4 m	3,2 m	4 m																			
Beam width (Feet)	2,6 ft	5,2 ft	7,8 ft	10,4 ft	13 ft																			
Beam intensities																								
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m					
3531lx	883lx	392lx	221lx	141lx	98lx	72lx	55lx	44lx	35lx	29lx	25lx	21lx	18lx	16lx	14lx	12lx	11lx	10lx	9lx					
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					
328fcd	82fcd	36,4fcd	20,5fcd	13,1fcd	9,1fcd	6,7fcd	5,1fcd	4fcd	3,3fcd	2,7fcd	2,3fcd	1,9fcd	1,7fcd	1,5fcd	1,3fcd	1,1fcd	1fcd	0,9fcd	0,8fcd					
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°					
3531	3522	3522	3436	3273	3106	2879	2651	2410	2160	1913	1690	1466	1274	1099	932	808	685	590	508					
100%	100%	100%	97%	93%	88%	82%	75%	68%	61%	54%	48%	42%	36%	31%	26%	23%	19%	17%	14%					
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°					
3531	3539	3539	3458	3304	3146	2924	2702	2465	2216	1970	1744	1518	1321	1140	968	839	710	611	525					
100%	100%	100%	98%	94%	89%	83%	77%	70%	63%	56%	49%	43%	37%	32%	27%	24%	20%	17%	15%					
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°					
3531	3522	3522	3436	3273	3106	2879	2651	2410	2160	1913	1690	1466	1274	1099	932	808	685	590	508					
100%	100%	100%	97%	93%	88%	82%	75%	68%	61%	54%	48%	42%	36%	31%	26%	23%	19%	17%	14%					
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°					
3531	3539	3539	3458	3304	3146	2924	2702	2465	2216	1970	1744	1518	1321	1140	968	839	710	611	525					
100%	100%	100%	98%	94%	89%	83%	77%	70%	63%	56%	49%	43%	37%	32%	27%	24%	20%	17%	15%					
Beam angle 50%					Field angle 10%					Cutoff angle 2,5%					Intensity ratio in 120° cone					Intensity ratio in 90° cone				
43,1°					85,7°					118,6°					94,7%					86,5%				



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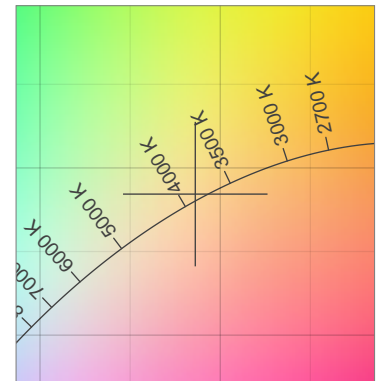
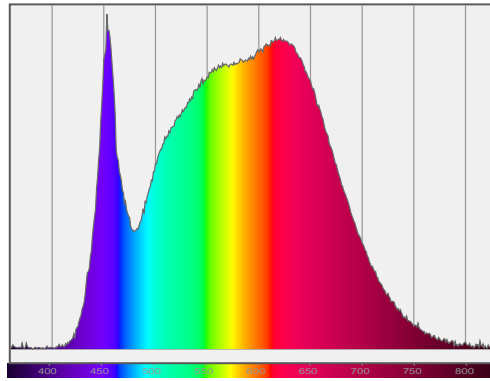
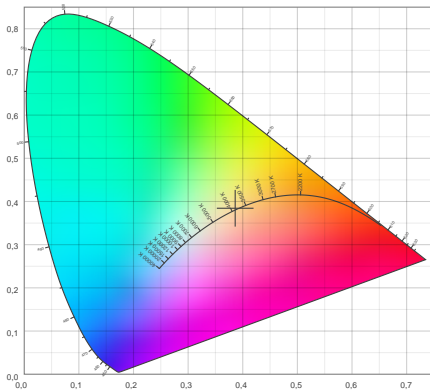
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Color details



CIE 1931

x: 0,386



Spectra

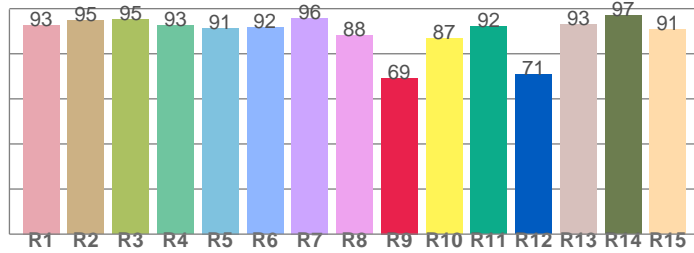
CIE 1931 ZOOM

3910 K

y: 0,384

Δuv : 0,0019

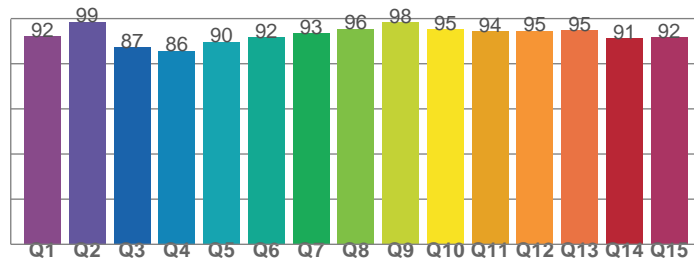
CRI: 92,8 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
92,7	94,9	95,3	92,7	91,4	91,7	95,8	88,2
R9	R10	R11	R12	R13	R14	R15	
69,2	86,7	92,1	70,7	93,2	97,0	90,6	

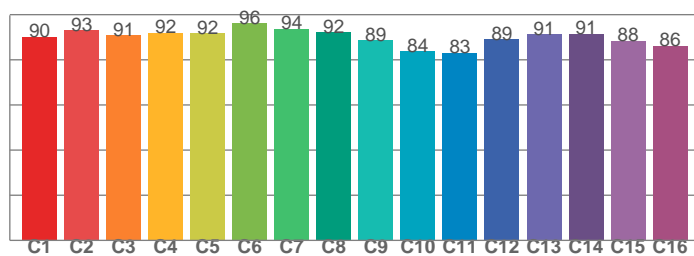
CQS: 92,1



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
92,2	98,6	87,2	85,7	89,7	91,6	93,5	95,5
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
98,2	95,1	94,2	94,6	94,9	91,1	91,9	

TM30: 89,8



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

C1	C2	C3	C4	C5	C6	C7	C8
90,2	93,1	90,9	91,8	91,6	96,1	93,6	92,1
C9	C10	C11	C12	C13	C14	C15	
88,5	83,7	83,0	89,0	91,2	91,5	88,4	

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
3910 K	92,8	69,2	89,8	98,2	92,1	0,386	0,384	0,226	0,337	0,0019



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TM30 details

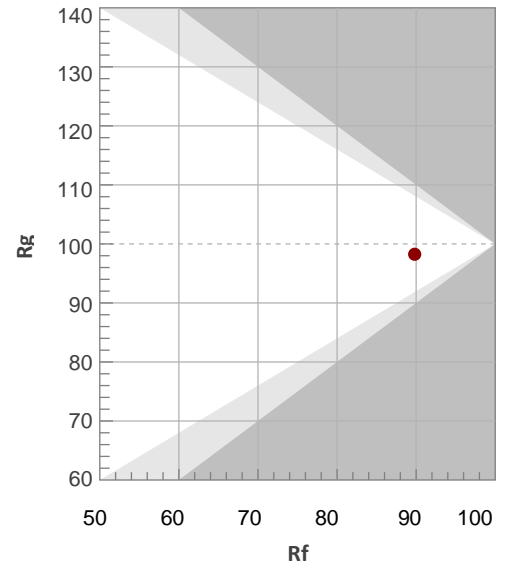
Rf 89,8

Fidelity index Rf

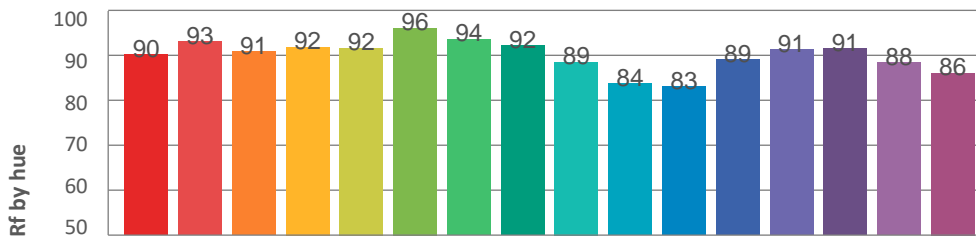
Rg 98,2

Gamut index Rg

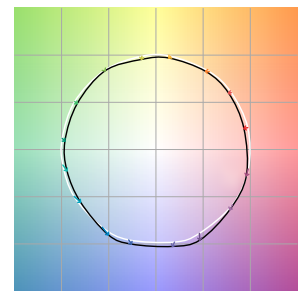
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	90	-4%	0%
2	93	-3%	1%
3	91	-2%	3%
4	92	-2%	1%
5	92	-3%	1%
6	96	-1%	0%
7	94	-3%	0%
8	92	-3%	2%
9	89	-3%	7%
10	84	-2%	9%
11	83	3%	10%
12	89	4%	4%
13	91	4%	-3%
14	91	6%	-3%
15	88	1%	-6%
16	86	-1%	-7%



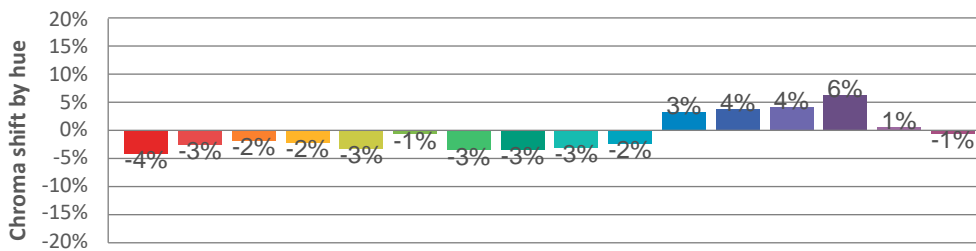
Hue binH



Color vector graphics



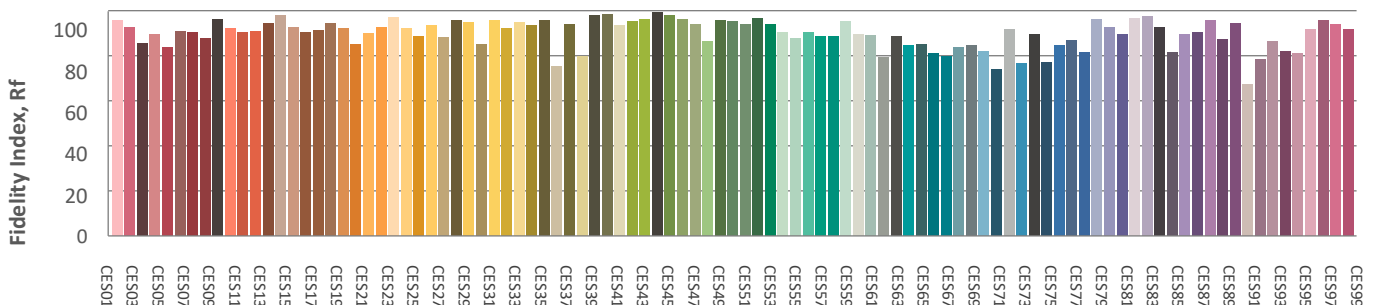
Hue bin



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	24,2	25,0	24,5	25,3	25,5	24,2	25,0	24,5	25,3	25,5
	3H	24,8	25,5	25,1	25,8	26,1	24,8	25,5	25,1	25,8	26,1
	4H	25,1	25,8	25,4	26,1	26,4	25,1	25,8	25,4	26,1	26,4
	6H	25,3	25,9	25,6	26,2	26,5	25,3	25,9	25,6	26,2	26,5
	8H	25,3	25,9	25,7	26,2	26,6	25,3	25,9	25,7	26,2	26,6
	12H	25,3	25,9	25,7	26,2	26,5	25,3	25,9	25,7	26,2	26,5
4H	2H	24,4	25,1	24,7	25,4	25,6	24,4	25,1	24,7	25,4	25,6
	3H	25,2	25,8	25,5	26,1	26,4	25,2	25,8	25,5	26,1	26,4
	4H	25,6	26,1	26,0	26,5	26,9	25,6	26,1	26,0	26,5	26,9
	6H	25,9	26,3	26,3	26,7	27,1	25,9	26,3	26,3	26,7	27,1
	8H	25,9	26,3	26,4	26,7	27,2	25,9	26,3	26,4	26,7	27,2
	12H	25,9	26,3	26,4	26,7	27,2	25,9	26,3	26,4	26,7	27,2
8H	4H	25,8	26,2	26,2	26,6	27,0	25,8	26,2	26,2	26,6	27,0
	6H	26,1	26,4	26,6	26,8	27,3	26,1	26,4	26,6	26,8	27,3
	8H	26,2	26,4	26,7	26,9	27,4	26,2	26,4	26,7	26,9	27,4
	12H	26,2	26,4	26,7	26,9	27,4	26,2	26,4	26,7	26,9	27,4
12H	4H	25,8	26,1	26,2	26,5	27,0	25,8	26,1	26,2	26,5	27,0
	6H	26,1	26,4	26,6	26,8	27,3	26,1	26,4	26,6	26,8	27,3
	8H	26,2	26,4	26,7	26,9	27,4	26,2	26,4	26,7	26,9	27,4
Variation of the observer position for the luminaire distance S											
S = 1,0H	+1,0 / -1,1					+1,0 / -1,1					
S = 1,5H	+2,4 / -1,5					+2,4 / -1,5					
S = 2,0H	+3,8 / -1,9					+3,8 / -1,9					
Standard table	BK03					BK03					
Correction summand	8,2					8,2					
Corrected glare indices referring to 2547lm total luminous flux											



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