

LM-79

Test Report

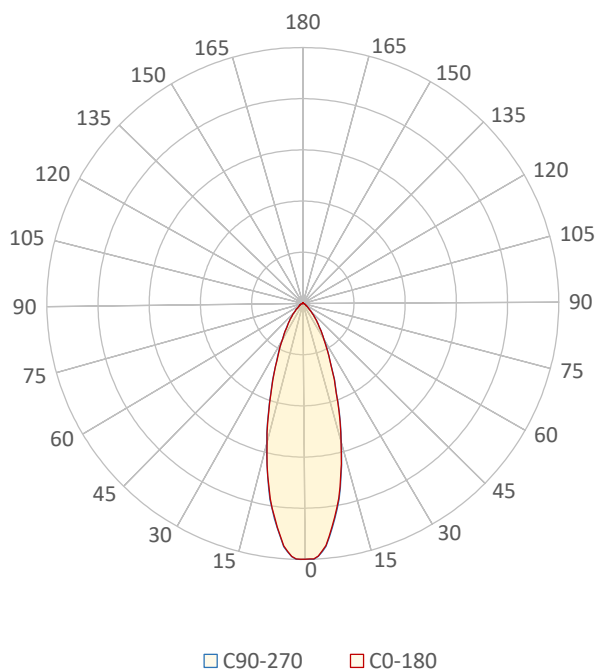
LM79-JADE-EXPO-4000K-CRI90-SPOT+ 33° beamshaper

General Description

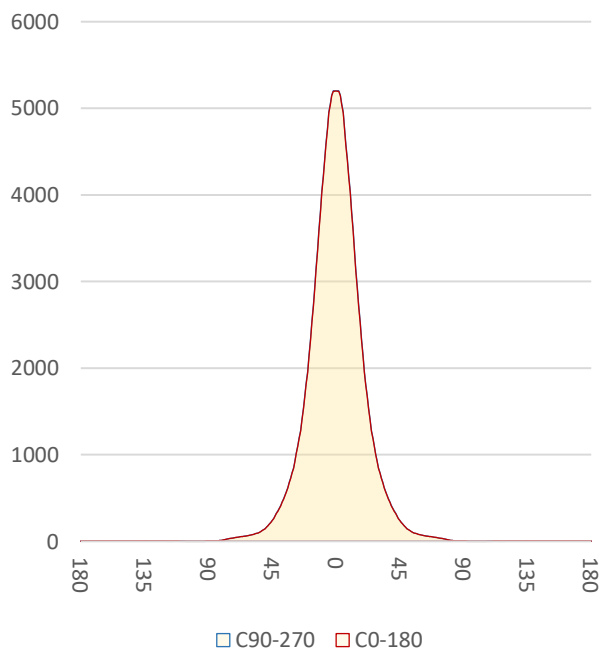
Item number	J-EX-X-3-1-27-40-1
Date and time	24-10-2017 10:32:09
CCT (Kelvin)	3912 K
Beam angle	33,3°
Luminous flux	2593 lm
Efficiency	92 lm/watt
Weighted energy	28,3 kWh/1000h
Power factor	0,97
CRI (RA)	92,9
Fidelity index Rf	Rf 89,8
Gammut index Rg	Rg 98,3
Peak	5203 cd



Polar diagram



Cartesian diagram



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Beam details	1m	2m	3m	4m	5m																			
Lux*	5200 lx	1300 lx	578 lx	325 lx	208 lx																			
*measured at center of beam																								
Footcandles*	483,1 fcd	120,8 fcd	53,7 fcd	30,2 fcd	19,3 fcd																			
Beam width (meter)	0,6 m	1,2 m	1,8 m	2,4 m	3 m																			
Beam width (Feet)	2 ft	3,9 ft	5,9 ft	7,9 ft	9,8 ft																			
Beam intensities																								
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m					
5200lx	1300lx	578lx	325lx	208lx	144lx	106lx	81lx	64lx	52lx	43lx	36lx	31lx	27lx	23lx	20lx	18lx	16lx	14lx	13lx					
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					
483,1fcd	120,8fcd	53,7fcd	30,2fcd	19,3fcd	13,4fcd	9,9fcd	7,5fcd	6fcd	4,8fcd	4fcd	3,4fcd	2,9fcd	2,5fcd	2,1fcd	1,9fcd	1,7fcd	1,5fcd	1,3fcd	1,2fcd					
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°					
5200	5197	5046	4760	4393	4022	3576	3130	2716	2325	1947	1672	1397	1184	1008	842	729	616	527	449					
100%	100%	97%	92%	84%	77%	69%	60%	52%	45%	37%	32%	27%	23%	19%	16%	14%	12%	10%	9%					
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°					
5200	5203	5059	4778	4415	4047	3602	3157	2741	2347	1964	1686	1408	1192	1015	848	735	621	532	455					
100%	100%	97%	92%	85%	78%	69%	61%	53%	45%	38%	32%	27%	23%	20%	16%	14%	12%	10%	9%					
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°					
5200	5197	5046	4760	4393	4022	3576	3130	2716	2325	1947	1672	1397	1184	1008	842	729	616	527	449					
100%	100%	97%	92%	84%	77%	69%	60%	52%	45%	37%	32%	27%	23%	19%	16%	14%	12%	10%	9%					
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°					
5200	5203	5059	4778	4415	4047	3602	3157	2741	2347	1964	1686	1408	1192	1015	848	735	621	532	455					
100%	100%	97%	92%	85%	78%	69%	61%	53%	45%	38%	32%	27%	23%	20%	16%	14%	12%	10%	9%					
Beam angle 50%					Field angle 10%					Cutoff angle 2,5%					Intensity ratio in 120° cone					Intensity ratio in 90° cone				
33,3°					72,5°					103°					95,7%					89,3%				



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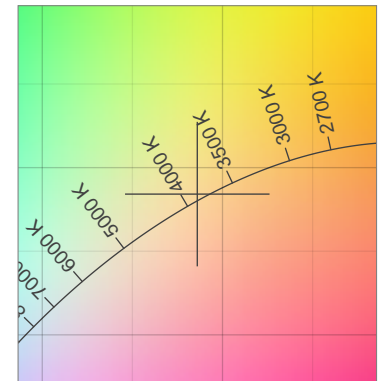
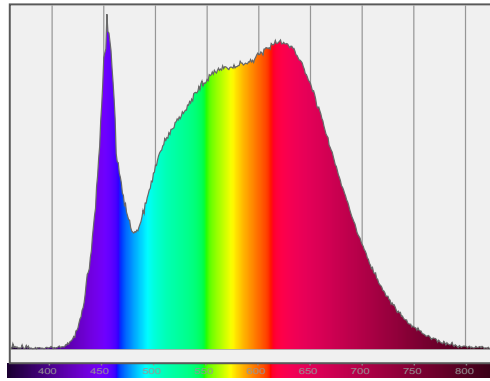
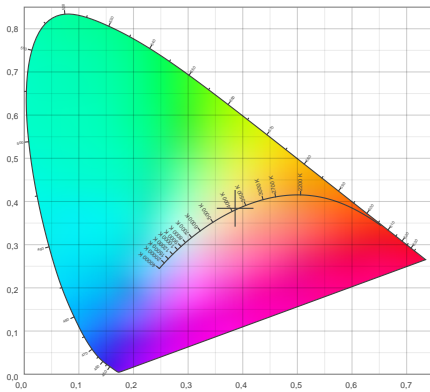
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Color details



CIE 1931

x: 0,386



Spectra

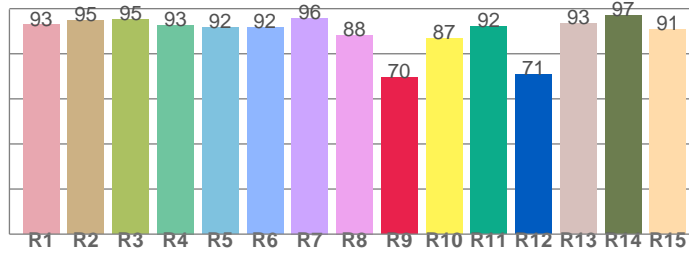
CIE 1931 ZOOM

3912 K

y: 0,384

Δuv : 0,0019

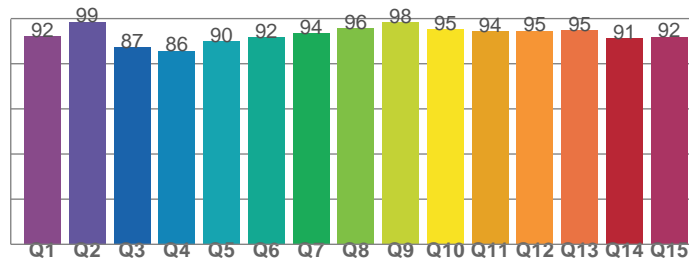
CRI: 92,9 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
92,8	94,9	95,2	92,8	91,5	91,7	95,9	88,4
R9	R10	R11	R12	R13	R14	R15	
69,6	86,7	92,2	70,7	93,3	97,0	90,8	

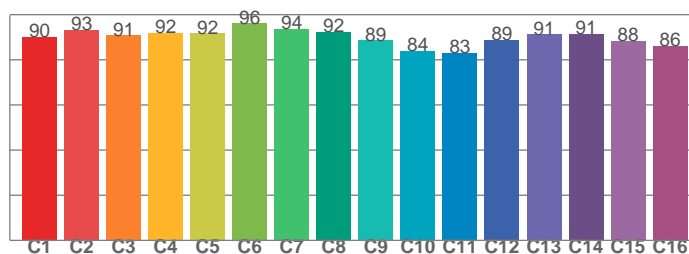
CQS: 92,2



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
92,3	98,6	87,2	85,8	89,8	91,7	93,5	95,5
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
98,2	95,1	94,2	94,6	94,9	91,3	92,0	

TM30: 89,8



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

C1	C2	C3	C4	C5	C6	C7	C8
90,3	93,1	90,9	91,9	91,7	96,1	93,6	92,2
C9	C10	C11	C12	C13	C14	C15	
88,6	83,8	83,0	88,9	91,3	91,4	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
3912 K	92,9	69,6	89,8	98,3	92,2	0,386	0,384	0,226	0,337	0,0019



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TM30 details

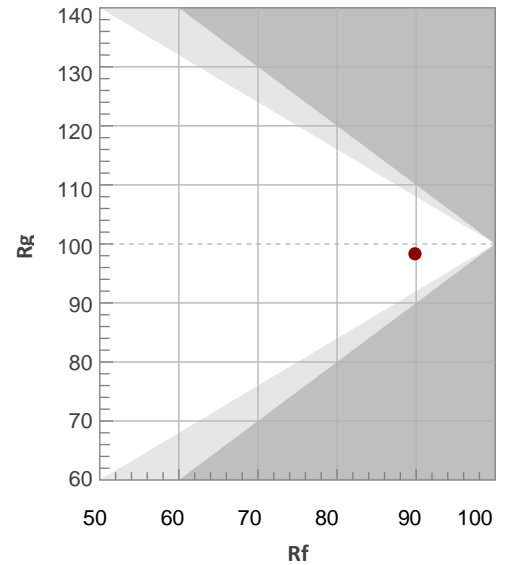
Rf 89,8

Fidelity index Rf

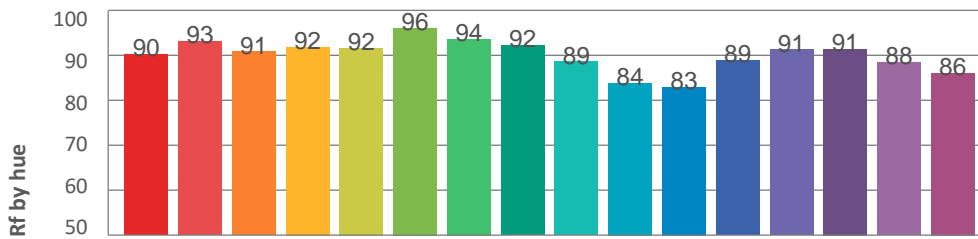
Rg 98,3

Gamut index Rg

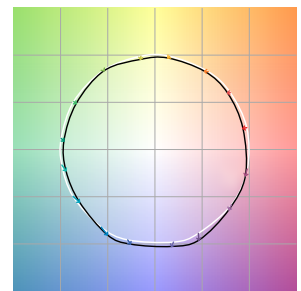
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	90	-4%	0%
2	93	-3%	1%
3	91	-2%	3%
4	92	-2%	2%
5	92	-3%	1%
6	96	-1%	0%
7	94	-3%	0%
8	92	-3%	2%
9	89	-3%	7%
10	84	-2%	9%
11	83	3%	10%
12	89	4%	4%
13	91	4%	-3%
14	91	6%	-3%
15	88	1%	-6%
16	86	-1%	-7%



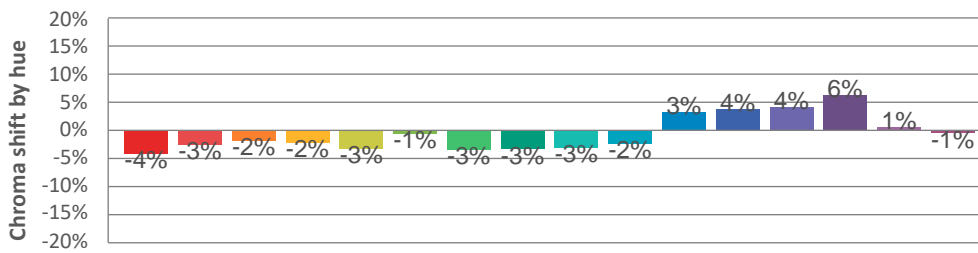
Hue binH



Color vector graphics



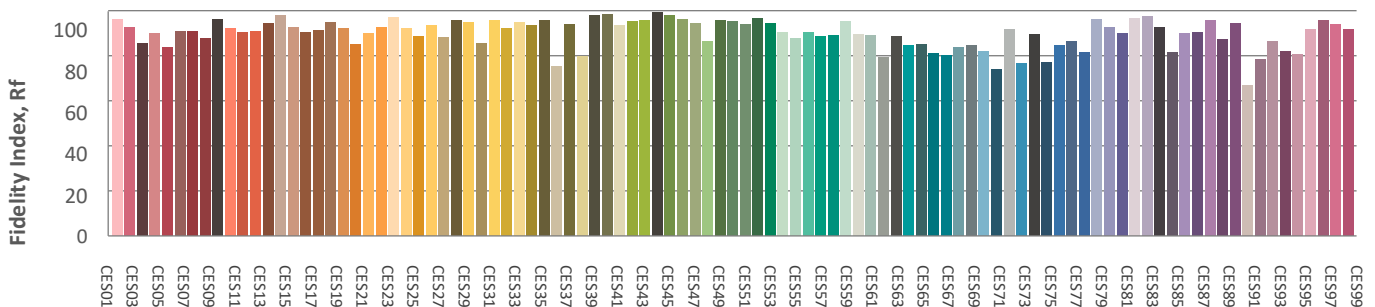
Hue bin



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

Variation of the observer position for the luminaire distance S

S = 1,0H	+1,2 / -1,1	+1,2 / -1,1
S = 1,5H	+2,7 / -1,6	+2,7 / -1,6
S = 2,0H	+4,2 / -2,0	+4,2 / -2,0
Standard table	BK03	BK03
Correction summand	7,1	7,1

Corrected glare indices referring to 2593lm total luminous flux



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