

LM-79

Test Report

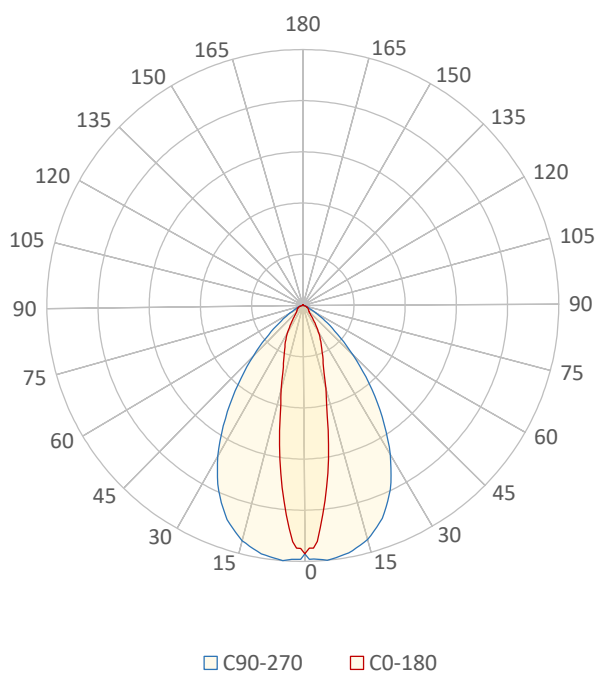
LM79-JADE-EXPO-3000K-CRI90-SPOT+ 55x22° beamshaper

General Discription

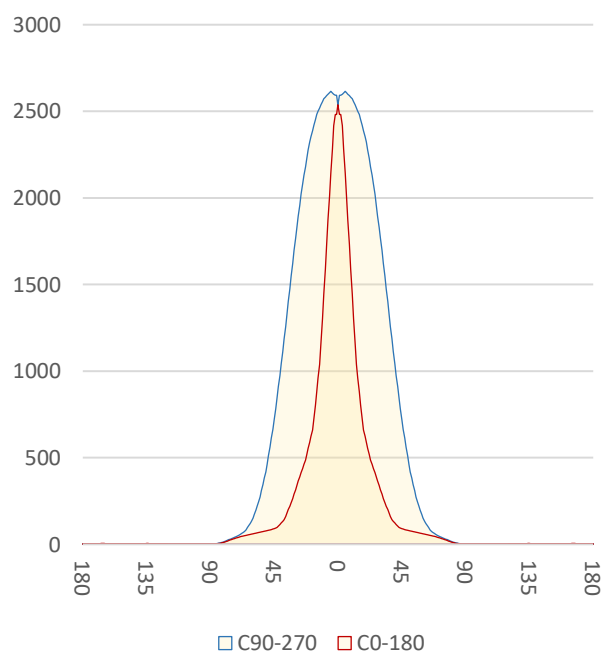
Item number	J-EX-X-3-1-30-90-1
Date and time	16-10-2017 13:39:18
CCT (Kelvin)	3084 K
Beam angle	47,7°
Luminous flux	2354 lm
Efficiency	86 lm/watt
Weighted energy	27,4 kWh/1000h
Power factor	0,93
CRI (RA)	91,8
Fidelity index Rf	Rf 90,9
Gammut index Rg	Rg 99,0
Peak	2616 cd



Polar diagram



Cartesian diagram



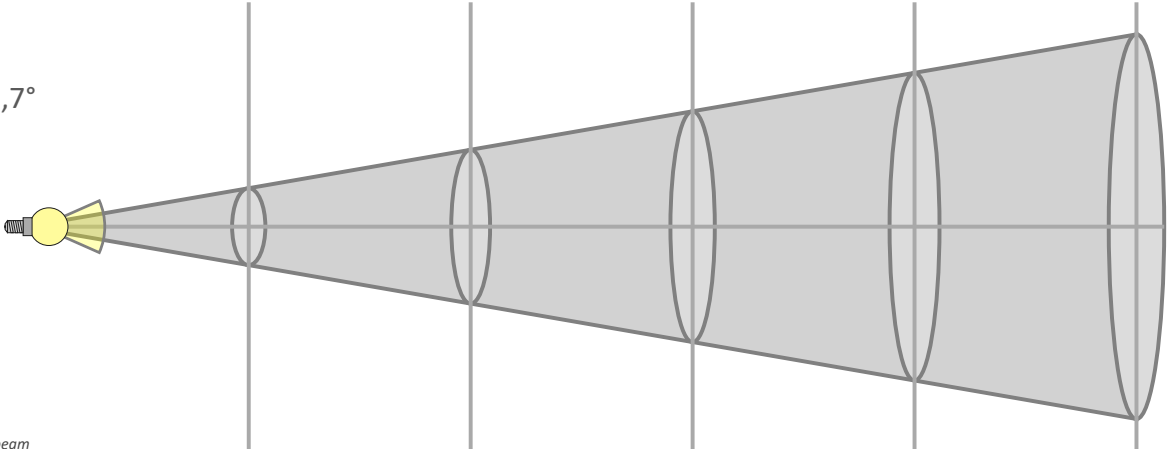
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Beam details					1m		2m		3m		4m		5m						
Lux*					2538 lx		634 lx		282 lx		159 lx		102 lx						
47,7° 																			
*measured at center of beam																			
Footcandles*					235,8 fcd		58,9 fcd		26,2 fcd		14,7 fcd		9,4 fcd						
Beam width (meter)					0,9 m		1,8 m		2,7 m		3,5 m		4,4 m						
Beam width (Feet)					2,9 ft		5,8 ft		8,7 ft		11,6 ft		14,5 ft						
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
2538lx	634lx	282lx	159lx	102lx	70lx	52lx	40lx	31lx	25lx	21lx	18lx	15lx	13lx	11lx	10lx	9lx	8lx	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
235,8fcd	58,9fcd	26,2fcd	14,7fcd	9,4fcd	6,5fcd	4,8fcd	3,7fcd	2,9fcd	2,4fcd	1,9fcd	1,6fcd	1,4fcd	1,2fcd	1fcd	0,9fcd	0,8fcd	0,7fcd	0,7fcd	0,6fcd
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°
2538	2482	2281	2008	1733	1445	1158	960	803	660	589	518	462	413	365	314	264	220	181	142
100%	98%	90%	79%	68%	57%	46%	38%	32%	26%	23%	20%	18%	16%	14%	12%	10%	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°
2538	2593	2607	2608	2590	2573	2537	2500	2452	2387	2322	2228	2130	2021	1894	1767	1622	1475	1329	1185
100%	102%	103%	103%	102%	101%	100%	99%	97%	94%	92%	88%	84%	80%	75%	70%	64%	58%	52%	47%
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°
2538	2482	2281	2008	1733	1445	1158	960	803	660	589	518	462	413	365	314	264	220	181	142
100%	98%	90%	79%	68%	57%	46%	38%	32%	26%	23%	20%	18%	16%	14%	12%	10%	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°
2538	2593	2607	2608	2590	2573	2537	2500	2452	2387	2322	2228	2130	2021	1894	1767	1622	1475	1329	1185
100%	102%	103%	103%	102%	101%	100%	99%	97%	94%	92%	88%	84%	80%	75%	70%	64%	58%	52%	47%
Beam angle 50%				Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone			
47,7°				88°				126,8°				94,7%				82,3%			



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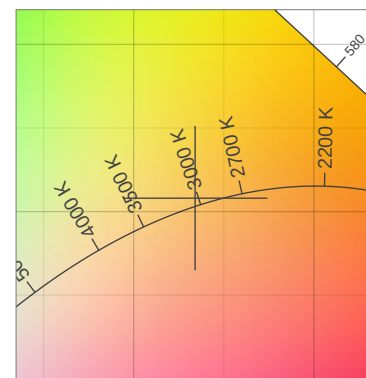
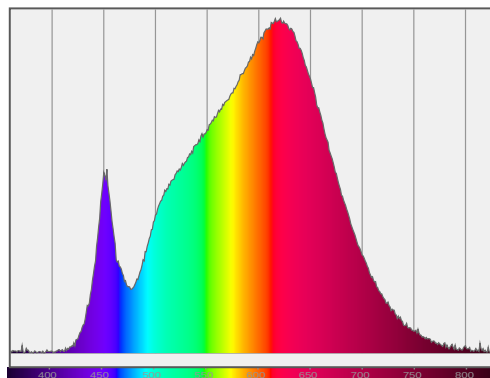
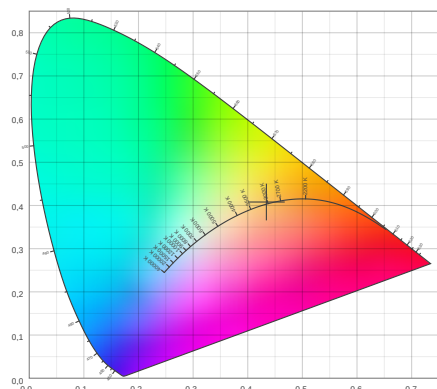
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Color details



CIE 1931

x: 0,434



Spectra

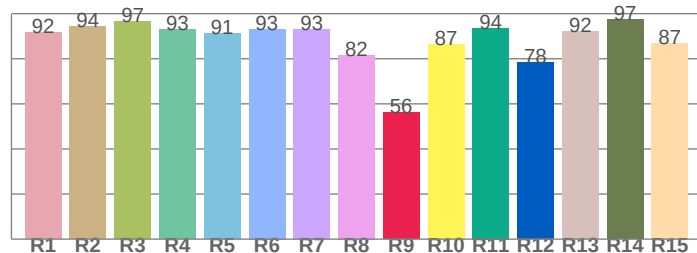
CIE 1931 ZOOM

3084 K

y: 0,408

Δuv : 0,0020

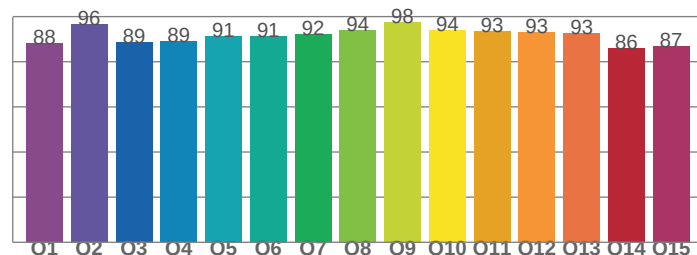
CRI: 91,8 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
91,6	94,4	96,6	92,9	91,1	93,2	93,2	81,7
R9	R10	R11	R12	R13	R14	R15	
56,1	86,6	93,7	78,3	92,2	97,5	87,0	

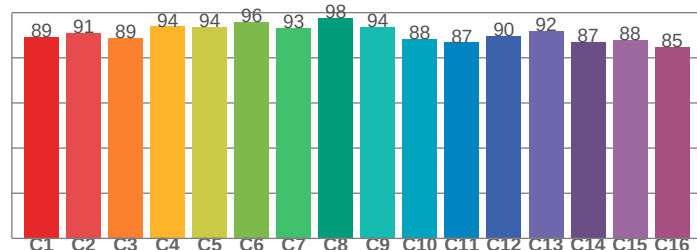
CQS: 90,9



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
88,4	96,4	88,7	89,0	91,3	91,4	92,0	93,9
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
97,6	94,1	93,4	93,0	92,5	85,9	86,7	

TM30: 90,9



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

C1	C2	C3	C4	C5	C6	C7	C8
89,3	91,1	88,8	94,0	93,5	95,9	93,2	97,7
C9	C10	C11	C12	C13	C14	C15	
93,8	88,5	86,7	89,7	92,0	87,0	87,9	

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
3084 K	91,8	56,1	90,9	99,0	90,9	0,434	0,408	0,247	0,348	0,0020



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beamshaper

TM30 details

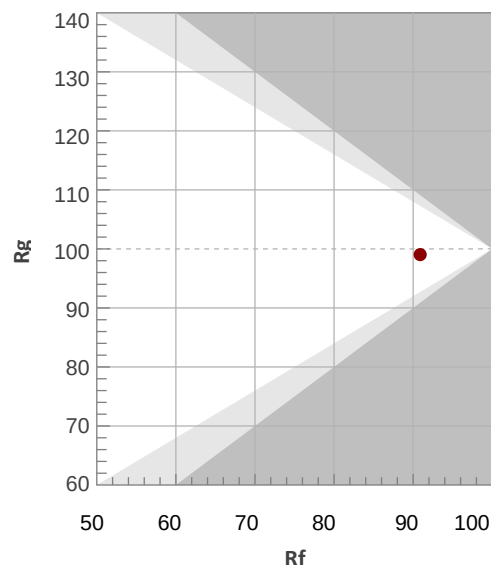
Rf 90,9

Fidelity index Rf

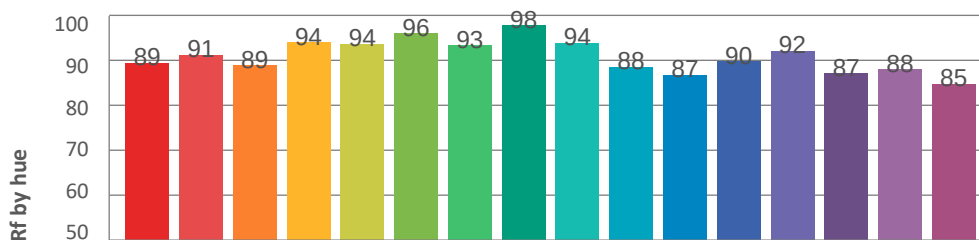
Rg 99,0

Gamut index Rg

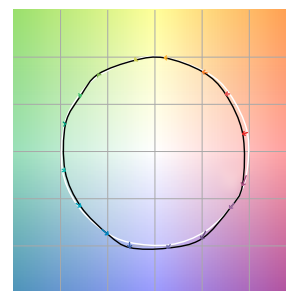
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	89	-5%	-1%
2	91	-4%	2%
3	89	-2%	5%
4	94	0%	3%
5	94	-1%	3%
6	96	2%	0%
7	93	-2%	-2%
8	98	-1%	0%
9	94	-3%	2%
10	88	-2%	5%
11	87	1%	8%
12	90	5%	1%
13	92	3%	-4%
14	87	4%	-8%
15	88	-1%	-7%
16	85	-2%	-11%



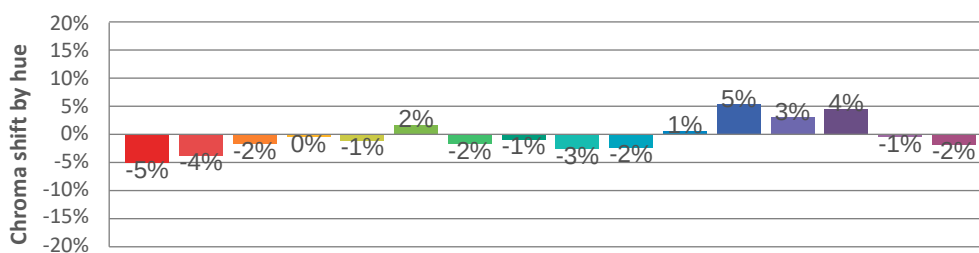
Hue binH



Color vector graphics



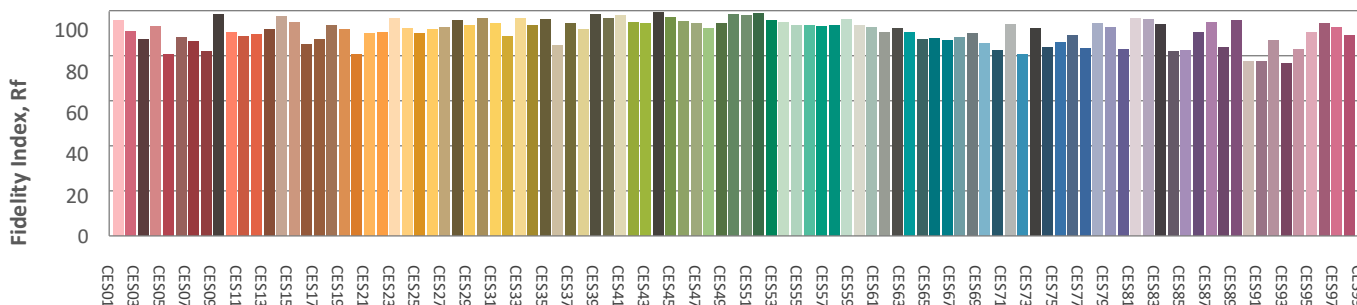
Hue bin



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

Corrected glare indices referring to 2354lm total luminous flux



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