

LM-79

Test Report

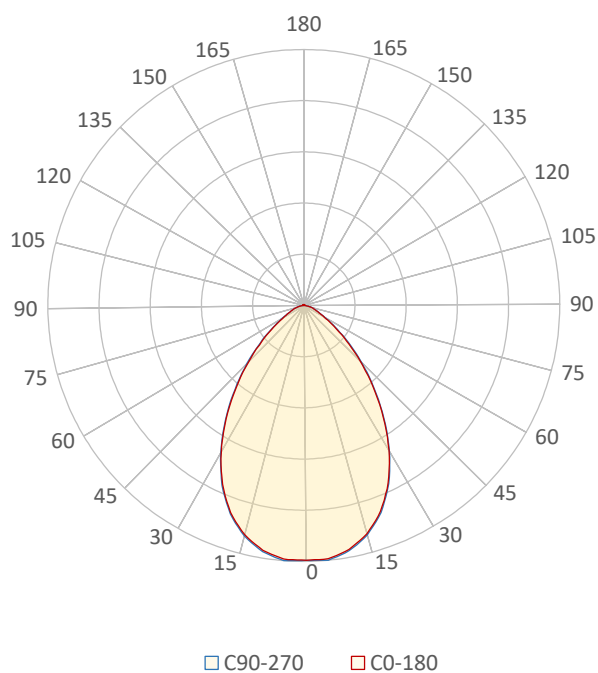
LM79-JADE-EXPO-4000K-CRI90-SPOT+ 70° beamshaper

General Discription

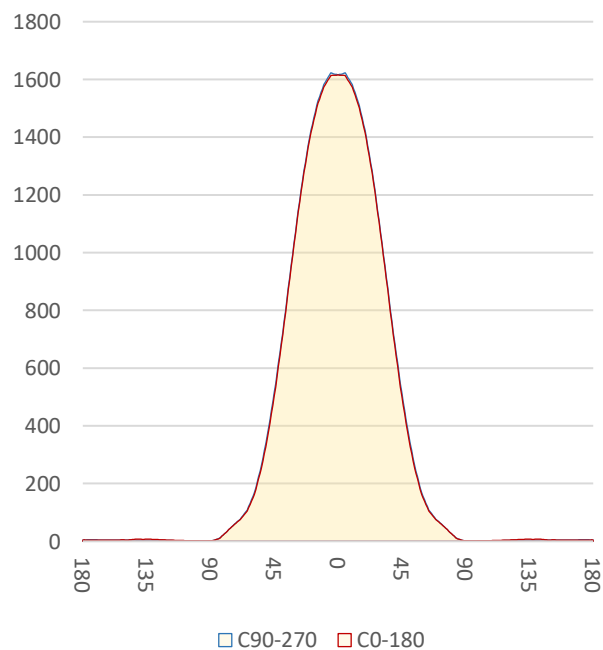
Item number	J-EX-X-3-1-40-90-1
Date and time	24-10-2017 10:37:16
CCT (Kelvin)	3928 K
Beam angle	73,4°
Luminous flux	2487 lm
Efficiency	88 lm/watt
Weighted energy	28,2 kWh/1000h
Power factor	0,97
CRI (RA)	93,0
Fidelity index Rf	Rf 89,9
Gammut index Rg	Rg 98,3
Peak	1624 cd



Polar diagram



Cartesian diagram



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Beam details	1m	2m	3m	4m	5m
Lux*	1616 lx	404 lx	180 lx	101 lx	65 lx

73,4°

*measured at center of beam

Footcandles*	150,1 fcd	37,5 fcd	16,7 fcd	9,4 fcd	6,0 fcd
Beam width (meter)	1,5 m	3 m	4,5 m	6 m	7,4 m
Beam width (Feet)	4,9 ft	9,8 ft	14,7 ft	19,5 ft	24,4 ft

Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
1616lx	404lx	180lx	101lx	65lx	45lx	33lx	25lx	20lx	16lx	13lx	11lx	10lx	8lx	7lx	6lx	6lx	5lx	4lx	4lx
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
150,1fcd	37,5fcd	16,7fcd	9,4fcd	6fcd	4,2fcd	3,1fcd	2,3fcd	1,9fcd	1,5fcd	1,2fcd	1fcd	0,9fcd	0,8fcd	0,7fcd	0,6fcd	0,5fcd	0,5fcd	0,4fcd	0,4fcd

Intensities in 0° c-plane																			
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
1616	1614	1574	1502	1392	1245	1067	871	678	502	352	234	150	99	71	50	27	8	2	1
100%	100%	97%	93%	86%	77%	66%	54%	42%	31%	22%	15%	9%	6%	4%	3%	2%	0%	0%	0%

Intensities in 90° c-plane																			
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
1616	1623	1582	1510	1401	1253	1073	879	688	515	364	243	156	102	72	50	26	8	2	1
100%	100%	98%	93%	87%	78%	66%	54%	43%	32%	23%	15%	10%	6%	4%	3%	2%	0%	0%	0%

Intensities in 180° c-plane																			
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
1616	1614	1574	1502	1392	1245	1067	871	678	502	352	234	150	99	71	50	27	8	2	1
100%	100%	97%	93%	86%	77%	66%	54%	42%	31%	22%	15%	9%	6%	4%	3%	2%	0%	0%	0%

Intensities in 270° c-plane																			
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
1616	1623	1582	1510	1401	1253	1073	879	688	515	364	243	156	102	72	50	26	8	2	1
100%	100%	98%	93%	87%	78%	66%	54%	43%	32%	23%	15%	10%	6%	4%	3%	2%	0%	0%	0%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
73,4°	118,5°	154°	92,4%	76,7%



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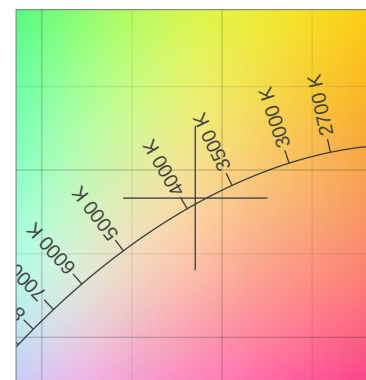
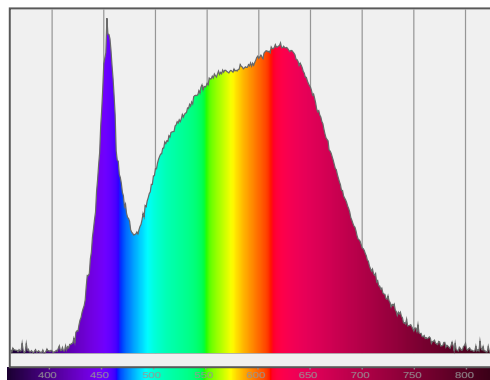
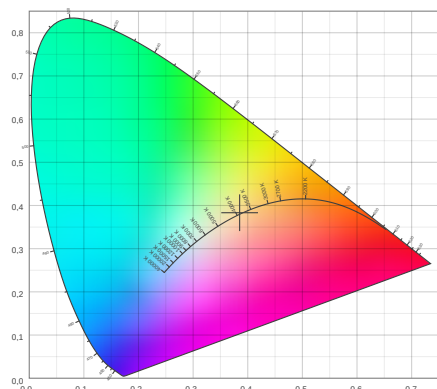
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Color details



CIE 1931

x: 0,385

3928 K

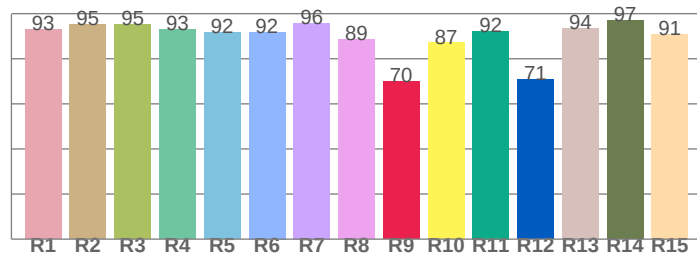
y: 0,383

Spectra

CIE 1931 ZOOM

Δuv : 0,0017

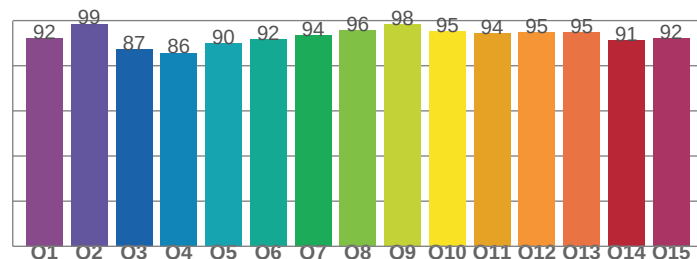
CRI: 93,0 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
93,0	95,1	95,3	92,9	91,7	91,9	95,9	88,5
R9	R10	R11	R12	R13	R14	R15	
70,1	87,1	92,3	70,9	93,5	97,0	91,0	

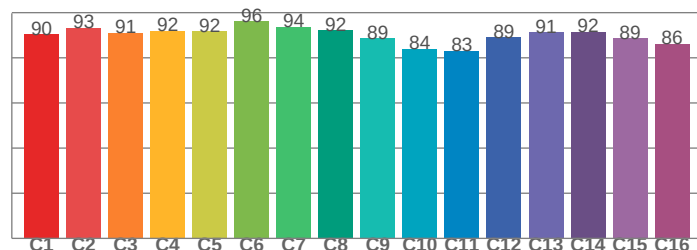
CQS: 92,2



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
92,3	98,6	87,2	85,8	89,8	91,7	93,6	95,6
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
98,2	95,1	94,3	94,6	95,0	91,4	92,1	

TM30: 89,9



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

C1	C2	C3	C4	C5	C6	C7	C8
90,3	93,2	91,0	91,9	91,7	96,1	93,6	92,2
C9	C10	C11	C12	C13	C14	C15	
88,6	83,8	83,0	89,0	91,3	91,5	88,5	

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
3928 K	93,0	70,1	89,9	98,3	92,2	0,385	0,383	0,226	0,337	0,0017



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beamshaper

TM30 details

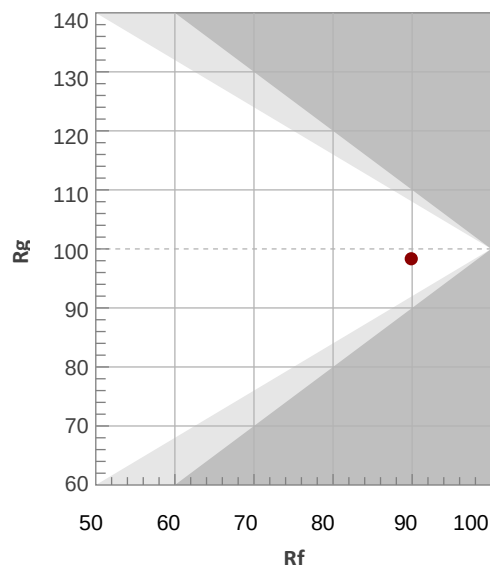
Rf 89,9

Fidelity index R_f

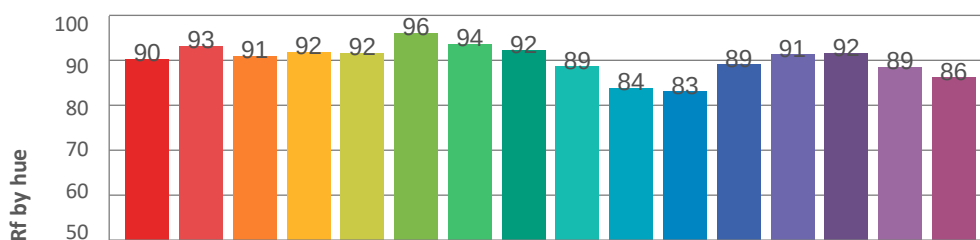
Rg 98,3

Gammut index Rg

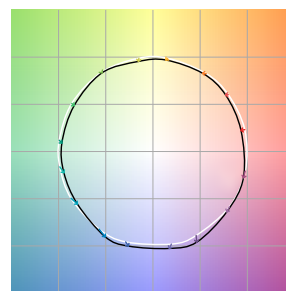
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	90	-4%	0%
2	93	-3%	1%
3	91	-2%	3%
4	92	-2%	1%
5	92	-3%	1%
6	96	-1%	0%
7	94	-3%	0%
8	92	-3%	2%
9	89	-3%	7%
10	84	-2%	9%
11	83	3%	10%
12	89	4%	4%
13	91	4%	-3%
14	92	6%	-3%
15	89	1%	-6%
16	86	-1%	-7%



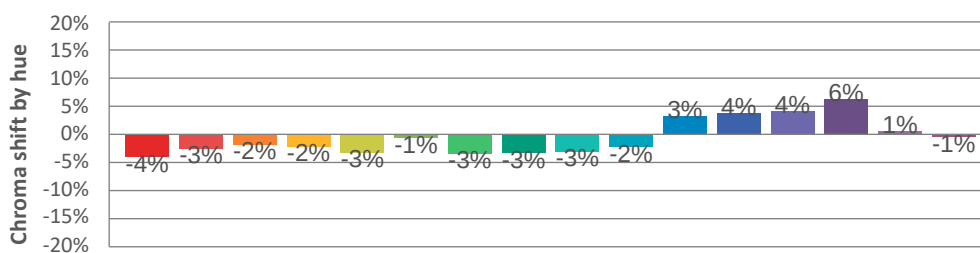
Hue binH



Color vector graphics



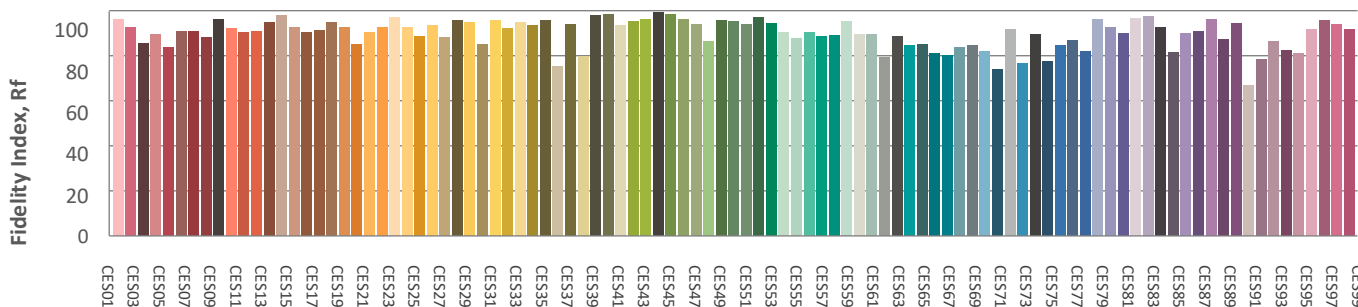
Hue bin



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	27,7	28,7	28,0	28,9	29,2	27,7	28,7	28,0	28,9	29,2
	3H	28,1	29,0	28,4	29,3	29,5	28,1	29,0	28,4	29,3	29,5
	4H	28,3	29,1	28,6	29,4	29,7	28,3	29,1	28,6	29,4	29,7
	6H	28,4	29,2	28,8	29,5	29,8	28,4	29,2	28,8	29,5	29,8
	8H	28,4	29,2	28,8	29,5	29,8	28,4	29,2	28,8	29,5	29,8
	12H	28,4	29,1	28,8	29,4	29,8	28,4	29,1	28,8	29,4	29,8
4H	2H	27,9	28,7	28,2	29,0	29,3	27,9	28,7	28,2	29,0	29,3
	3H	28,4	29,1	28,8	29,4	29,8	28,4	29,1	28,8	29,4	29,8
	4H	28,7	29,3	29,1	29,7	30,0	28,7	29,3	29,1	29,7	30,0
	6H	28,9	29,4	29,3	29,8	30,2	28,9	29,4	29,3	29,8	30,2
	8H	28,9	29,4	29,4	29,8	30,2	28,9	29,4	29,4	29,8	30,2
	12H	28,9	29,4	29,4	29,8	30,2	28,9	29,4	29,4	29,8	30,2
8H	4H	28,8	29,2	29,2	29,7	30,1	28,8	29,2	29,2	29,7	30,1
	6H	29,0	29,4	29,5	29,9	30,3	29,0	29,4	29,5	29,9	30,3
	8H	29,1	29,4	29,6	29,9	30,4	29,1	29,4	29,6	29,9	30,4
	12H	29,1	29,4	29,6	29,9	30,4	29,1	29,4	29,6	29,9	30,4
12H	4H	28,8	29,2	29,2	29,6	30,1	28,8	29,2	29,2	29,6	30,1
	6H	29,0	29,4	29,5	29,8	30,3	29,0	29,4	29,5	29,8	30,3
	8H	29,1	29,4	29,6	29,9	30,4	29,1	29,4	29,6	29,9	30,4

Variation of the observer position for the luminaire distance S

S = 1,0H	+0,5 / -1,0	+0,5 / -1,0
S = 1,5H	+1,3 / -1,9	+1,3 / -1,9
S = 2,0H	+2,6 / -2,6	+2,6 / -2,6
Standard table	BK02	BK02
Correction summand	11,0	11,0

Corrected glare indices referring to 2487lm total luminous flux



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