

LM-79

Test Report

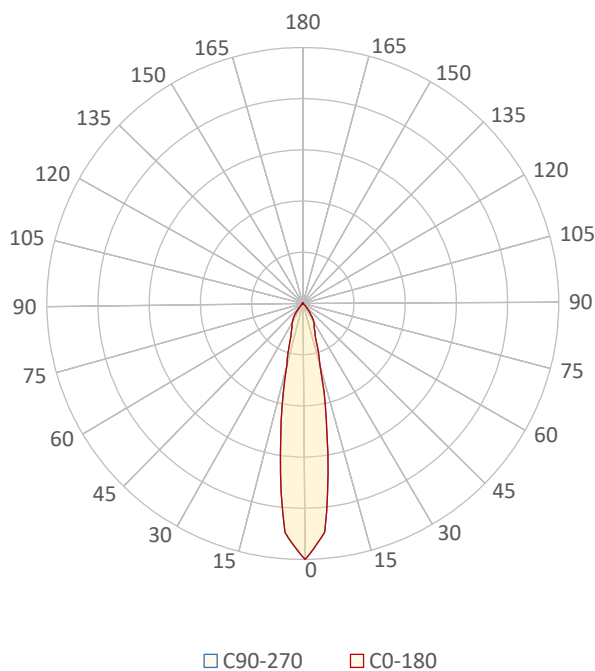
LM79-MIKA-4000K-CRI90-SPOT

General Discription

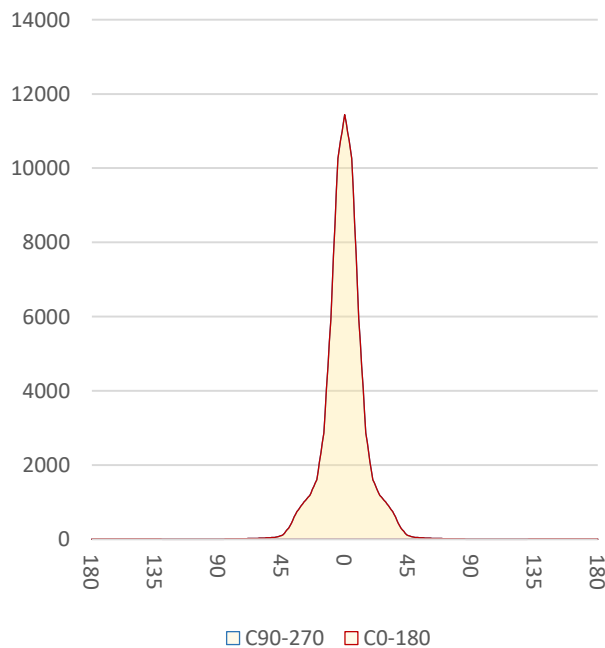
Item number	M-XXX-3-1-4090-1
Date and time	27-1-2017 14:17:11
CCT (Kelvin)	3952 K
Beam angle	20,7°
Luminous flux	2817 lm
Efficiency	100 lm/watt
Weighted energy	28,1 kWh/1000h
Power factor	0,95
CRI (RA)	93,0
Fidelity index Rf	Rf 89,8
Gammut index Rg	Rg 98,3
Peak	11441 cd



Polar diagram



Cartesian diagram



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Beam details	1m	2m	3m	4m	5m
Lux*	11441 lx	2860 lx	1271 lx	715 lx	458 lx

20,7°

*measured at center of beam

Footcandles*	1062,9 fcd	265,7 fcd	118,1 fcd	66,4 fcd	42,5 fcd
Beam width (meter)	0,4 m	0,7 m	1,1 m	1,5 m	1,8 m
Beam width (Feet)	1,2 ft	2,4 ft	3,6 ft	4,8 ft	6 ft

Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
11441lx	2860lx	1271lx	715lx	458lx	318lx	233lx	179lx	141lx	114lx	95lx	79lx	68lx	58lx	51lx	45lx	40lx	35lx	32lx	29lx
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
1062,9fcd	265,7fcd	118,1fcd	66,4fcd	42,5fcd	29,5fcd	21,7fcd	16,6fcd	13,1fcd	10,6fcd	8,8fcd	7,4fcd	6,3fcd	5,4fcd	4,7fcd	4,2fcd	3,7fcd	3,3fcd	2,9fcd	2,7fcd

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°
11,4K	11,0K	10,5K	9,4K	7,7K	5,9K	4,7K	3,4K	2,6K	2,1K	1,6K	1,4K	1,3K	1,1K	1,0K	1,0K	0,9K	0,7K	0,6K	0,4K
100%	96%	92%	82%	67%	52%	41%	30%	23%	18%	14%	12%	11%	10%	9%	8%	7%	7%	5%	4%

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°
11,4K	11,0K	10,5K	9,4K	7,7K	5,9K	4,7K	3,4K	2,6K	2,1K	1,6K	1,4K	1,3K	1,1K	1,0K	1,0K	0,9K	0,7K	0,6K	0,4K
100%	96%	92%	82%	67%	52%	41%	30%	23%	18%	14%	12%	11%	10%	9%	8%	7%	7%	5%	4%

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°
11,4K	11,0K	10,5K	9,4K	7,7K	5,9K	4,7K	3,4K	2,6K	2,1K	1,6K	1,4K	1,3K	1,1K	1,0K	1,0K	0,9K	0,7K	0,6K	0,4K
100%	96%	92%	82%	67%	52%	41%	30%	23%	18%	14%	12%	11%	10%	9%	8%	7%	7%	5%	4%

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°
11,4K	11,0K	10,5K	9,4K	7,7K	5,9K	4,7K	3,4K	2,6K	2,1K	1,6K	1,4K	1,3K	1,1K	1,0K	1,0K	0,9K	0,7K	0,6K	0,4K
100%	96%	92%	82%	67%	52%	41%	30%	23%	18%	14%	12%	11%	10%	9%	8%	7%	7%	5%	4%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
20,7°	51,6°	80,7°	97,9%	95,5%



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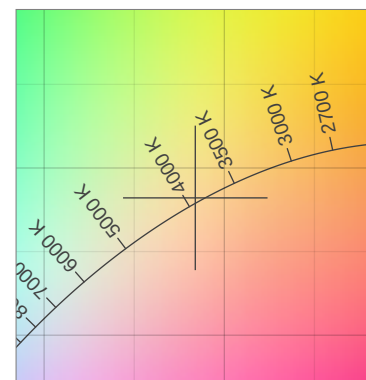
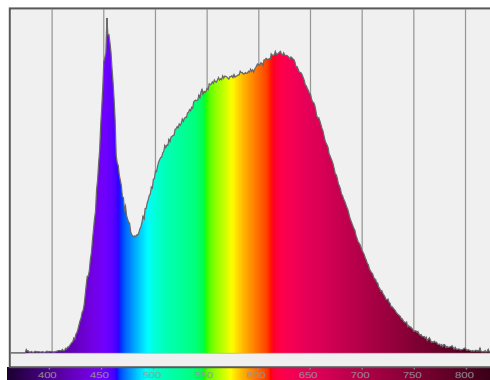
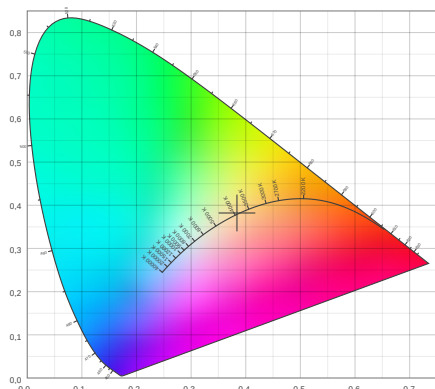
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Color details



CIE 1931

x: 0,384

3952 K

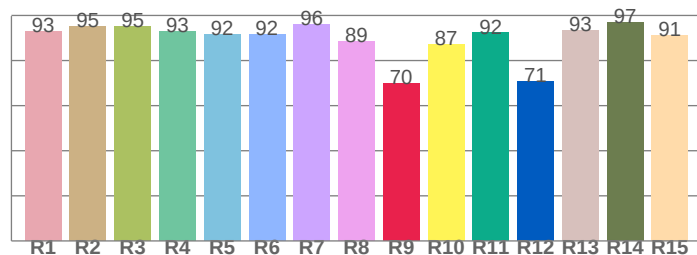
y: 0,382

Spectra

CIE 1931 ZOOM

 Δuv : 0,0015

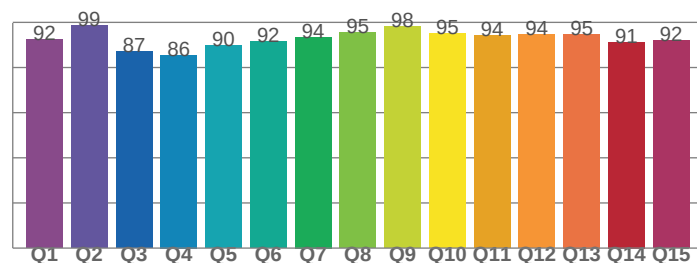
CRI: 93,0 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
93,0	95,0	95,2	92,8	91,7	91,8	95,9	88,5
R9	R10	R11	R12	R13	R14	R15	
70,1	87,0	92,3	70,8	93,5	97,0	91,0	

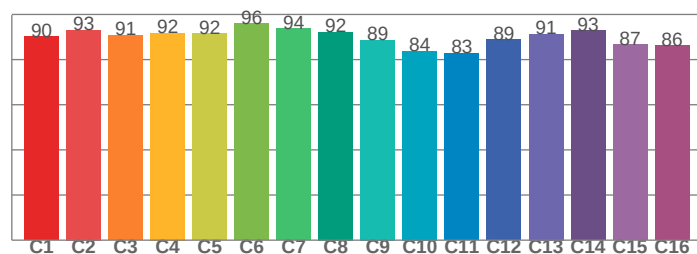
CQS: 92,1



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
92,4	98,7	87,0	85,6	89,7	91,7	93,5	95,5
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
98,1	95,0	94,1	94,5	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	90,8	91,8	91,7	96,1	93,7	92,2
C9	C10	C11	C12	C13	C14	C15	
88,6	83,8	82,8	88,8	91,3	92,9	86,6	

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
3952 K	93,0	70,1	89,8	98,3	92,1	0,384	0,382	0,225	0,336	0,0015



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TM30 details

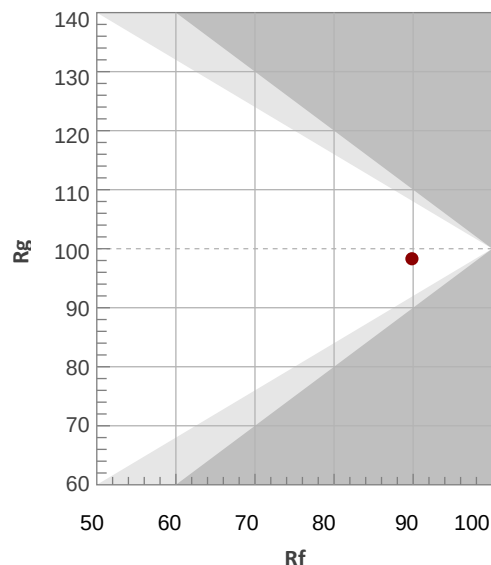
Rf 89,8

Fidelity index R_f

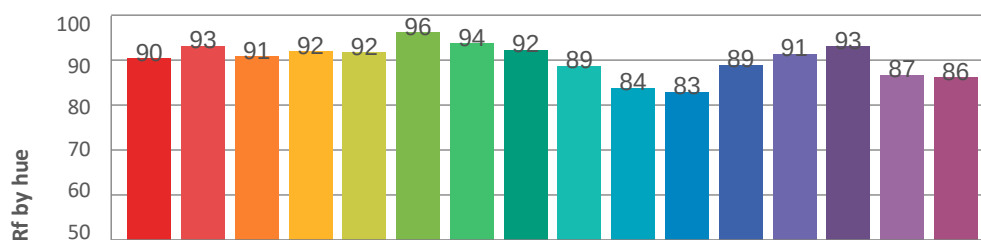
Rg 98,3

Gammut index Rg

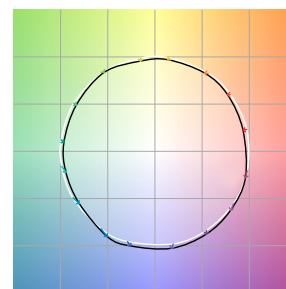
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	90	-4%	0%
2	93	-3%	1%
3	91	-2%	4%
4	92	-2%	2%
5	92	-3%	1%
6	96	-1%	0%
7	94	-3%	0%
8	92	-3%	2%
9	89	-3%	7%
10	84	-2%	9%
11	83	3%	10%
12	89	4%	4%
13	91	4%	-3%
14	93	3%	-2%
15	87	1%	-8%
16	86	0%	-7%



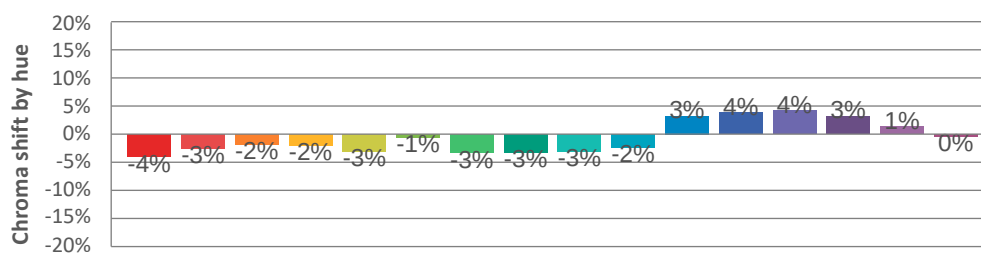
Hue binH



Color vector graphics



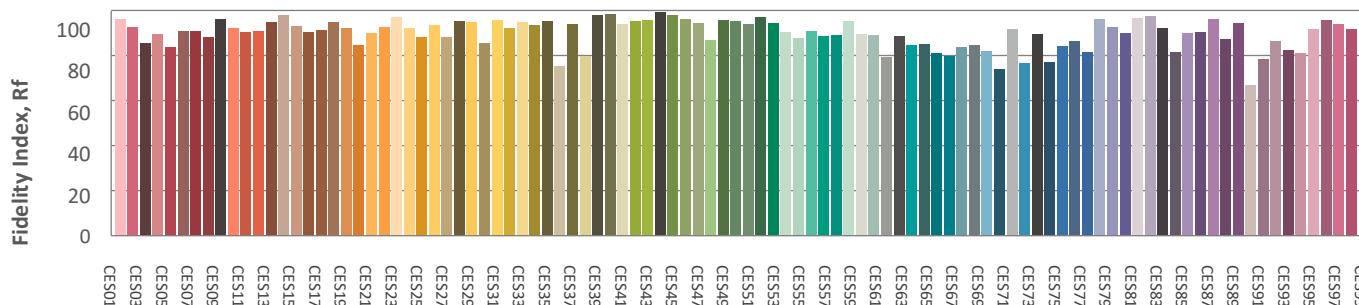
Hue bin



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	20,9	21,6	21,1	21,8	22,0	20,9	21,6	21,1	21,8	22,0
	3H	21,0	21,6	21,2	21,8	22,1	21,0	21,6	21,2	21,8	22,1
	4H	21,0	21,6	21,3	21,9	22,2	21,0	21,6	21,3	21,9	22,2
	6H	21,1	21,6	21,4	21,9	22,2	21,1	21,6	21,4	21,9	22,2
	8H	21,1	21,6	21,4	21,9	22,2	21,1	21,6	21,4	21,9	22,2
	12H	21,0	21,5	21,4	21,9	22,2	21,0	21,5	21,4	21,9	22,2
4H	2H	20,8	21,4	21,1	21,6	21,9	20,8	21,4	21,1	21,6	21,9
	3H	21,0	21,5	21,3	21,8	22,1	21,0	21,5	21,3	21,8	22,1
	4H	21,1	21,5	21,5	21,9	22,2	21,1	21,5	21,5	21,9	22,2
	6H	21,2	21,6	21,6	21,9	22,3	21,2	21,6	21,6	21,9	22,3
	8H	21,2	21,5	21,6	21,9	22,3	21,2	21,5	21,6	21,9	22,3
	12H	21,2	21,5	21,7	21,9	22,3	21,2	21,5	21,7	21,9	22,3
8H	4H	21,1	21,4	21,5	21,8	22,2	21,1	21,4	21,5	21,8	22,2
	6H	21,2	21,5	21,7	21,9	22,4	21,2	21,5	21,7	21,9	22,4
	8H	21,3	21,5	21,8	21,9	22,4	21,3	21,5	21,8	21,9	22,4
	12H	21,3	21,5	21,8	21,9	22,5	21,3	21,5	21,8	21,9	22,5
12H	4H	21,1	21,3	21,5	21,8	22,2	21,1	21,3	21,5	21,8	22,2
	6H	21,2	21,4	21,7	21,9	22,4	21,2	21,4	21,7	21,9	22,4
	8H	21,3	21,4	21,8	21,9	22,4	21,3	21,4	21,8	21,9	22,4
Variation of the observer position for the luminaire distance S											
S = 1,0H		+3,6 / -3,4					+3,6 / -3,4				
S = 1,5H		+6,1 / -3,8					+6,1 / -3,8				
S = 2,0H		+8,0 / -4,2					+8,0 / -4,2				
Standard table		BK01					BK01				
Correction summand		3,1					3,1				
Corrected glare indices referring to 2817lm total luminous flux											



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