

LM-79

Test Report

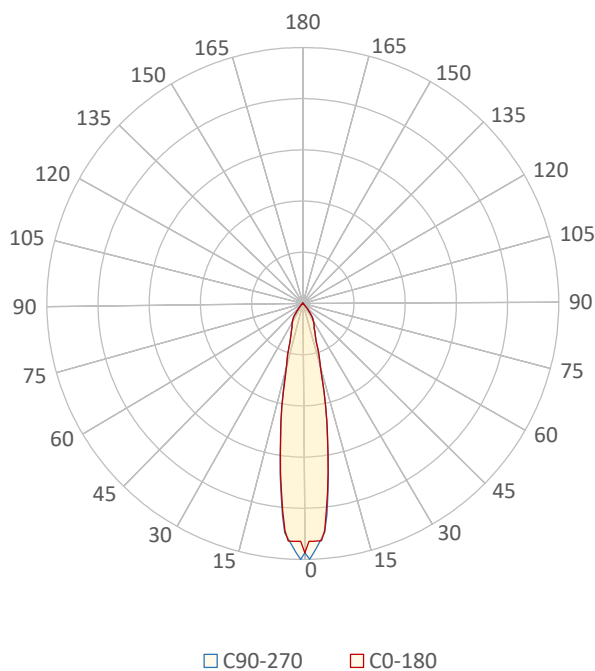
LM79-MIKA-3000K-CRI80-SPOT

General Description

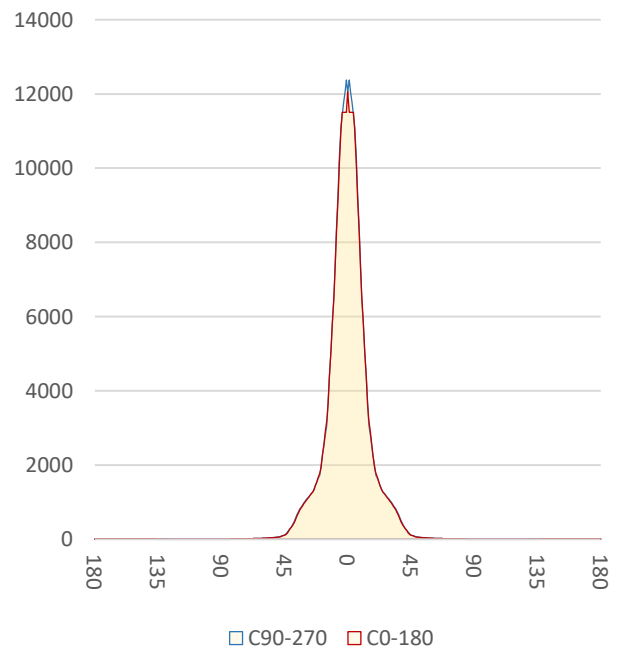
Item number	M-XXX-3-1-3080-1
Date and time	25-11-2016 13:36:21
CCT (Kelvin)	3092 K
Beam angle	20,4°
Luminous flux	3053 lm
Efficiency	106 lm/watt
Weighted energy	28,7 kWh/1000h
Power factor	0,99
CRI (RA)	81,6
Fidelity index Rf	Rf 82,9
Gammut index Rg	Rg 95,9
Peak	12605 cd



Polar diagram



Cartesian diagram



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Beam details	1m	2m	3m	4m	5m														
Lux*	12056 lx	3014 lx	1340 lx	753 lx	482 lx														
*measured at center of beam																			
Footcandles*	1120,0 fcd	280,0 fcd	124,4 fcd	70,0 fcd	44,8 fcd														
Beam width (meter)	0,4 m	0,8 m	1,1 m	1,5 m	1,9 m														
Beam width (Feet)	1,2 ft	2,5 ft	3,7 ft	4,9 ft	6,2 ft														
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
12056lx	3014lx	1340lx	753lx	482lx	335lx	246lx	188lx	149lx	121lx	100lx	84lx	71lx	62lx	54lx	47lx	42lx	37lx	33lx	30lx
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
1120fcd	280fcd	124,4fcd	70fcd	44,8fcd	31,1fcd	22,9fcd	17,5fcd	13,8fcd	11,2fcd	9,3fcd	7,8fcd	6,6fcd	5,7fcd	5fcd	4,4fcd	3,9fcd	3,5fcd	3,1fcd	2,8fcd
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°
12,1K	11,5K	11,5K	10,1K	8,3K	6,5K	5,1K	3,7K	2,9K	2,3K	1,8K	1,6K	1,3K	1,2K	1,1K	1,0K	0,9K	0,8K	0,6K	0,5K
100%	95%	95%	84%	69%	54%	42%	30%	24%	19%	15%	13%	11%	10%	9%	8%	8%	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°
12,1K	12,1K	11,4K	10,3K	8,4K	6,5K	5,1K	3,7K	2,8K	2,3K	1,7K	1,5K	1,4K	1,2K	1,1K	1,0K	0,9K	0,8K	0,7K	0,5K
100%	100%	95%	85%	70%	54%	42%	31%	23%	19%	14%	13%	11%	10%	9%	9%	8%	7%	6%	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°
12,1K	11,5K	11,5K	10,1K	8,3K	6,5K	5,1K	3,7K	2,9K	2,3K	1,8K	1,6K	1,3K	1,2K	1,1K	1,0K	0,9K	0,8K	0,6K	0,5K
100%	95%	95%	84%	69%	54%	42%	30%	24%	19%	15%	13%	11%	10%	9%	8%	8%	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°
12,1K	12,1K	11,4K	10,3K	8,4K	6,5K	5,1K	3,7K	2,8K	2,3K	1,7K	1,5K	1,4K	1,2K	1,1K	1,0K	0,9K	0,8K	0,7K	0,5K
100%	100%	95%	85%	70%	54%	42%	31%	23%	19%	14%	13%	11%	10%	9%	9%	8%	7%	6%	4%
Beam angle 50%		Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone					
21,3°		52,8°				81,4°				98,2%				95,9%					



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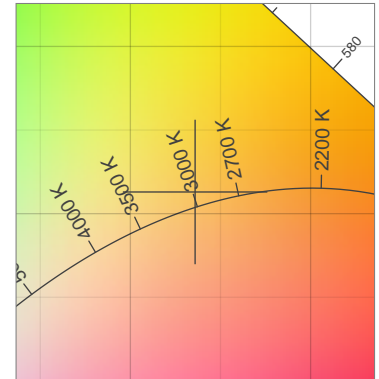
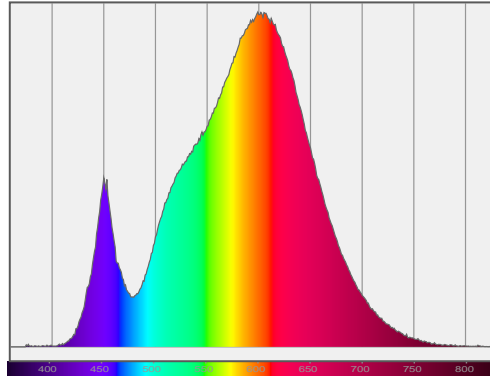
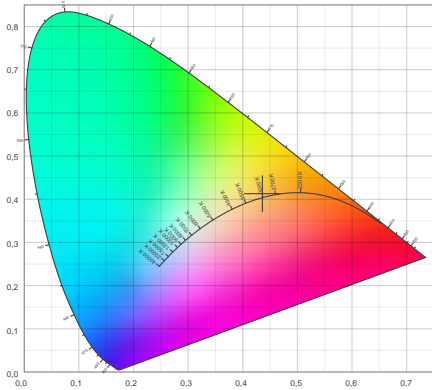
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Color details



CIE 1931

x: 0,436



Spectra

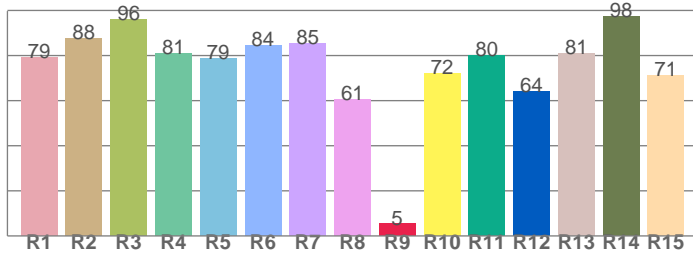
CIE 1931 ZOOM

3092 K

y: 0,413

Δuv : 0,0037

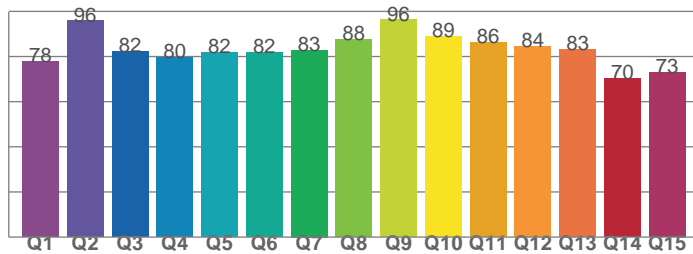
CRI: 81,6 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
79,2	87,7	96,0	81,1	78,8	84,4	85,3	60,5
R9	R10	R11	R12	R13	R14	R15	
5,4	71,9	80,0	64,0	80,9	97,6	71,0	

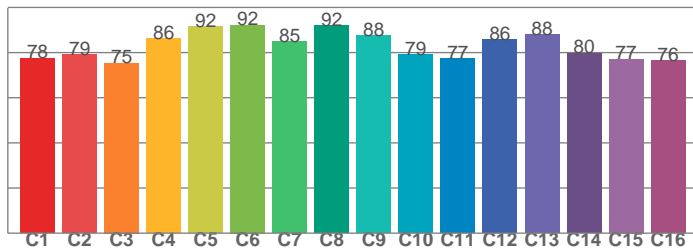
CQS: 81,9



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
77,7	95,8	82,1	79,7	81,9	81,7	82,9	87,5
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,2	89,0	86,3	84,4	83,1	70,1	72,9	

TM30: 82,9



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

C1	C2	C3	C4	C5	C6	C7	C8
77,5	79,2	75,4	86,1	91,6	92,3	85,0	92,0
C9	C10	C11	C12	C13	C14	C15	
87,6	79,0	77,3	85,7	88,0	79,7	77,2	

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
3092 K	81,6	5,4	82,9	95,9	81,9	0,436	0,413	0,246	0,350	0,0037



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TM30 details

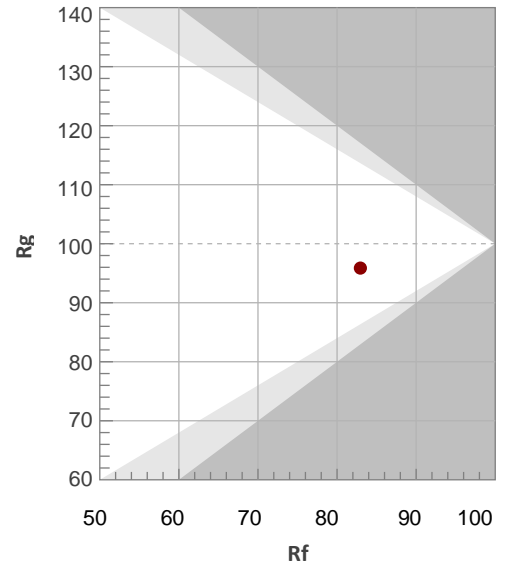
Rf 82,9

Fidelity index Rf

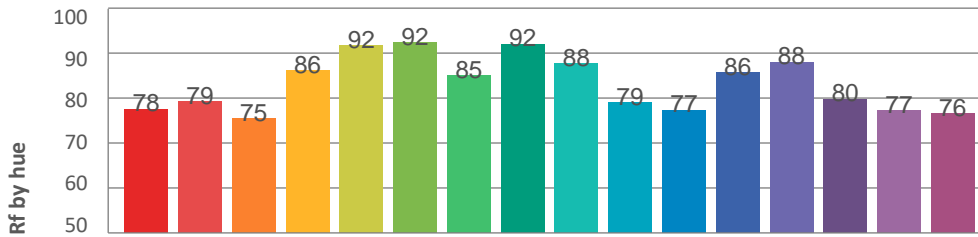
Rg 95,9

Gamut index Rg

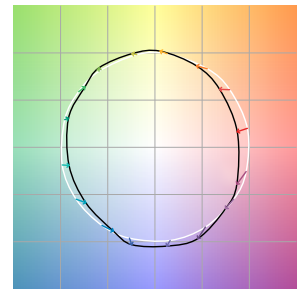
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	78	-11%	-1%
2	79	-9%	6%
3	75	-4%	11%
4	86	1%	8%
5	92	2%	5%
6	92	3%	-2%
7	85	-3%	-8%
8	92	-4%	-2%
9	88	-7%	2%
10	79	-6%	9%
11	77	-2%	13%
12	86	6%	4%
13	88	5%	-5%
14	80	6%	-13%
15	77	-2%	-13%
16	76	-7%	-15%



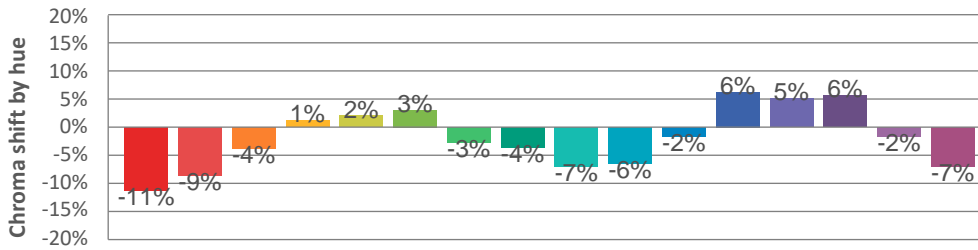
Hue binH



Color vector graphics



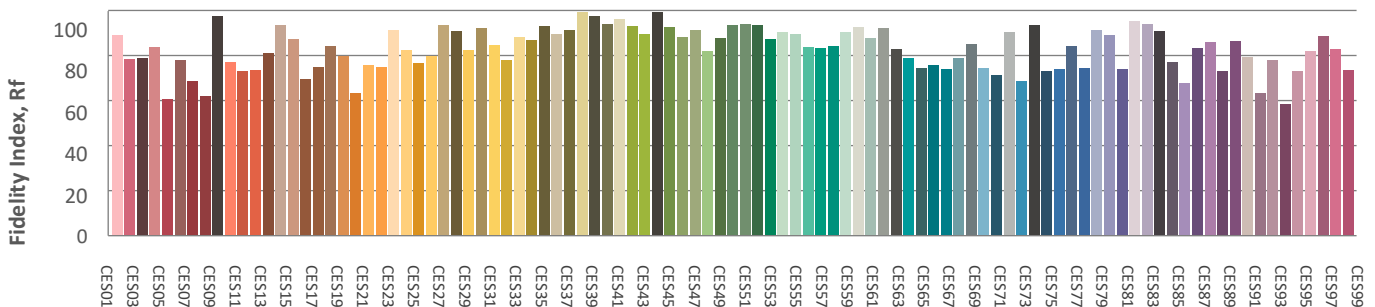
Hue bin



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	21,1	21,8	21,3	22,0	22,2	21,2	21,9	21,5	22,1	22,3
	3H	21,1	21,7	21,4	22,0	22,2	21,2	21,9	21,5	22,1	22,3
	4H	21,1	21,7	21,4	22,0	22,3	21,3	21,9	21,6	22,1	22,4
	6H	21,1	21,7	21,5	22,0	22,3	21,3	21,8	21,6	22,1	22,4
	8H	21,1	21,6	21,5	21,9	22,2	21,3	21,8	21,6	22,1	22,4
	12H	21,1	21,6	21,4	21,9	22,2	21,2	21,7	21,6	22,0	22,4
4H	2H	21,0	21,5	21,3	21,8	22,1	21,1	21,7	21,4	21,9	22,2
	3H	21,1	21,6	21,4	21,9	22,2	21,2	21,7	21,5	22,0	22,3
	4H	21,1	21,6	21,5	21,9	22,3	21,3	21,7	21,6	22,0	22,4
	6H	21,2	21,5	21,6	21,9	22,3	21,3	21,7	21,7	22,0	22,4
	8H	21,2	21,5	21,6	21,9	22,3	21,3	21,6	21,7	22,0	22,4
	12H	21,2	21,4	21,6	21,8	22,3	21,3	21,6	21,7	22,0	22,4
8H	4H	21,1	21,4	21,5	21,8	22,2	21,2	21,5	21,6	21,9	22,3
	6H	21,2	21,4	21,6	21,8	22,3	21,3	21,5	21,8	22,0	22,4
	8H	21,2	21,4	21,6	21,8	22,3	21,3	21,5	21,8	22,0	22,4
	12H	21,2	21,3	21,7	21,8	22,3	21,3	21,5	21,8	21,9	22,4
12H	4H	21,1	21,3	21,5	21,7	22,2	21,2	21,5	21,6	21,9	22,3
	6H	21,1	21,3	21,6	21,8	22,3	21,3	21,5	21,7	21,9	22,4
	8H	21,1	21,3	21,6	21,8	22,3	21,3	21,5	21,8	21,9	22,4
Variation of the observer position for the luminaire distance S											
S = 1,0H	+3,8 / -4,3					+3,8 / -4,2					
S = 1,5H	+6,4 / -4,8					+6,4 / -4,7					
S = 2,0H	+8,3 / -5,2					+8,4 / -5,2					
Standard table	BK01					BK01					
Correction summand	3,1					3,3					
Corrected glare indices referring to 3053lm total luminous flux											