

# LM-79

## Test Report

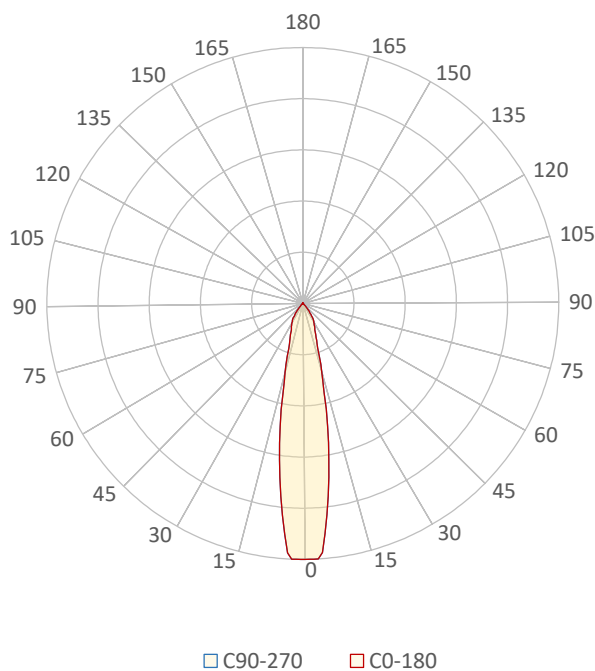
### LM79-MIKA-3000K-CRI90-SPOT

#### General Description

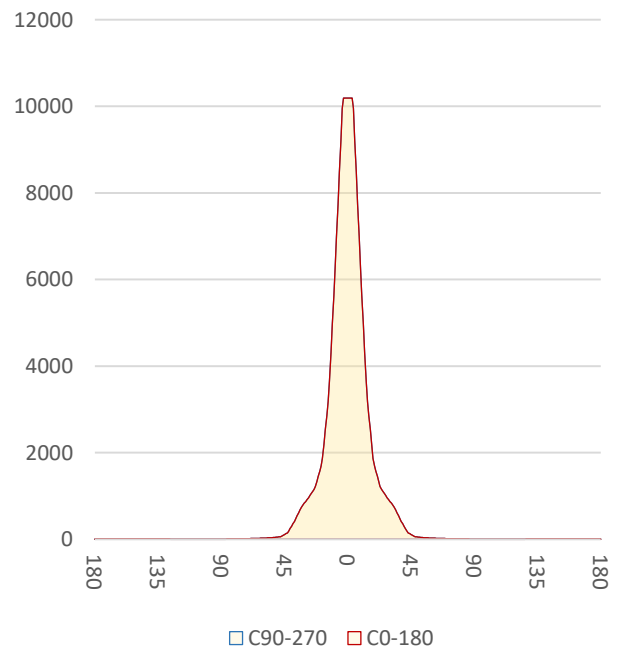
Item number	M-XXX-3-1-3090-1
Date and time	27-1-2017 13:58:32
CCT (Kelvin)	3115 K
Beam angle	21,6°
Luminous flux	2620 lm
Efficiency	94 lm/watt
Weighted energy	28,0 kWh/1000h
Power factor	0,95
CRI (RA)	92,2
Fidelity index Rf	Rf 90,3
Gammut index Rg	Rg 101,1
Peak	10190 cd



Polar diagram



Cartesian diagram



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Beam details	1m	2m	3m	4m	5m														
Lux*	10190 lx	2547 lx	1132 lx	637 lx	408 lx														
*measured at center of beam																			
Footcandles*	946,7 fcd	236,7 fcd	105,2 fcd	59,2 fcd	37,9 fcd														
Beam width (meter)	0,4 m	0,8 m	1,1 m	1,5 m	1,9 m														
Beam width (Feet)	1,3 ft	2,5 ft	3,8 ft	5 ft	6,3 ft														
<b>Beam intensities</b>																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
10190lx	2547lx	1132lx	637lx	408lx	283lx	208lx	159lx	126lx	102lx	84lx	71lx	60lx	52lx	45lx	40lx	35lx	31lx	28lx	25lx
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
946,7fcd	236,7fcd	105,2fcd	59,2fcd	37,9fcd	26,3fcd	19,3fcd	14,8fcd	11,7fcd	9,5fcd	7,8fcd	6,6fcd	5,6fcd	4,8fcd	4,2fcd	3,7fcd	3,3fcd	2,9fcd	2,6fcd	2,4fcd
<b>Intensities in 0° c-plane</b>																			
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
10,2K	10,2K	9,9K	8,5K	7,0K	5,6K	4,3K	3,2K	2,5K	1,9K	1,6K	1,3K	1,2K	1,1K	1,0K	0,9K	0,8K	0,7K	0,5K	0,4K
100%	100%	98%	83%	69%	55%	42%	31%	25%	18%	15%	13%	11%	10%	9%	9%	8%	7%	5%	4%
<b>Intensities in 90° c-plane</b>																			
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
10,2K	10,2K	9,9K	8,5K	7,0K	5,6K	4,3K	3,2K	2,5K	1,9K	1,6K	1,3K	1,2K	1,1K	1,0K	0,9K	0,8K	0,7K	0,5K	0,4K
100%	100%	98%	83%	69%	55%	42%	31%	25%	18%	15%	13%	11%	10%	9%	9%	8%	7%	5%	4%
<b>Intensities in 180° c-plane</b>																			
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
10,2K	10,2K	9,9K	8,5K	7,0K	5,6K	4,3K	3,2K	2,5K	1,9K	1,6K	1,3K	1,2K	1,1K	1,0K	0,9K	0,8K	0,7K	0,5K	0,4K
100%	100%	98%	83%	69%	55%	42%	31%	25%	18%	15%	13%	11%	10%	9%	9%	8%	7%	5%	4%
<b>Intensities in 270° c-plane</b>																			
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
10,2K	10,2K	9,9K	8,5K	7,0K	5,6K	4,3K	3,2K	2,5K	1,9K	1,6K	1,3K	1,2K	1,1K	1,0K	0,9K	0,8K	0,7K	0,5K	0,4K
100%	100%	98%	83%	69%	55%	42%	31%	25%	18%	15%	13%	11%	10%	9%	9%	8%	7%	5%	4%
Beam angle 50%		Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone					
21,6°		53,6°				81,8°				97,9%				95,7%					



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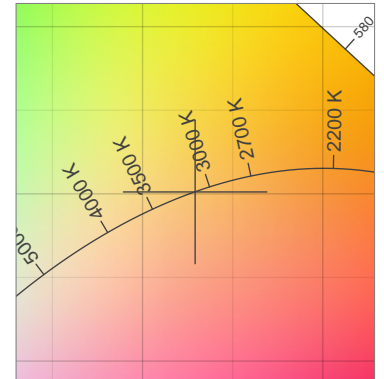
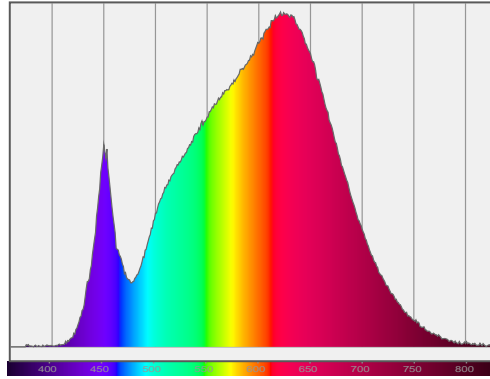
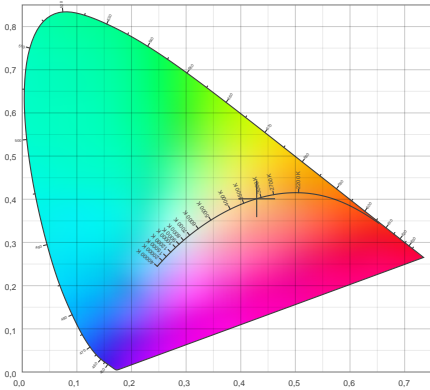
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# LM79-MIKA-3000K-CRI90-SPOT

### Color details



CIE 1931

x: 0,429



Spectra

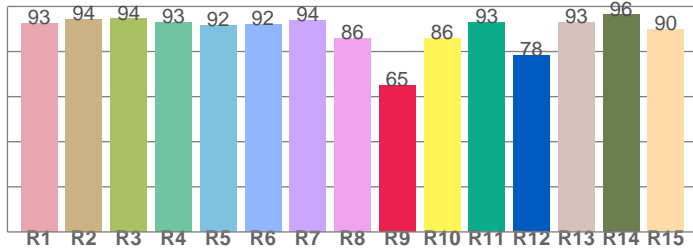
CIE 1931 ZOOM

3115 K

y: 0,401

$\Delta uv$ : 0,0001

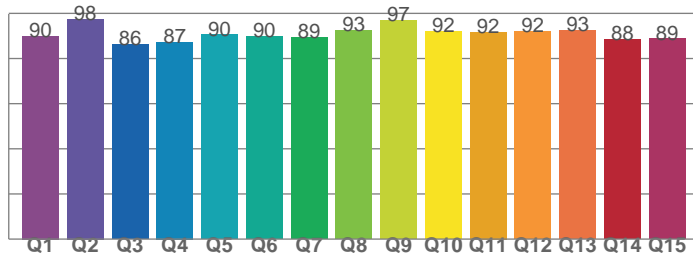
CRI: 92,2 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
92,6	94,3	94,5	93,0	91,8	92,1	94,0	85,7
R9	R10	R11	R12	R13	R14	R15	
65,2	85,7	93,1	78,4	92,8	96,2	89,9	

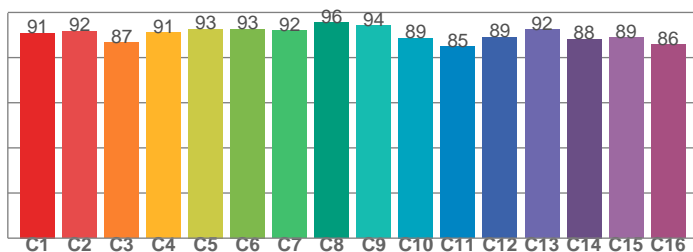
CQS: 90,4



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
90,0	97,5	86,2	87,3	90,5	89,7	89,3	92,6
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,8	92,1	91,8	92,1	92,6	88,4	88,7	

TM30: 90,3



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

C1	C2	C3	C4	C5	C6	C7	C8
90,9	91,7	86,7	91,0	92,7	92,7	92,1	95,6
C9	C10	C11	C12	C13	C14	C15	
94,1	88,7	84,9	89,0	92,5	88,3	88,9	

### 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	$\Delta uv$
3115 K	92,2	65,2	90,3	101,1	90,4	0,429	0,401	0,247	0,346	0,0001



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### TM30 details

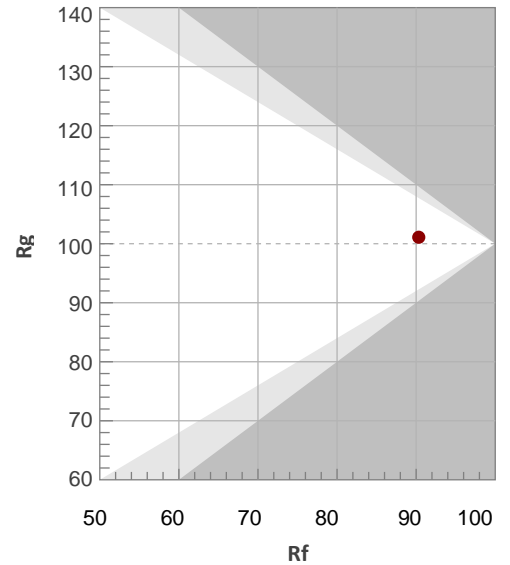
Rf 90,3

Fidelity index Rf

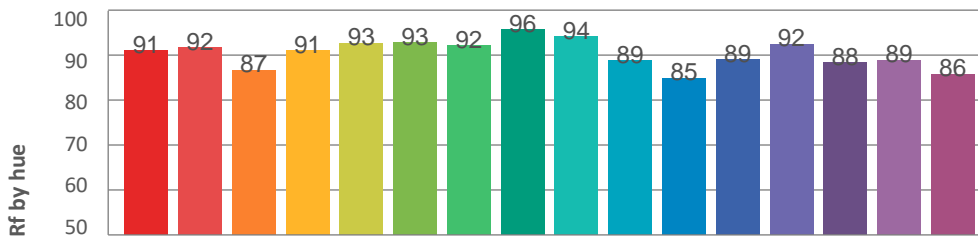
Rg 101,1

Gamut index Rg

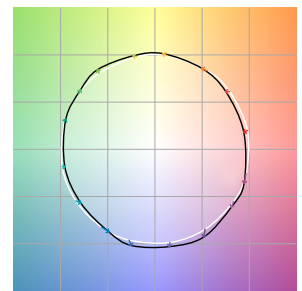
Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	91	-4%	-1%
2	92	-3%	3%
3	87	-1%	6%
4	91	1%	5%
5	93	2%	3%
6	93	4%	0%
7	92	1%	-4%
8	96	-1%	-2%
9	94	-3%	1%
10	89	-3%	5%
11	85	0%	9%
12	89	5%	4%
13	92	4%	-1%
14	88	6%	-6%
15	89	1%	-6%
16	86	0%	-10%



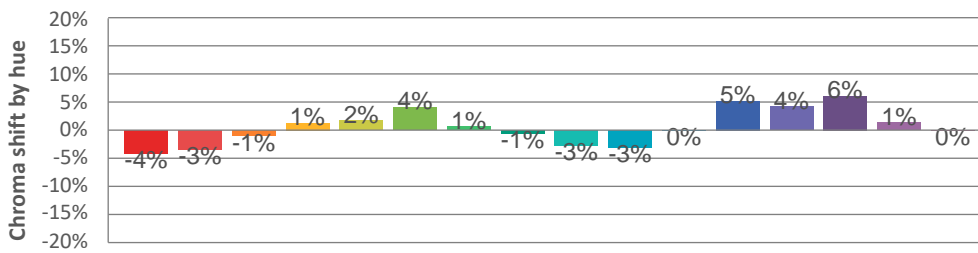
### Hue binH



### Color vector graphics



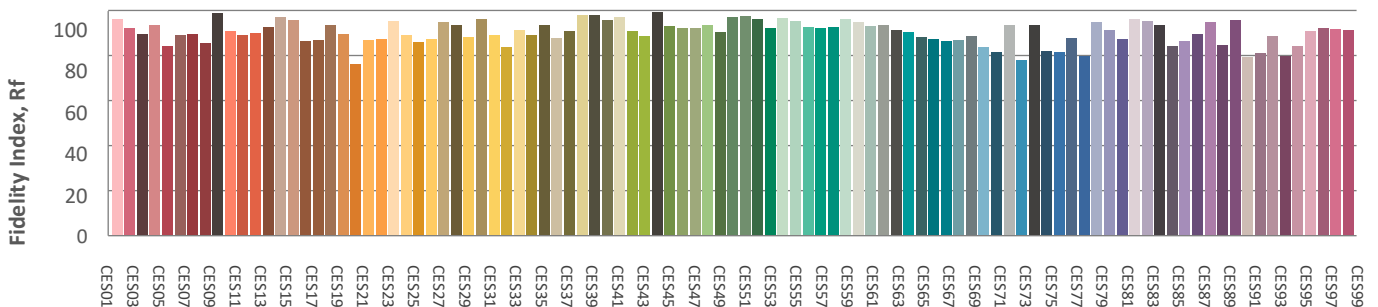
### Hue bin



### 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	20,6	21,3	20,8	21,5	21,7	20,6	21,3	20,8	21,5	21,7
	3H	20,6	21,3	20,9	21,5	21,8	20,6	21,3	20,9	21,5	21,8
	4H	20,7	21,3	21,0	21,5	21,8	20,7	21,3	21,0	21,5	21,8
	6H	20,7	21,3	21,0	21,6	21,8	20,7	21,3	21,0	21,6	21,8
	8H	20,7	21,2	21,1	21,5	21,8	20,7	21,2	21,1	21,5	21,8
	12H	20,7	21,2	21,1	21,5	21,8	20,7	21,2	21,1	21,5	21,8
4H	2H	20,5	21,1	20,8	21,3	21,6	20,5	21,1	20,8	21,3	21,6
	3H	20,6	21,1	21,0	21,4	21,8	20,6	21,1	21,0	21,4	21,8
	4H	20,7	21,2	21,1	21,5	21,9	20,7	21,2	21,1	21,5	21,9
	6H	20,8	21,2	21,2	21,5	21,9	20,8	21,2	21,2	21,5	21,9
	8H	20,8	21,2	21,3	21,6	22,0	20,8	21,2	21,3	21,6	22,0
	12H	20,9	21,1	21,3	21,5	22,0	20,9	21,1	21,3	21,5	22,0
8H	4H	20,7	21,0	21,1	21,4	21,8	20,7	21,0	21,1	21,4	21,8
	6H	20,8	21,1	21,3	21,5	22,0	20,8	21,1	21,3	21,5	22,0
	8H	20,9	21,1	21,4	21,5	22,0	20,9	21,1	21,4	21,5	22,0
	12H	20,9	21,1	21,4	21,6	22,1	20,9	21,1	21,4	21,6	22,1
12H	4H	20,7	21,0	21,1	21,4	21,8	20,7	21,0	21,1	21,4	21,8
	6H	20,8	21,0	21,3	21,5	22,0	20,8	21,0	21,3	21,5	22,0
	8H	20,9	21,0	21,4	21,5	22,0	20,9	21,0	21,4	21,5	22,0
Variation of the observer position for the luminaire distance S											
S = 1,0H	+3,5 / -3,6					+3,5 / -3,6					
S = 1,5H	+6,0 / -4,0					+6,0 / -4,0					
S = 2,0H	+7,9 / -4,4					+7,9 / -4,4					
Standard table	BK01					BK01					
Correction summand	2,8					2,8					
Corrected glare indices referring to 2620lm total luminous flux											



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