

# LM-79

## Test Report

LM79-RUBY-BRACKET-7-2700K-CRI80-MEDIUM

### General Description

Item number	RU-37-X-X-01-2-X	
Date and time	21-11-2016 09:23:44	
CCT (Kelvin)	2697 K	
Beam angle	50°	
Luminous flux	3382 lm	
Efficiency	82 lm/watt	
Weighted energy	41,3 kWh/1000h	
Power factor	0,95	
CRI (RA)	81,1	
Fidelity index Rf	Rf 81,5	
Gammut index Rg	Rg 96,6	
Peak	4339 cd	



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Beam details	1m	2m	3m	4m	5m																			
Lux*	4333 lx	1083 lx	481 lx	271 lx	173 lx																			
*measured at center of beam																								
Footcandles*	402,5 fcd	100,6 fcd	44,7 fcd	25,2 fcd	16,1 fcd																			
Beam width (meter)	0,9 m	1,9 m	2,8 m	3,7 m	4,7 m																			
Beam width (Feet)	3,1 ft	6,1 ft	9,2 ft	12,2 ft	15,3 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					
4333lx	1083lx	481lx	271lx	173lx	120lx	88lx	68lx	53lx	43lx	36lx	30lx	26lx	22lx	19lx	17lx	15lx	13lx	12lx	11lx					
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					
402,5fcd	100,6fcd	44,7fcd	25,2fcd	16,1fcd	11,2fcd	8,2fcd	6,3fcd	5fcd	4fcd	3,3fcd	2,8fcd	2,4fcd	2,1fcd	1,8fcd	1,6fcd	1,4fcd	1,2fcd	1,1fcd	1fcd					
<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°					
4333	4326	4323	4320	4283	4176	4068	3808	3523	3216	2877	2539	2289	2046	1839	1670	1501	1290	1079	848					
100%	100%	100%	100%	99%	96%	94%	88%	81%	74%	66%	59%	53%	47%	42%	39%	35%	30%	25%	20%					
<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°					
4333	4339	4336	4331	4295	4186	4077	3813	3523	3214	2873	2533	2285	2044	1836	1665	1494	1281	1067	840					
100%	100%	100%	100%	99%	97%	94%	88%	81%	74%	66%	58%	53%	47%	42%	38%	34%	30%	25%	19%					
<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°					
4333	4326	4323	4320	4283	4176	4068	3808	3523	3216	2877	2539	2289	2046	1839	1670	1501	1290	1079	848					
100%	100%	100%	100%	99%	96%	94%	88%	81%	74%	66%	59%	53%	47%	42%	39%	35%	30%	25%	20%					
<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°					
4333	4339	4336	4331	4295	4186	4077	3813	3523	3214	2873	2533	2285	2044	1836	1665	1494	1281	1067	840					
100%	100%	100%	100%	99%	97%	94%	88%	81%	74%	66%	58%	53%	47%	42%	38%	34%	30%	25%	19%					
<b>Beam angle 50%</b>					<b>Field angle 10%</b>					<b>Cutoff angle 2,5%</b>					<b>Intensity ratio in 120° cone</b>					<b>Intensity ratio in 90° cone</b>				
50°					82,7°					96°					99,1%					96,7%				



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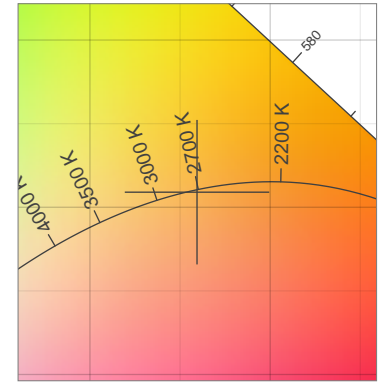
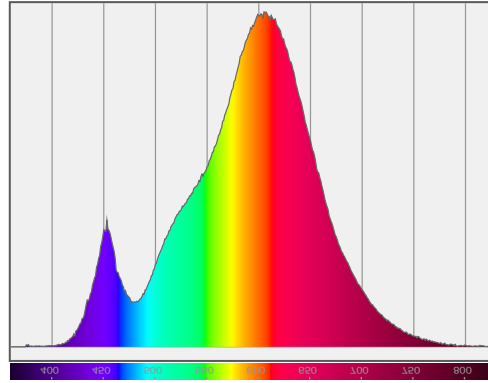
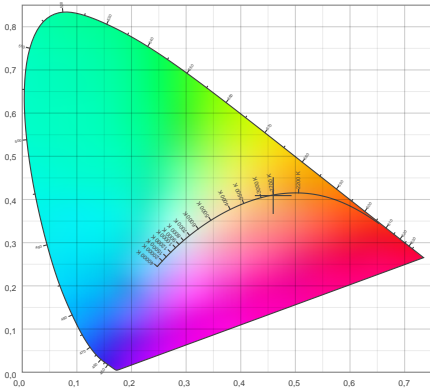
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### Color details



CIE 1931

x: 0,459



Spectra

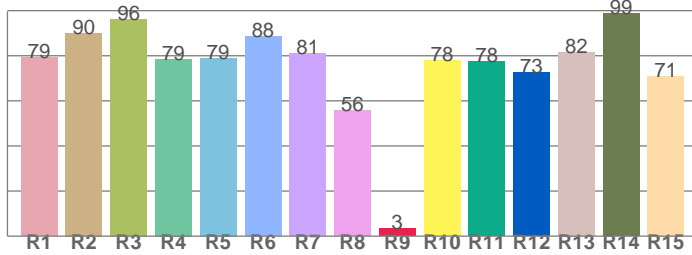
CIE 1931 ZOOM

2697 K

y: 0,409

$\Delta uv$ : 0,0006

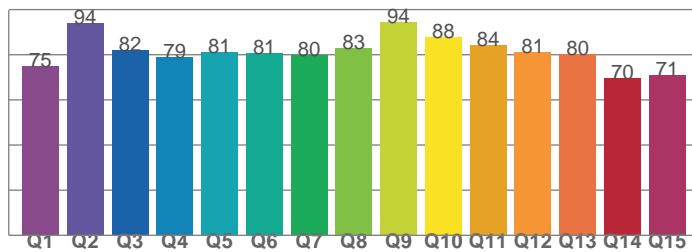
**CRI: 81,1 (R1-R8)**



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

R1	R2	R3	R4	R5	R6	R7	R8
79,2	90,1	96,3	78,6	79,0	88,4	81,1	55,8
R9	R10	R11	R12	R13	R14	R15	
3,5	77,8	77,6	72,5	81,6	98,7	71,0	

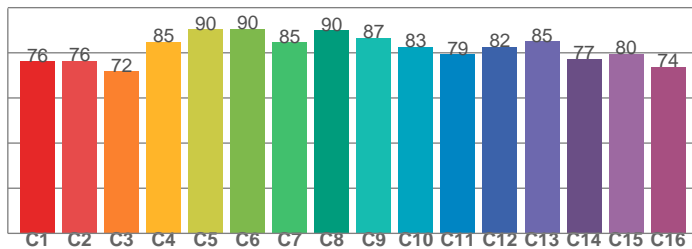
**CQS: 80,2**



*CQS values*

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
74,8	94,0	81,9	78,7	81,1	80,7	79,9	82,9
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
94,2	87,8	84,3	81,2	80,3	69,6	71,1	

**TM30: 81,5**



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

C1	C2	C3	C4	C5	C6	C7	C8
76,1	76,5	71,7	84,9	90,4	90,5	84,6	90,0
C9	C10	C11	C12	C13	C14	C15	
86,7	82,6	79,3	82,5	85,0	77,4	79,5	

### 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	$\Delta uv$
2697 K	81,1	3,5	81,5	96,6	80,2	0,459	0,409	0,263	0,351	0,0006



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### TM30 details

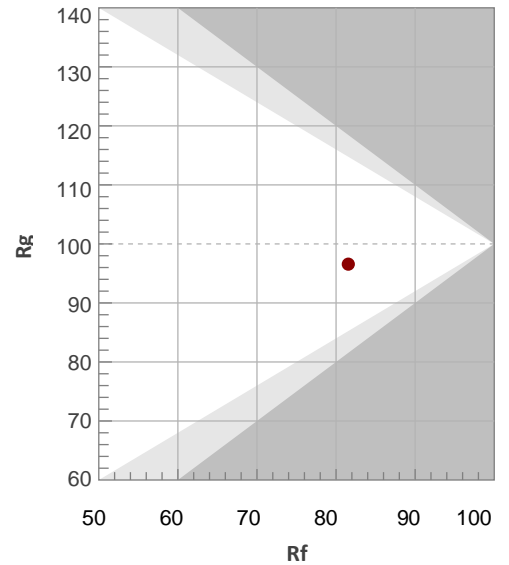
Rf 81,5

Fidelity index Rf

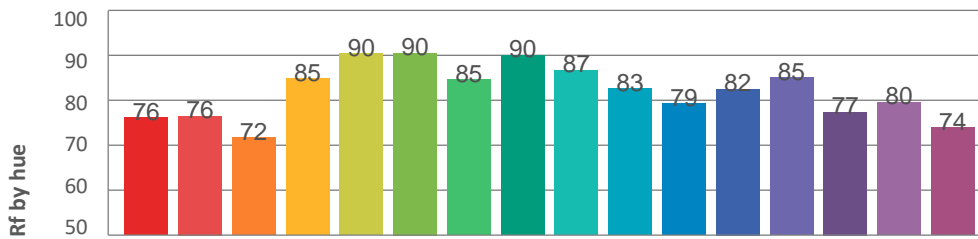
Rg 96,6

Gamut index Rg

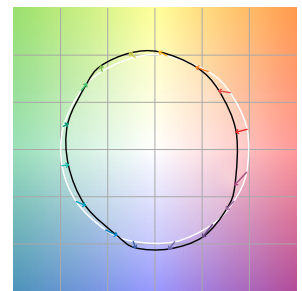
Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	76	-12%	-1%
2	76	-9%	8%
3	72	-3%	13%
4	85	3%	9%
5	90	5%	5%
6	90	6%	-2%
7	85	-1%	-9%
8	90	-4%	-4%
9	87	-7%	1%
10	83	-6%	8%
11	79	-2%	13%
12	82	6%	4%
13	85	6%	-7%
14	77	5%	-16%
15	80	-2%	-11%
16	74	-9%	-15%



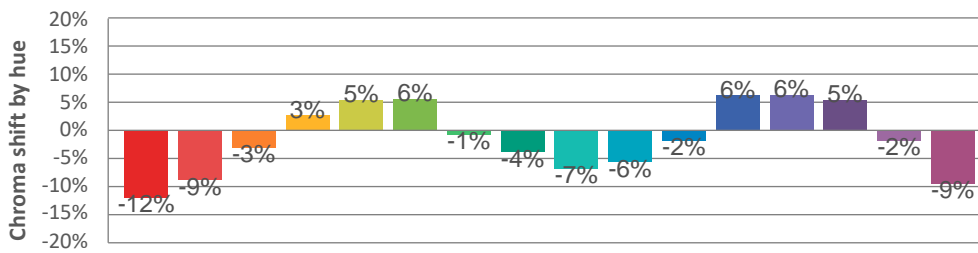
### Hue binH



### Color vector graphics



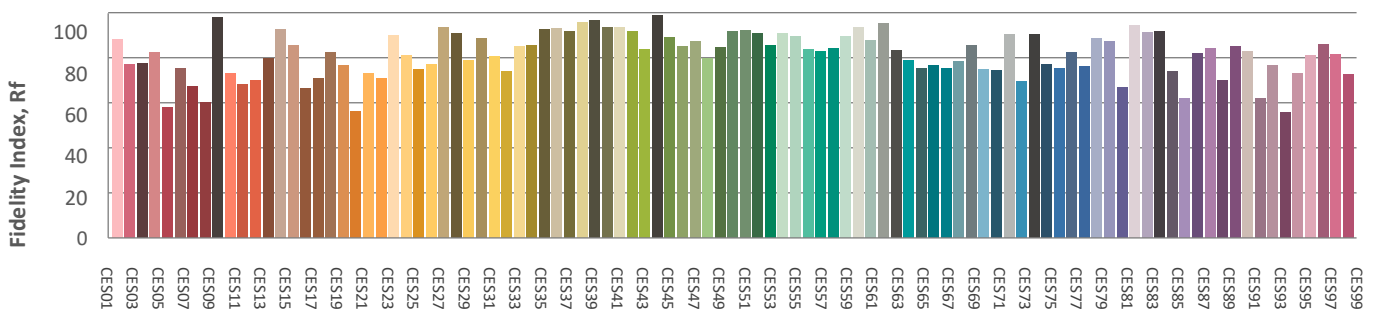
### Hue bin



### 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	20,8	21,5	21,1	21,7	21,9	20,8	21,5	21,1	21,7	21,9
	3H	20,7	21,3	21,0	21,6	21,8	20,7	21,3	21,0	21,6	21,8
	4H	20,6	21,2	20,9	21,5	21,8	20,6	21,2	20,9	21,5	21,8
	6H	20,6	21,1	20,9	21,4	21,7	20,6	21,1	20,9	21,4	21,7
	8H	20,5	21,0	20,9	21,3	21,6	20,5	21,0	20,9	21,3	21,6
	12H	20,5	21,0	20,8	21,3	21,6	20,5	21,0	20,8	21,3	21,6
4H	2H	20,6	21,2	21,0	21,5	21,8	20,6	21,2	21,0	21,5	21,8
	3H	20,5	21,0	20,9	21,3	21,6	20,5	21,0	20,9	21,3	21,6
	4H	20,4	20,8	20,8	21,2	21,5	20,4	20,8	20,8	21,2	21,5
	6H	20,4	20,7	20,8	21,1	21,5	20,4	20,7	20,8	21,1	21,5
	8H	20,3	20,6	20,7	21,0	21,4	20,3	20,6	20,7	21,0	21,4
	12H	20,3	20,5	20,7	21,0	21,4	20,3	20,5	20,7	21,0	21,4
8H	4H	20,3	20,6	20,7	21,0	21,4	20,3	20,6	20,7	21,0	21,4
	6H	20,2	20,5	20,7	20,9	21,3	20,2	20,5	20,7	20,9	21,3
	8H	20,2	20,4	20,7	20,8	21,3	20,2	20,4	20,7	20,8	21,3
	12H	20,1	20,3	20,6	20,8	21,3	20,1	20,3	20,6	20,8	21,3
12H	4H	20,3	20,5	20,7	20,9	21,4	20,3	20,5	20,7	20,9	21,4
	6H	20,2	20,4	20,7	20,8	21,3	20,2	20,4	20,7	20,8	21,3
	8H	20,1	20,3	20,6	20,8	21,3	20,1	20,3	20,6	20,8	21,3
Variation of the observer position for the luminaire distance S											
S = 1,0H	+4,6 / -11,1					+4,6 / -11,1					
S = 1,5H	+7,4 / -14,5					+7,4 / -14,5					
S = 2,0H	+9,4 / -17,5					+9,4 / -17,5					
Standard table	BK00					BK00					
Correction summand	2,2					2,2					
Corrected glare indices referring to 3382lm total luminous flux											



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