

# LM-79

## Test Report

LM79-RUBY-BRACKET-6-4000K-CRI80-MEDIUM

### General Description

Item number	RU-36-X-X-03-2-X
Date and time	18-11-2016 15:30:57
CCT (Kelvin)	3837 K
Beam angle	49,6°
Luminous flux	3057 lm
Efficiency	106 lm/watt
Weighted energy	28,8 kWh/1000h
Power factor	0,99
CRI (RA)	82,5
Fidelity index Rf	Rf 82,7
Gammut index Rg	Rg 97,7
Peak	3932 cd



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Beam details	1m	2m	3m	4m	5m																			
<b>Lux*</b>	3916 lx	979 lx	435 lx	245 lx	157 lx																			
<i>*measured at center of beam</i>																								
<b>Footcandles*</b>	363,9 fcd	91,0 fcd	40,4 fcd	22,7 fcd	14,6 fcd																			
<b>Beam width (meter)</b>	0,9 m	1,8 m	2,8 m	3,7 m	4,6 m																			
<b>Beam width (Feet)</b>	3 ft	6,1 ft	9,1 ft	12,1 ft	15,2 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					
3916lx	979lx	435lx	245lx	157lx	109lx	80lx	61lx	48lx	39lx	32lx	27lx	23lx	20lx	17lx	15lx	14lx	12lx	11lx	10lx					
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					
363,9fcd	91fcd	40,4fcd	22,7fcd	14,6fcd	10,1fcd	7,4fcd	5,7fcd	4,5fcd	3,6fcd	3fcd	2,5fcd	2,2fcd	1,9fcd	1,6fcd	1,4fcd	1,3fcd	1,1fcd	1fcd	0,9fcd					
<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°					
3916	3906	3911	3894	3855	3810	3618	3426	3177	2885	2596	2328	2061	1849	1672	1499	1344	1189	979	741					
100%	100%	100%	99%	98%	97%	92%	87%	81%	74%	66%	59%	53%	47%	43%	38%	34%	30%	25%	19%					
<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°					
3916	3927	3929	3930	3902	3797	3691	3453	3184	2902	2594	2286	2056	1839	1647	1494	1341	1148	952	750					
100%	100%	100%	100%	100%	97%	94%	88%	81%	74%	66%	58%	53%	47%	42%	38%	34%	29%	24%	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°					
3916	3906	3911	3894	3855	3810	3618	3426	3177	2885	2596	2328	2061	1849	1672	1499	1344	1189	979	741					
100%	100%	100%	99%	98%	97%	92%	87%	81%	74%	66%	59%	53%	47%	43%	38%	34%	30%	25%	19%					
<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°					
3916	3927	3929	3930	3902	3797	3691	3453	3184	2902	2594	2286	2056	1839	1647	1494	1341	1148	952	750					
100%	100%	100%	100%	100%	97%	94%	88%	81%	74%	66%	58%	53%	47%	42%	38%	34%	29%	24%	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>				
49,6°					83,1°					96,5°					98,9%					96,3%				



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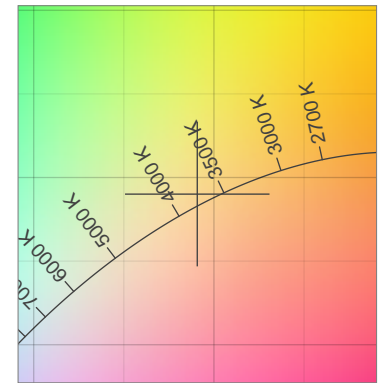
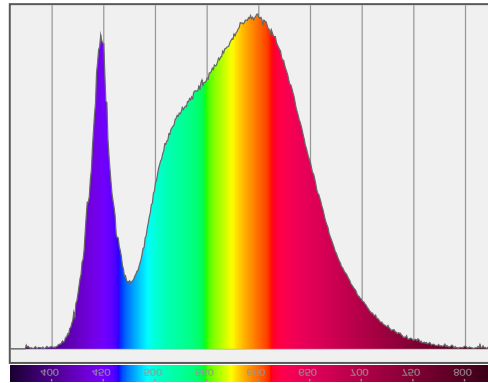
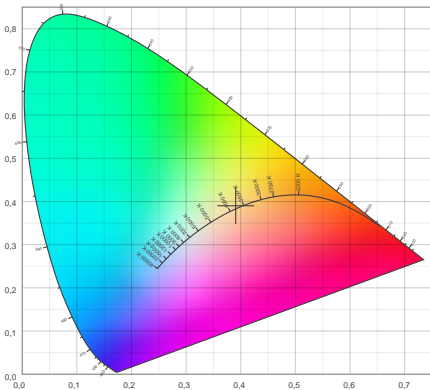
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### Color details



CIE 1931

x: 0,391



Spectra

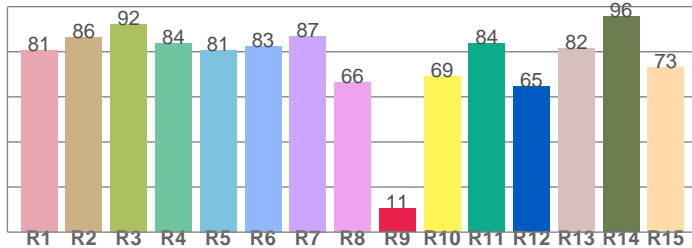
CIE 1931 ZOOM

3837 K

y: 0,390

$\Delta uv$ : 0,0032

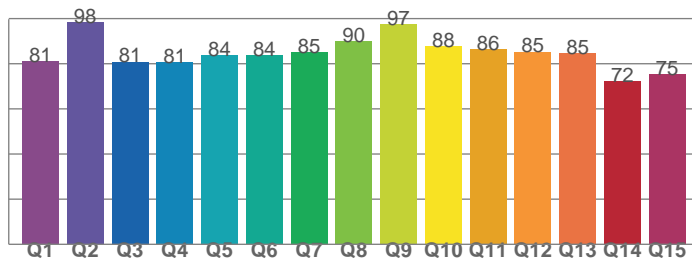
**CRI: 82,5 (R1-R8)**



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

R1	R2	R3	R4	R5	R6	R7	R8
80,7	86,5	92,3	83,8	80,8	82,5	87,0	66,4
R9	R10	R11	R12	R13	R14	R15	
10,6	69,0	83,7	64,5	81,6	95,6	73,3	

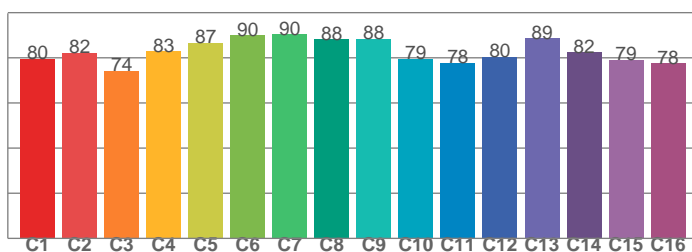
**CQS: 83,4**



*CQS values*

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
81,0	98,3	80,9	80,5	83,9	83,6	85,2	89,8
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
97,3	87,8	86,3	85,3	84,8	72,4	75,4	

**TM30: 82,7**



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

C1	C2	C3	C4	C5	C6	C7	C8
79,6	82,3	74,1	82,9	86,7	89,8	90,3	88,2
C9	C10	C11	C12	C13	C14	C15	
88,4	79,4	77,8	80,4	88,6	82,4	78,9	

### 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	$\Delta uv$
3837 K	82,5	10,6	82,7	97,7	83,4	0,391	0,390	0,227	0,339	0,0032



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### TM30 details

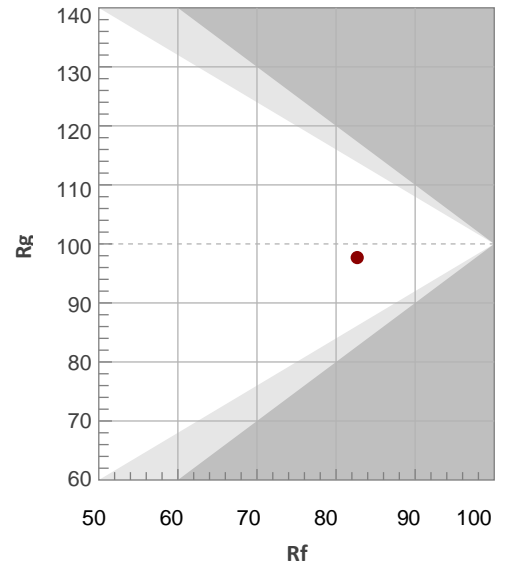
Rf 82,7

Fidelity index Rf

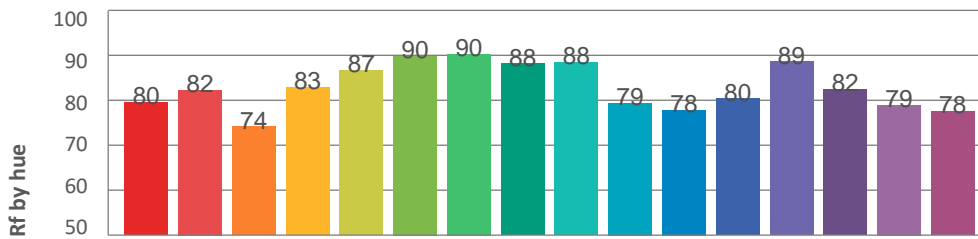
Rg 97,7

Gamut index Rg

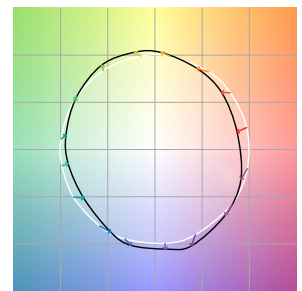
Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	80	-11%	-2%
2	82	-8%	5%
3	74	-4%	12%
4	83	2%	9%
5	87	5%	6%
6	90	6%	-1%
7	90	0%	-6%
8	88	-4%	-5%
9	88	-7%	-1%
10	79	-8%	7%
11	78	-1%	13%
12	80	5%	8%
13	89	6%	-1%
14	82	7%	-10%
15	79	1%	-13%
16	78	-4%	-12%



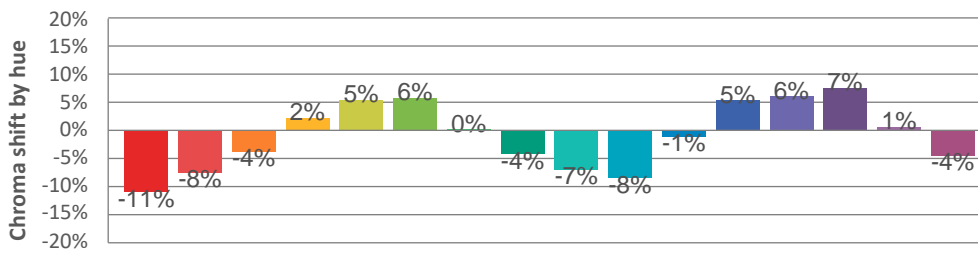
### Hue binH



### Color vector graphics



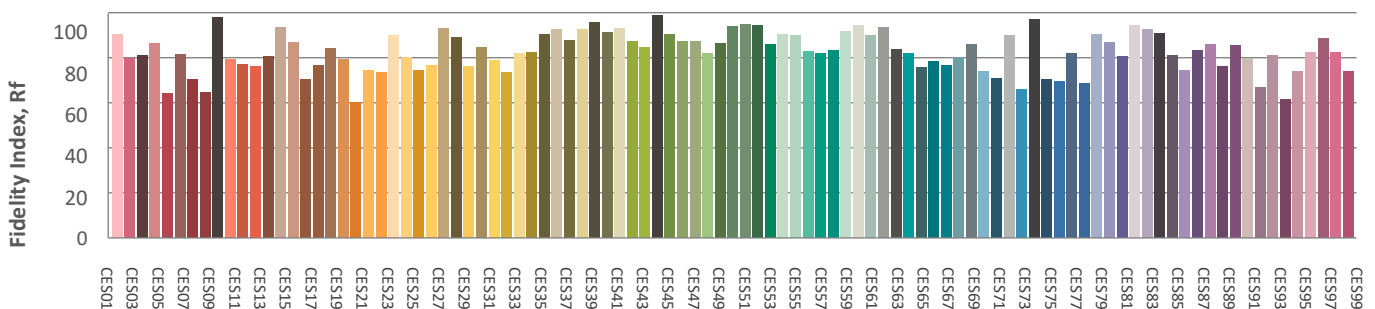
### Hue bin



### 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	20,5	21,2	20,8	21,4	21,6	20,5	21,2	20,8	21,4	21,6
	3H	20,4	21,0	20,7	21,3	21,5	20,4	21,0	20,7	21,3	21,5
	4H	20,3	20,9	20,6	21,2	21,5	20,3	20,9	20,6	21,2	21,5
	6H	20,3	20,8	20,6	21,1	21,4	20,3	20,8	20,6	21,1	21,4
	8H	20,2	20,7	20,6	21,0	21,4	20,2	20,7	20,6	21,0	21,4
	12H	20,2	20,7	20,5	21,0	21,3	20,2	20,7	20,5	21,0	21,3
4H	2H	20,3	20,9	20,7	21,2	21,5	20,3	20,9	20,7	21,2	21,5
	3H	20,2	20,7	20,6	21,0	21,3	20,2	20,7	20,6	21,0	21,3
	4H	20,1	20,6	20,5	20,9	21,3	20,1	20,6	20,5	20,9	21,3
	6H	20,1	20,4	20,5	20,8	21,2	20,1	20,4	20,5	20,8	21,2
	8H	20,0	20,3	20,4	20,7	21,1	20,0	20,3	20,4	20,7	21,1
	12H	20,0	20,3	20,4	20,7	21,1	20,0	20,3	20,4	20,7	21,1
8H	4H	20,0	20,3	20,4	20,7	21,1	20,0	20,3	20,4	20,7	21,1
	6H	19,9	20,2	20,4	20,6	21,1	19,9	20,2	20,4	20,6	21,1
	8H	19,9	20,1	20,4	20,5	21,0	19,9	20,1	20,4	20,5	21,0
	12H	19,8	20,0	20,3	20,5	21,0	19,8	20,0	20,3	20,5	21,0
12H	4H	20,0	20,2	20,4	20,7	21,1	20,0	20,2	20,4	20,7	21,1
	6H	19,9	20,1	20,4	20,5	21,0	19,9	20,1	20,4	20,5	21,0
	8H	19,8	20,0	20,3	20,5	21,0	19,8	20,0	20,3	20,5	21,0
Variation of the observer position for the luminaire distance S											
S = 1,0H	+4,5 / -10,7					+4,5 / -10,7					
S = 1,5H	+7,3 / -13,8					+7,3 / -13,8					
S = 2,0H	+9,3 / -16,5					+9,3 / -16,5					
Standard table	BK00					BK00					
Correction summand	1,9					1,9					
Corrected glare indices referring to 3057lm total luminous flux											



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