

# LM-79

## Test Report

LM79-RUBY-5-2700K-CRI80-SPOT

### General Description

Item number	
Date and time	10-3-2017 15:25:53
CCT (Kelvin)	2657 K
Beam angle	15,7°
Luminous flux	1844 lm
Efficiency	90 lm/watt
Weighted energy	20,4 kWh/1000h
Power factor	0,89
CRI (RA)	82,2
Fidelity index Rf	Rf 82,4
Gammut index Rg	Rg 97,0

**NEW**



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info@cls-led.com  
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Beam details	1m	2m	3m	4m	5m														
Lux*	9525 lx	2381 lx	1058 lx	595 lx	381 lx														
*measured at center of beam																			
Footcandles*	884,9 fcd	221,2 fcd	98,3 fcd	55,3 fcd	35,4 fcd														
Beam width (meter)	0,3 m	0,6 m	0,8 m	1,1 m	1,4 m														
Beam width (Feet)	0,9 ft	1,8 ft	2,7 ft	3,6 ft	4,5 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
9525lx	2381lx	1058lx	595lx	381lx	265lx	194lx	149lx	118lx	95lx	79lx	66lx	56lx	49lx	42lx	37lx	33lx	29lx	26lx	24lx
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
884,9fcd	221,2fcd	98,3fcd	55,3fcd	35,4fcd	24,6fcd	18,1fcd	13,8fcd	10,9fcd	8,8fcd	7,3fcd	6,1fcd	5,2fcd	4,5fcd	3,9fcd	3,5fcd	3,1fcd	2,7fcd	2,5fcd	2,2fcd
<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°
9525	8704	7883	6391	4747	3415	2633	1851	1534	1269	1080	982	885	837	789	745	704	652	479	306
100%	91%	83%	67%	50%	36%	28%	19%	16%	13%	11%	10%	9%	9%	8%	8%	7%	7%	5%	3%
<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°
9525	8704	7883	6391	4747	3415	2633	1851	1534	1269	1080	982	885	837	789	745	704	652	479	306
100%	91%	83%	67%	50%	36%	28%	19%	16%	13%	11%	10%	9%	9%	8%	8%	7%	7%	5%	3%
<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°
9525	8823	7565	6245	4759	3273	2527	1945	1499	1291	1083	989	909	846	806	767	731	696	587	416
100%	93%	79%	66%	50%	34%	27%	20%	16%	14%	11%	10%	10%	9%	8%	8%	8%	7%	6%	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°
9525	8823	7565	6245	4759	3273	2527	1945	1499	1291	1083	989	909	846	806	767	731	696	587	416
100%	93%	79%	66%	50%	34%	27%	20%	16%	14%	11%	10%	10%	9%	8%	8%	8%	7%	6%	4%
Beam angle 50%		Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone					
15,7°		44,5°				{C_ANG}°				99,3%				98,5%					



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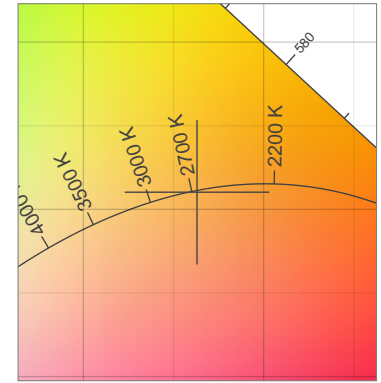
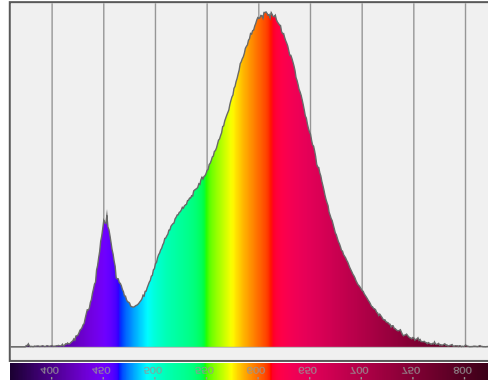
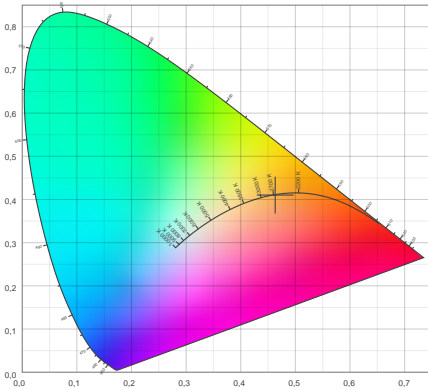
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### Color details



CIE 1931

x: 0,463



Spectra

CIE 1931 ZOOM

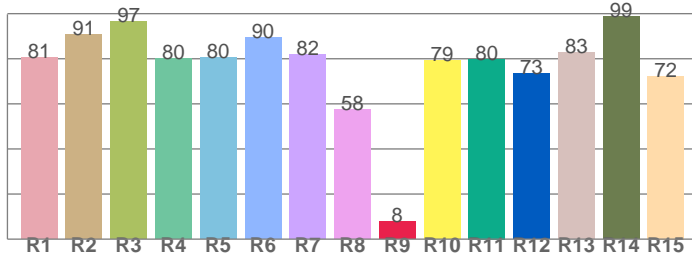
2657 K

y: 0,410

$\Delta uv$ : 0,0004

CRI: **82,2** (R1-R8)

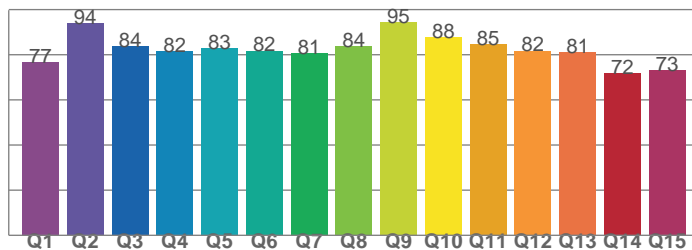
CRI values, R1-R8 are used to calculate final CRI value



R1	R2	R3	R4	R5	R6	R7	R8
80,6	90,8	96,6	80,3	80,5	89,6	81,8	57,6
R9	R10	R11	R12	R13	R14	R15	
8,0	79,4	80,0	73,5	82,9	98,9	72,4	

CQS: **81,4**

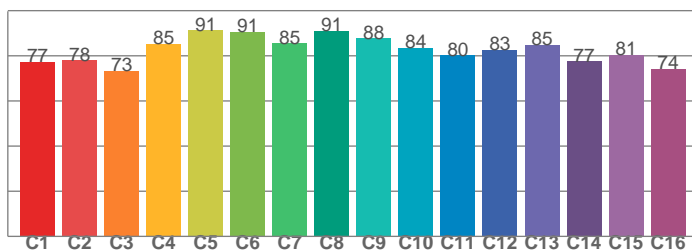
CQS values



Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
76,7	93,8	83,6	81,6	83,0	81,8	80,7	83,7
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
94,6	87,8	84,8	81,8	80,9	71,7	73,1	

TM30: **82,4**

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



C1	C2	C3	C4	C5	C6	C7	C8
77,3	77,9	73,3	85,2	91,2	90,7	85,4	91,1
C9	C10	C11	C12	C13	C14	C15	
87,8	83,6	80,2	82,7	84,9	77,5	80,5	

### 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	$\Delta uv$
2657 K	82,2	8,0	82,4	97,0	81,4	0,463	0,410	0,265	0,352	0,0004



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### TM30 details

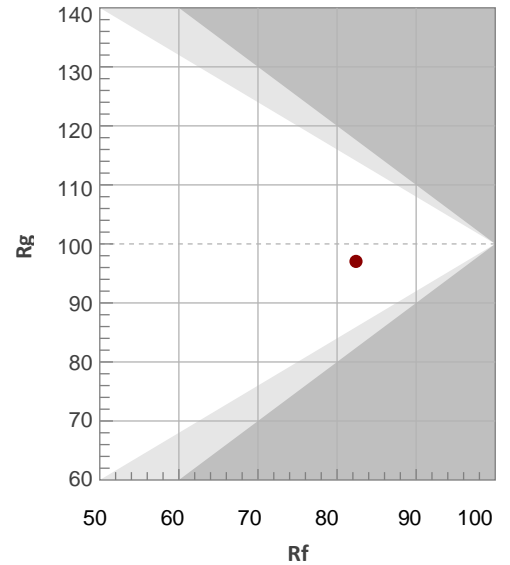
Rf 82,4

Fidelity index Rf

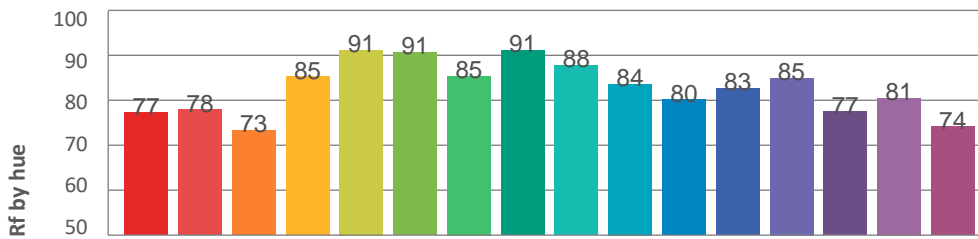
Rg 97,0

Gamut index Rg

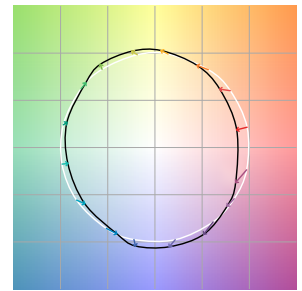
Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	77	-11%	-1%
2	78	-8%	8%
3	73	-3%	12%
4	85	2%	8%
5	91	5%	5%
6	91	5%	-1%
7	85	-1%	-8%
8	91	-3%	-3%
9	88	-6%	1%
10	84	-5%	8%
11	80	-1%	12%
12	83	6%	3%
13	85	6%	-8%
14	77	5%	-16%
15	81	-2%	-11%
16	74	-9%	-16%



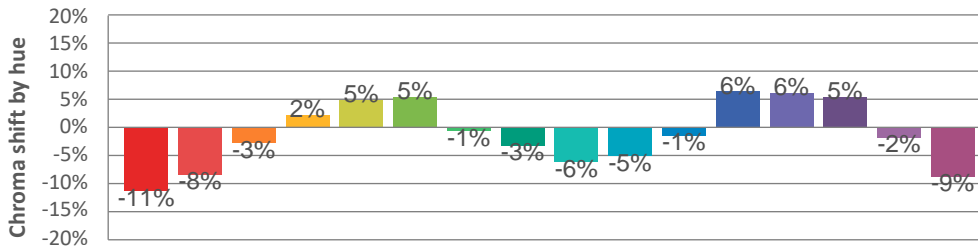
### Hue binH



### Color vector graphics



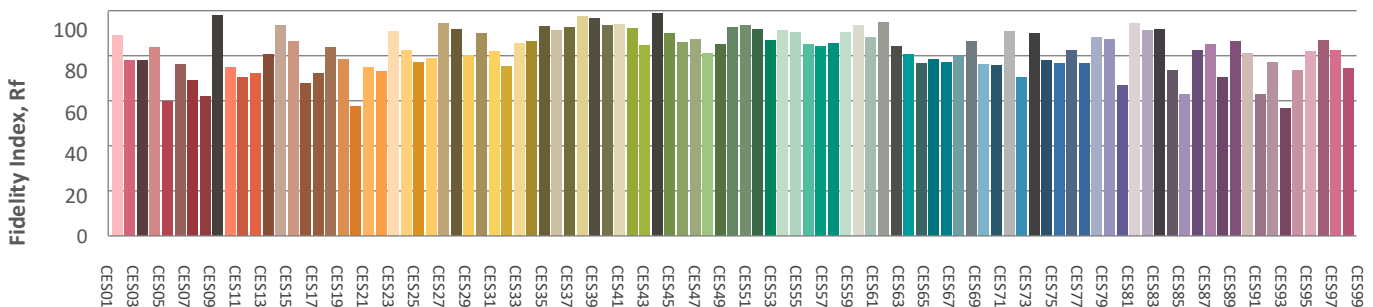
### Hue bin



### 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	17,1	17,7	17,3	17,9	18,1	17,4	18,1	17,7	18,3	18,5
	3H	16,9	17,5	17,2	17,8	18,0	17,3	17,9	17,6	18,1	18,4
	4H	16,9	17,4	17,2	17,7	18,0	17,2	17,8	17,5	18,0	18,3
	6H	16,8	17,3	17,1	17,6	17,9	17,2	17,7	17,5	18,0	18,2
	8H	16,8	17,3	17,1	17,6	17,9	17,1	17,6	17,5	17,9	18,2
	12H	16,7	17,2	17,1	17,5	17,8	17,1	17,5	17,4	17,9	18,2
4H	2H	16,9	17,4	17,2	17,7	18,0	17,2	17,8	17,5	18,0	18,3
	3H	16,7	17,2	17,1	17,5	17,8	17,1	17,5	17,4	17,9	18,2
	4H	16,7	17,1	17,0	17,4	17,7	17,0	17,4	17,4	17,7	18,1
	6H	16,6	16,9	17,0	17,3	17,7	16,9	17,3	17,3	17,6	18,0
	8H	16,5	16,8	17,0	17,2	17,6	16,9	17,2	17,3	17,6	18,0
	12H	16,5	16,8	16,9	17,2	17,6	16,9	17,1	17,3	17,5	17,9
8H	4H	16,5	16,8	17,0	17,2	17,6	16,9	17,2	17,3	17,6	18,0
	6H	16,5	16,7	16,9	17,1	17,6	16,8	17,0	17,3	17,5	17,9
	8H	16,4	16,6	16,9	17,0	17,5	16,8	16,9	17,2	17,4	17,9
	12H	16,4	16,5	16,9	17,0	17,5	16,7	16,9	17,2	17,3	17,8
12H	4H	16,5	16,8	16,9	17,2	17,6	16,9	17,1	17,3	17,5	17,9
	6H	16,4	16,6	16,9	17,0	17,5	16,8	16,9	17,2	17,4	17,9
	8H	16,4	16,5	16,9	17,0	17,5	16,7	16,9	17,2	17,3	17,8
Variation of the observer position for the luminaire distance S											
S = 1,0H	+5,3 / -15,8					+5,2 / -16,4					
S = 1,5H	+8,1 / -17,4					+8,0 / -18,5					
S = 2,0H	+10,1 / -18,2					+10,0 / -19,2					
Standard table	BK00					BK00					
Correction summand	-1,6					-1,2					
Corrected glare indices referring to 1844lm total luminous flux											



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