

LM-79

Test Report

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

General Discription

Item number	RU-35-X-X-01-1-X	
Date and time	10-3-2017 15:25:53	
CCT (Kelvin)	2656 K	
Beam angle	19°	
Luminous flux	1835 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	
Peak	7189 cd	



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info@cls-led.com
www.cls-led.com

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Beam details	1m	2m	3m	4m	5m
Lux*	7189 lx	1797 lx	799 lx	449 lx	288 lx

19°

*measured at center of beam

Footcandles*	667,9 fcd	167,0 fcd	74,2 fcd	41,7 fcd	26,7 fcd
Beam width (meter)	0,3 m	0,7 m	1 m	1,3 m	1,7 m
Beam width (Feet)	1,1 ft	2,2 ft	3,3 ft	4,4 ft	5,5 ft

Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
7189lx	1797lx	799lx	449lx	288lx	200lx	147lx	112lx	89lx	72lx	59lx	50lx	43lx	37lx	32lx	28lx	25lx	22lx	20lx	18lx
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
667,9fcd	167fcd	74,2fcd	41,7fcd	26,7fcd	18,6fcd	13,6fcd	10,4fcd	8,2fcd	6,7fcd	5,5fcd	4,6fcd	4fcd	3,4fcd	3fcd	2,6fcd	2,3fcd	2,1fcd	1,9fcd	1,7fcd

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°
7189	7189	7189	6340	4775	3289	2607	1925	1524	1288	1077	988	899	843	799	757	718	680	533	361
100%	100%	100%	88%	66%	46%	36%	27%	21%	18%	15%	14%	13%	12%	11%	11%	10%	9%	7%	5%

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°
7189	7189	7189	6340	4775	3289	2607	1925	1524	1288	1077	988	899	843	799	757	718	680	533	361
100%	100%	100%	88%	66%	46%	36%	27%	21%	18%	15%	14%	13%	12%	11%	11%	10%	9%	7%	5%

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°
7189	7189	7189	6340	4775	3289	2607	1925	1524	1288	1077	988	899	843	799	757	718	680	533	361
100%	100%	100%	88%	66%	46%	36%	27%	21%	18%	15%	14%	13%	12%	11%	11%	10%	9%	7%	5%

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°
7189	7189	7189	6340	4775	3289	2607	1925	1524	1288	1077	988	899	843	799	757	718	680	533	361
100%	100%	100%	88%	66%	46%	36%	27%	21%	18%	15%	14%	13%	12%	11%	11%	10%	9%	7%	5%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
19°	63,9°	82°	99,3%	98,5%



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 info@cls-led.com
 www.cls-led.com

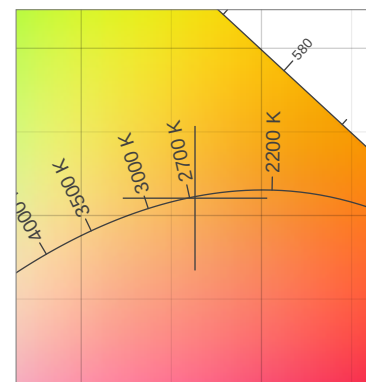
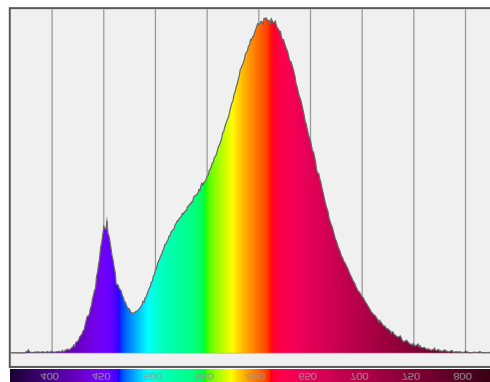
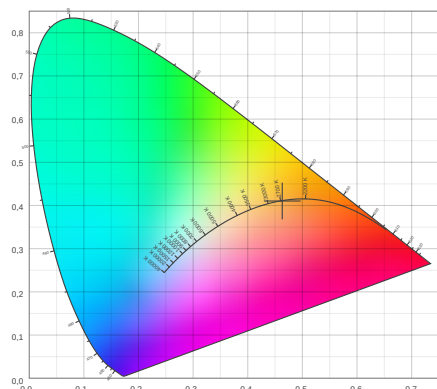
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Color details



CIE 1931

x: 0,463



Spectra

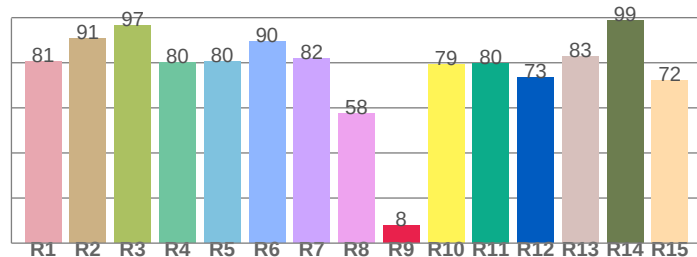
CIE 1931 ZOOM

2656 K

y: 0,410

Δuv : 0,0004

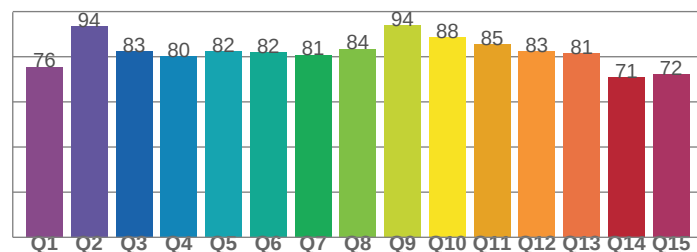
CRI: 82,2 (R1-R8)



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	80,2	80,5	89,6	81,8	57,5
R9	R10	R11	R12	R13	R14	R15	
7,8	79,3	79,9	73,4	82,9	98,9	72,4	

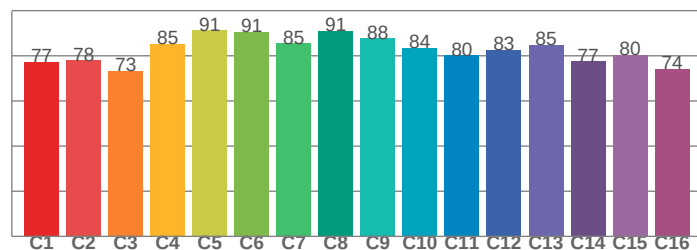
CQS: 81,1



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
75,5	93,6	82,5	80,1	82,4	81,8	80,9	83,5
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
94,1	88,5	85,4	82,5	81,5	70,9	72,2	

TM30: 82,4



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

C1	C2	C3	C4	C5	C6	C7	C8
77,2	77,9	73,3	85,2	91,2	90,7	85,4	91,1
C9	C10	C11	C12	C13	C14	C15	
87,7	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	Δuv
2656 K	82,2	7,8	82,4	97,0	81,1	0,463	0,410	0,265	0,352	0,0004



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TM30 details

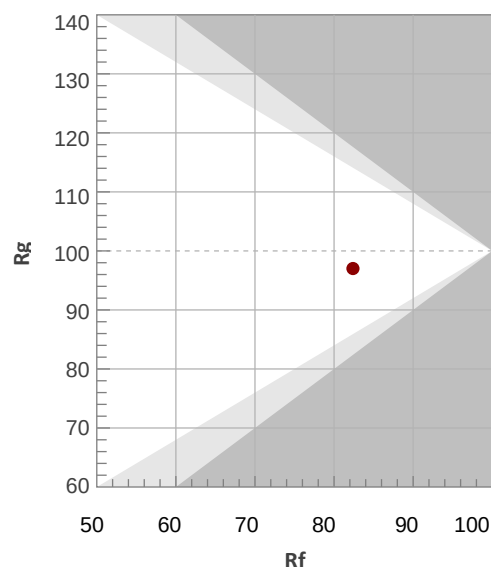
Rf 82,4

Fidelity index Rf

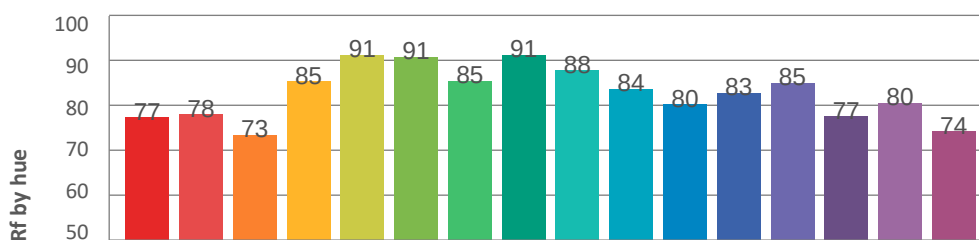
Rg 97,0

Gamut index Rg

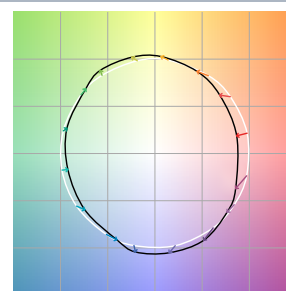
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	77	-11%	-1%
2	78	-8%	8%
3	73	-3%	12%
4	85	2%	8%
5	91	5%	5%
6	91	5%	-1%
7	85	-1%	-8%
8	91	-3%	-3%
9	88	-6%	1%
10	84	-5%	8%
11	80	-1%	12%
12	83	6%	3%
13	85	6%	-8%
14	77	5%	-16%
15	80	-2%	-11%
16	74	-9%	-16%



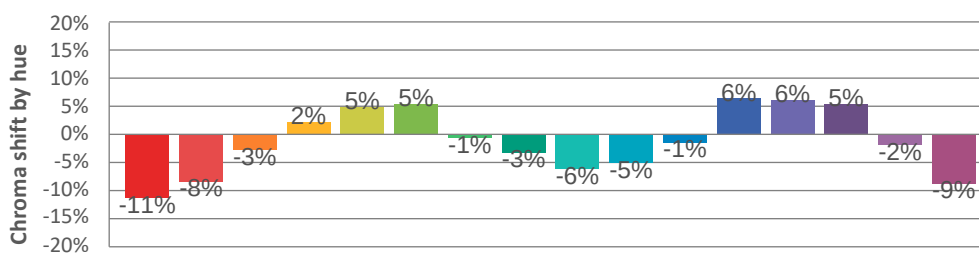
Hue binH



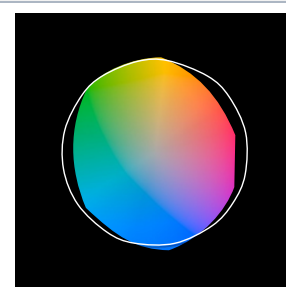
Color vector graphics



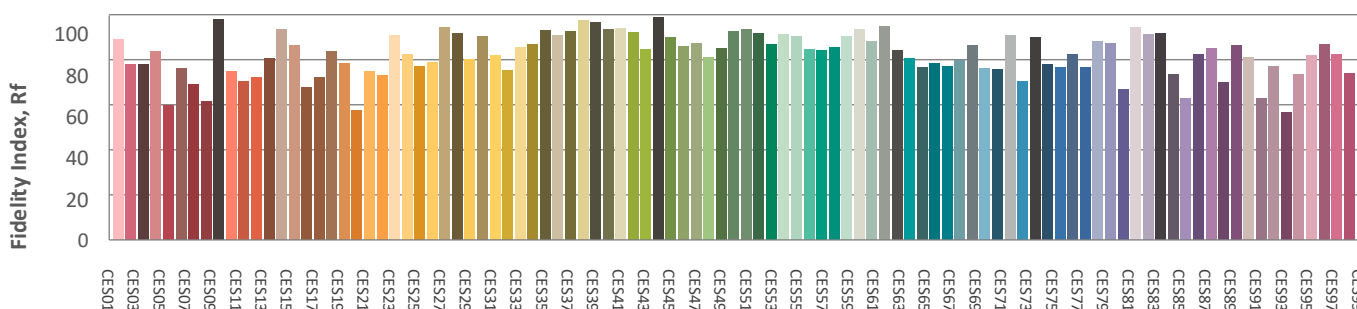
Hue bin



Color distortion graphics



Color Evaluation Sample



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info@cls-led.com
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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	17,5	18,1	17,7	18,3	18,5	17,5	18,1	17,7	18,3	18,5
	3H	17,3	17,9	17,6	18,2	18,4	17,3	17,9	17,6	18,2	18,4
	4H	17,3	17,8	17,6	18,1	18,3	17,3	17,8	17,6	18,1	18,3
	6H	17,2	17,7	17,5	18,0	18,3	17,2	17,7	17,5	18,0	18,3
	8H	17,1	17,6	17,5	17,9	18,2	17,1	17,6	17,5	17,9	18,2
	12H	17,1	17,6	17,5	17,9	18,2	17,1	17,6	17,5	17,9	18,2
4H	2H	17,2	17,8	17,6	18,1	18,3	17,2	17,8	17,6	18,1	18,3
	3H	17,1	17,6	17,5	17,9	18,2	17,1	17,6	17,5	17,9	18,2
	4H	17,0	17,4	17,4	17,8	18,1	17,0	17,4	17,4	17,8	18,1
	6H	17,0	17,3	17,4	17,7	18,0	17,0	17,3	17,4	17,7	18,0
	8H	16,9	17,2	17,3	17,6	18,0	16,9	17,2	17,3	17,6	18,0
	12H	16,9	17,1	17,3	17,5	18,0	16,9	17,1	17,3	17,5	18,0
8H	4H	16,9	17,2	17,3	17,6	18,0	16,9	17,2	17,3	17,6	18,0
	6H	16,8	17,0	17,3	17,5	17,9	16,8	17,0	17,3	17,5	17,9
	8H	16,8	17,0	17,3	17,4	17,9	16,8	17,0	17,3	17,4	17,9
	12H	16,7	16,9	17,2	17,4	17,9	16,7	16,9	17,2	17,4	17,9
12H	4H	16,9	17,1	17,3	17,5	18,0	16,9	17,1	17,3	17,5	18,0
	6H	16,8	17,0	17,3	17,4	17,9	16,8	17,0	17,3	17,4	17,9
	8H	16,7	16,9	17,2	17,3	17,9	16,7	16,9	17,2	17,3	17,9
Variation of the observer position for the luminaire distance S											
S = 1,0H		+5,1 / -16,6					+5,1 / -16,6				
S = 1,5H		+7,9 / -18,7					+7,9 / -18,7				
S = 2,0H		+9,9 / -19,4					+9,9 / -19,4				
Standard table		BK00					BK00				
Correction summand		-1,2					-1,2				
Corrected glare indices referring to 1835lm total luminous flux											



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