

LM-79

Test Report

LM79-RUBY-BRACKET-5-4000K-CRI80-SPOT

General Discription

Item number	RU-35-X-X-03-1-X
Date and time	10-3-2017 16:00:38
CCT (Kelvin)	3825 K
Beam angle	18,9°
Luminous flux	2140 lm
Efficiency	104 lm/watt
Weighted energy	20,6 kWh/1000h
Power factor	0,89
CRI (RA)	82,7
Fidelity index Rf	Rf 82,9
Gammut index Rg	Rg 97,7
Peak	8484 cd



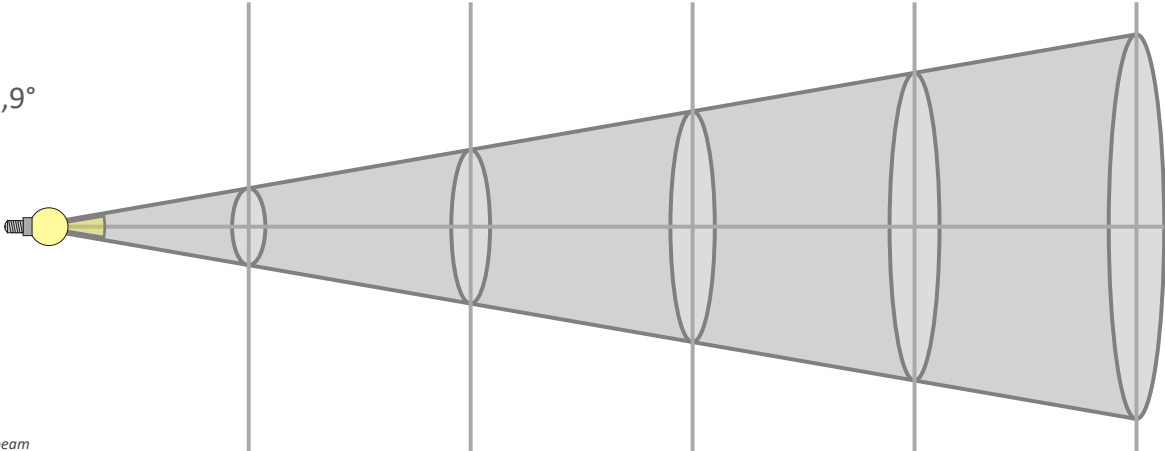
CLS LED BV
info@cls-led.com
www.cls-led.com

2017 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information contained in this document. No part of this document may be reproduced, in any form or by any means, without permission in writing from CLS-LED BV. Other legal information can be found in our General conditions, found on the back of your CLS-LED BV invoice, inside the CLS catalogue or on our website www.cls-led.com/voorwaarden.pdf

LM-79

Test Report

LM79-RUBY-BRACKET-5-4000K-CRI80-SPOT

Beam details		1m		2m		3m		4m		5m									
Lux*		8484 lx		2121 lx		943 lx		530 lx		339 lx									
18,9° 																			
*measured at center of beam																			
Footcandles*		788,2 fcd		197,1 fcd		87,6 fcd		49,3 fcd		31,5 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
8484lx	2121lx	943lx	530lx	339lx	236lx	173lx	133lx	105lx	85lx	70lx	59lx	50lx	43lx	38lx	33lx	29lx	26lx	24lx	21lx
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
788,2fcd	197,1fcd	87,6fcd	49,3fcd	31,5fcd	21,9fcd	16,1fcd	12,3fcd	9,7fcd	7,9fcd	6,5fcd	5,5fcd	4,7fcd	4fcd	3,5fcd	3,1fcd	2,7fcd	2,4fcd	2,2fcd	2fcd
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°
8484	8484	8484	7440	5584	3854	3037	2220	1767	1484	1243	1138	1034	972	920	871	826	781	610	428
100%	100%	100%	88%	66%	45%	36%	26%	21%	17%	15%	13%	12%	11%	11%	10%	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°
8484	8484	8484	7440	5584	3854	3037	2220	1767	1484	1243	1138	1034	972	920	871	826	781	610	428
100%	100%	100%	88%	66%	45%	36%	26%	21%	17%	15%	13%	12%	11%	11%	10%	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°
8484	8484	8484	7440	5584	3854	3037	2220	1767	1484	1243	1138	1034	972	920	871	826	781	610	428
100%	100%	100%	88%	66%	45%	36%	26%	21%	17%	15%	13%	12%	11%	11%	10%	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°
8484	8484	8484	7440	5584	3854	3037	2220	1767	1484	1243	1138	1034	972	920	871	826	781	610	428
100%	100%	100%	88%	66%	45%	36%	26%	21%	17%	15%	13%	12%	11%	11%	10%	10%	9%	7%	5%
Beam angle 50%				Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone			
18,9°				62°				82,4°				99,3%				98,3%			



CLS LED BV
info@cls-led.com
www.cls-led.com

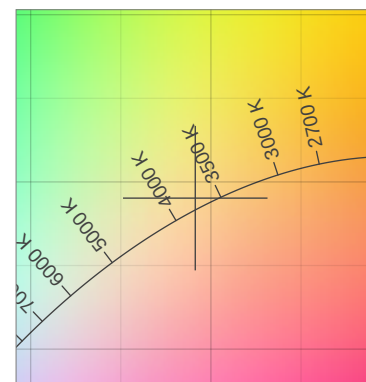
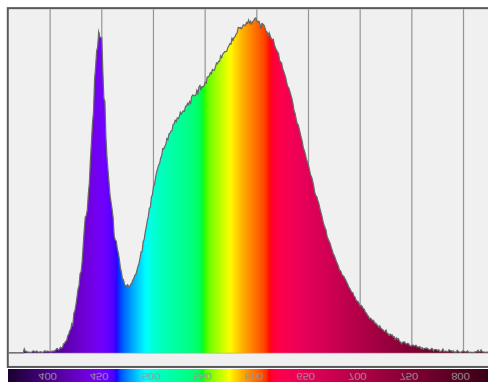
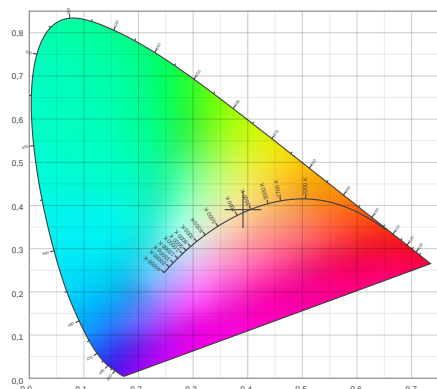
2017 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information contained in this document. No part of this document may be reproduced, in any form or by any means, without permission in writing from CLS-LED BV. Other legal information can be found in our General conditions, found on the back of your CLS-LED BV invoice, inside the CLS catalogue or on our website www.cls-led.com/voorwaarden.pdf

LM-79

Test Report

LM79-RUBY-BRACKET-5-4000K-CRI80-SPOT

Color details



CIE 1931

x: 0,391

3825 K

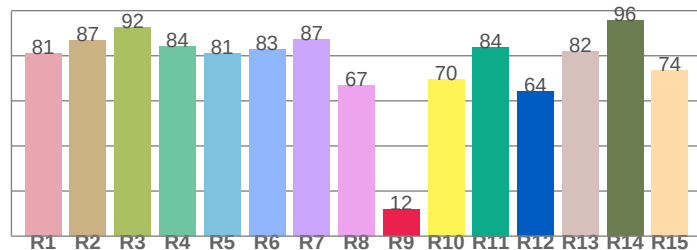
y: 0,390

Spectra

CIE 1931 ZOOM

Δuv : 0,0032

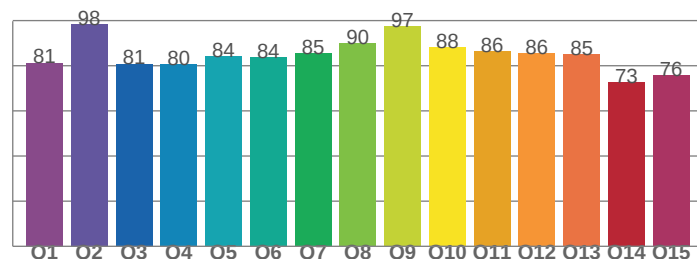
CRI: 82,7 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
81,0	86,7	92,4	84,0	81,0	82,8	87,2	66,7
R9	R10	R11	R12	R13	R14	R15	
11,7	69,6	83,8	64,3	81,9	95,7	73,7	

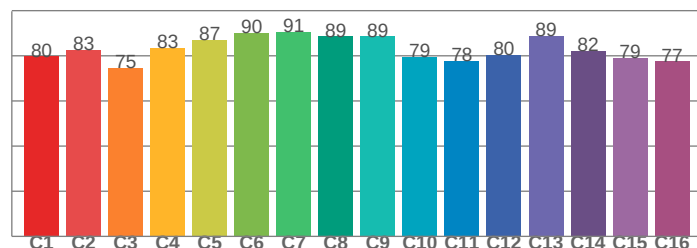
CQS: 83,6



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
81,3	98,4	80,9	80,5	84,1	83,8	85,4	89,9
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
97,4	88,1	86,5	85,5	85,1	72,8	75,8	

TM30: 82,9



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

C1	C2	C3	C4	C5	C6	C7	C8
79,8	82,6	74,6	83,5	87,1	90,3	90,7	88,5
C9	C10	C11	C12	C13	C14	C15	
88,6	79,4	77,7	80,5	88,7	82,3	79,1	

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
3825 K	82,7	11,7	82,9	97,7	83,6	0,391	0,390	0,227	0,339	0,0032



CLS LED BV
info@cls-led.com
www.cls-led.com

2017 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information contained in this document. No part of this document may be reproduced, in any form or by any means, without permission in writing from CLS-LED BV. Other legal information can be found in our General conditions, found on the back of your CLS-LED BV invoice, inside the CLS catalogue or on our website www.cls-led.com/voorwaarden.pdf

LM-79

Test Report

LM79-RUBY-BRACKET-5-4000K-CRI80-SPOT

TM30 details

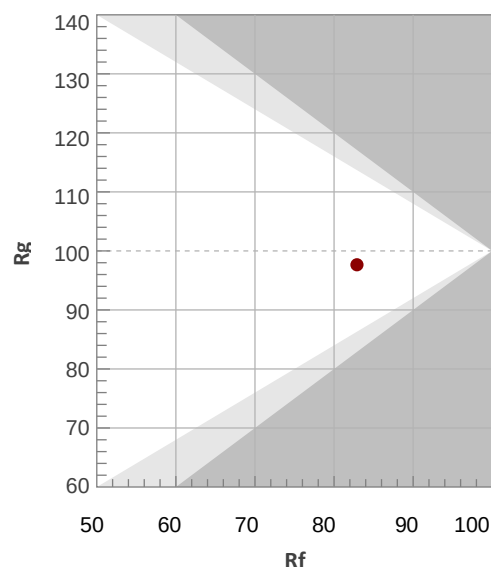
Rf 82,9

Fidelity index Rf

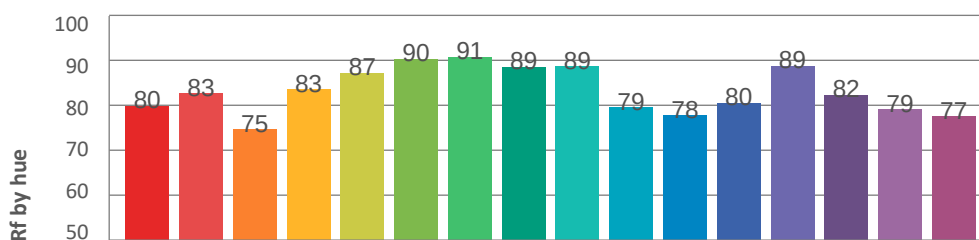
Rg 97,7

Gamut index Rg

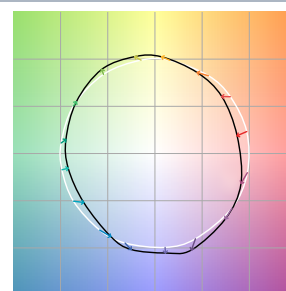
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	80	-11%	-2%
2	83	-7%	5%
3	75	-4%	12%
4	83	2%	9%
5	87	5%	6%
6	90	5%	-1%
7	91	0%	-6%
8	89	-4%	-5%
9	89	-7%	0%
10	79	-8%	7%
11	78	-1%	14%
12	80	5%	8%
13	89	6%	-1%
14	82	8%	-10%
15	79	1%	-13%
16	77	-4%	-12%



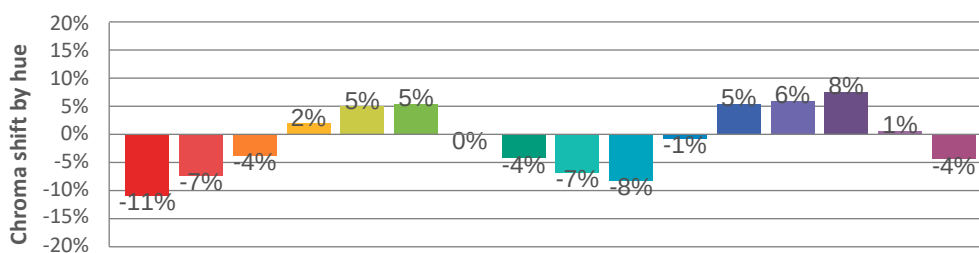
Hue binH



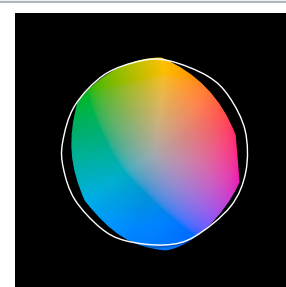
Color vector graphics



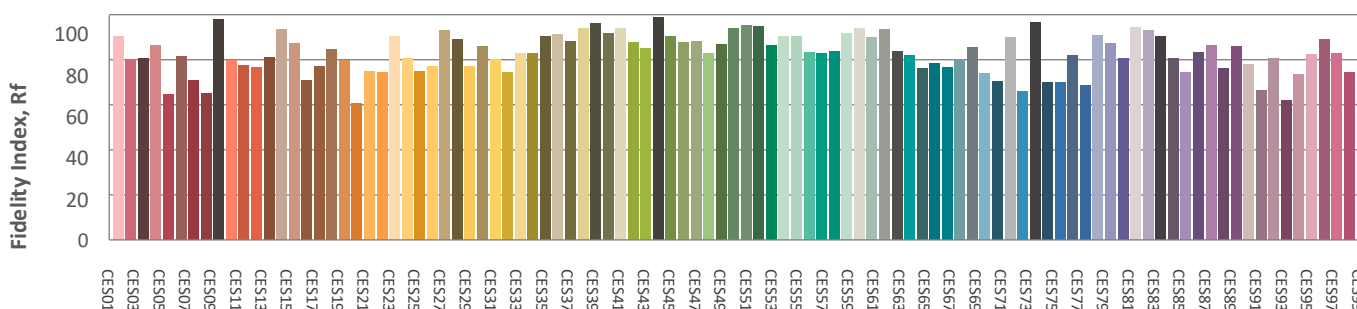
Hue bin



Color distortion graphics



Color Evaluation Sample



CLS LED BV
info@cls-led.com
www.cls-led.com

2017 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information contained in this document. No part of this document may be reproduced, in any form or by any means, without permission in writing from CLS-LED BV. Other legal information can be found in our General conditions, found on the back of your CLS-LED BV invoice, inside the CLS catalogue or on our website www.cls-led.com/voorwaarden.pdf

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	18,0	18,6	18,2	18,8	19,0	18,0	18,6	18,2	18,8	19,0
	3H	17,8	18,4	18,1	18,7	18,9	17,8	18,4	18,1	18,7	18,9
	4H	17,8	18,3	18,1	18,6	18,8	17,8	18,3	18,1	18,6	18,8
	6H	17,7	18,2	18,0	18,5	18,8	17,7	18,2	18,0	18,5	18,8
	8H	17,6	18,1	18,0	18,4	18,7	17,6	18,1	18,0	18,4	18,7
	12H	17,6	18,1	18,0	18,4	18,7	17,6	18,1	18,0	18,4	18,7
4H	2H	17,8	18,3	18,1	18,6	18,8	17,8	18,3	18,1	18,6	18,8
	3H	17,6	18,1	18,0	18,4	18,7	17,6	18,1	18,0	18,4	18,7
	4H	17,5	17,9	17,9	18,3	18,6	17,5	17,9	17,9	18,3	18,6
	6H	17,5	17,8	17,9	18,2	18,6	17,5	17,8	17,9	18,2	18,6
	8H	17,4	17,7	17,8	18,1	18,5	17,4	17,7	17,8	18,1	18,5
	12H	17,4	17,6	17,8	18,0	18,5	17,4	17,6	17,8	18,0	18,5
8H	4H	17,4	17,7	17,8	18,1	18,5	17,4	17,7	17,8	18,1	18,5
	6H	17,3	17,6	17,8	18,0	18,4	17,3	17,6	17,8	18,0	18,4
	8H	17,3	17,5	17,8	17,9	18,4	17,3	17,5	17,8	17,9	18,4
	12H	17,2	17,4	17,7	17,9	18,4	17,2	17,4	17,7	17,9	18,4
12H	4H	17,4	17,6	17,8	18,0	18,5	17,4	17,6	17,8	18,0	18,5
	6H	17,3	17,5	17,8	17,9	18,4	17,3	17,5	17,8	17,9	18,4
	8H	17,2	17,4	17,7	17,9	18,4	17,2	17,4	17,7	17,9	18,4
Variation of the observer position for the luminaire distance S											
S = 1,0H		+5,0 / -15,2					+5,0 / -15,2				
S = 1,5H		+7,9 / -16,7					+7,9 / -16,7				
S = 2,0H		+9,8 / -17,9					+9,8 / -17,9				
Standard table		BK00					BK00				
Correction summand		-0,7					-0,7				
Corrected glare indices referring to 2140lm total luminous flux											

