

LM-79

Test Report

LM79-RUBY-BRACKET-6-3000K-CRI80-FLOOD

General Discription

Item number	RU-36-X-X-02-3-X	
Date and time	18-11-2016 14:45:25	
CCT (Kelvin)	3066 K	
Beam angle	63,7°	
Luminous flux	2691 lm	
Efficiency	95 lm/watt	
Weighted energy	28,3 kWh/1000h	
Power factor	0,99	
CRI (RA)	81,6	
Fidelity index Rf	Rf 82,9	
Gammut index Rg	Rg 95,7	
Peak	2724 cd	



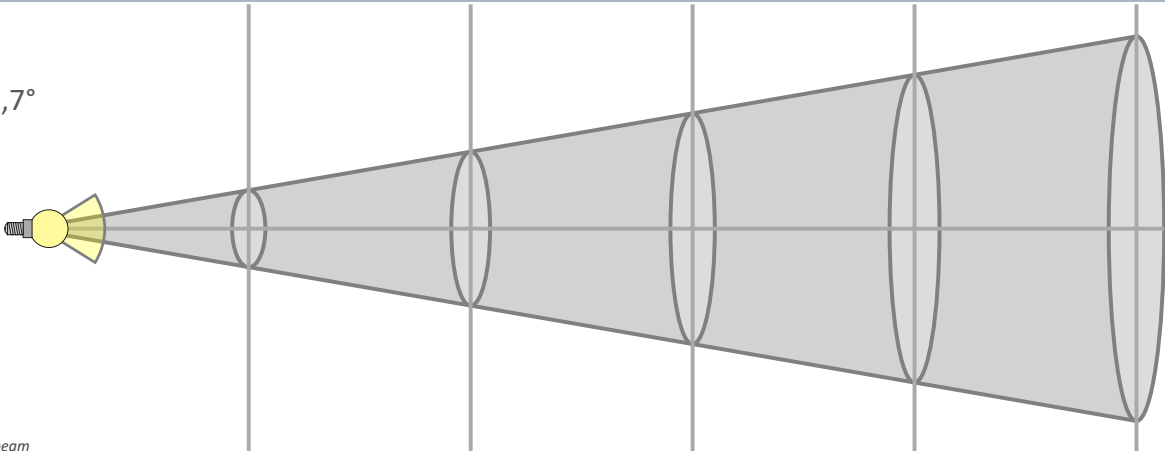
CLS LED BV
info@cls-led.com
www.cls-led.com

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-6-3000K-CRI80-FLOOD

Beam details					1m		2m		3m		4m		5m											
Lux*					2721 lx		680 lx		302 lx		170 lx		109 lx											
63,7° 																								
*measured at center of beam																								
Footcandles*					252,8 fcd		63,2 fcd		28,1 fcd		15,8 fcd		10,1 fcd											
Beam width (meter)					1,2 m		2,5 m		3,7 m		5 m		6,2 m											
Beam width (Feet)					4,1 ft		8,2 ft		12,2 ft		16,3 ft		20,4 ft											
Beam intensities																								
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m					
2721lx	680lx	302lx	170lx	109lx	76lx	56lx	43lx	34lx	27lx	22lx	19lx	16lx	14lx	12lx	11lx	9lx	8lx	8lx	7lx					
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					
252,8fcd	63,2fcd	28,1fcd	15,8fcd	10,1fcd	7fcd	5,2fcd	3,9fcd	3,1fcd	2,5fcd	2,1fcd	1,8fcd	1,5fcd	1,3fcd	1,1fcd	1fcd	0,9fcd	0,8fcd	0,7fcd	0,6fcd					
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°					
2721	2724	2724	2697	2647	2593	2489	2386	2274	2157	2044	1952	1859	1760	1658	1538	1360	1182	956	717					
100%	100%	100%	99%	97%	95%	91%	88%	84%	79%	75%	72%	68%	65%	61%	57%	50%	43%	35%	26%					
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°					
2721	2718	2718	2687	2631	2571	2464	2358	2246	2130	2018	1927	1836	1738	1636	1516	1338	1160	941	710					
100%	100%	100%	99%	97%	94%	91%	87%	83%	78%	74%	71%	67%	64%	60%	56%	49%	43%	35%	26%					
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°					
2721	2724	2724	2697	2647	2593	2489	2386	2274	2157	2044	1952	1859	1760	1658	1538	1360	1182	956	717					
100%	100%	100%	99%	97%	95%	91%	88%	84%	79%	75%	72%	68%	65%	61%	57%	50%	43%	35%	26%					
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°					
2721	2718	2718	2687	2631	2571	2464	2358	2246	2130	2018	1927	1836	1738	1636	1516	1338	1160	941	710					
100%	100%	100%	99%	97%	94%	91%	87%	83%	78%	74%	71%	67%	64%	60%	56%	49%	43%	35%	26%					
Beam angle 50%					Field angle 10%					Cutoff angle 2,5%					Intensity ratio in 120° cone					Intensity ratio in 90° cone				
63,7°					88,1°					112,6°					98,1%					92,7%				



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

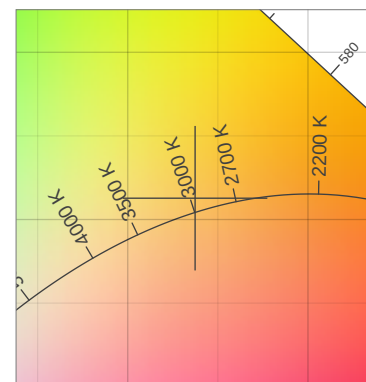
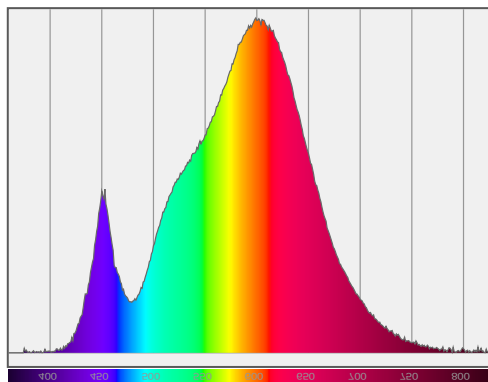
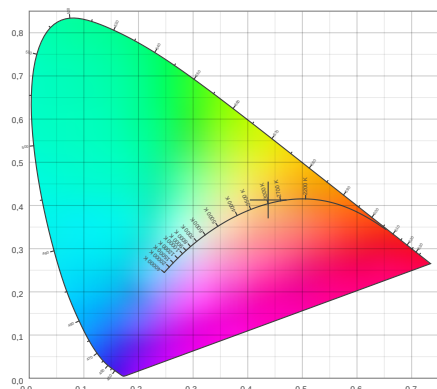
2017 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information 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-6-3000K-CRI80-FLOOD

Color details



CIE 1931

x: 0,437

3066 K

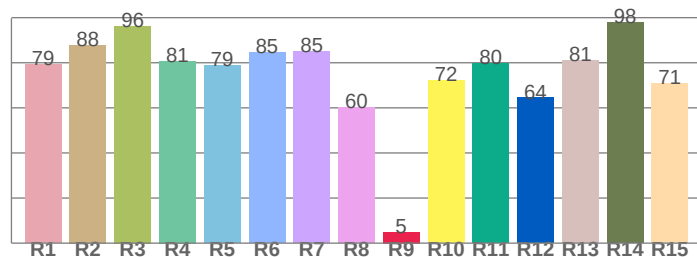
y: 0,413

Spectra

CIE 1931 ZOOM

Δuv : 0,0034

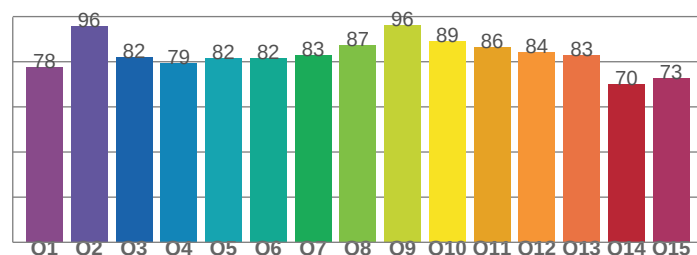
CRI: 81,6 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
79,2	87,9	96,3	80,8	78,7	84,7	85,0	60,1
R9	R10	R11	R12	R13	R14	R15	
5,0	72,3	79,6	64,4	80,9	97,7	70,9	

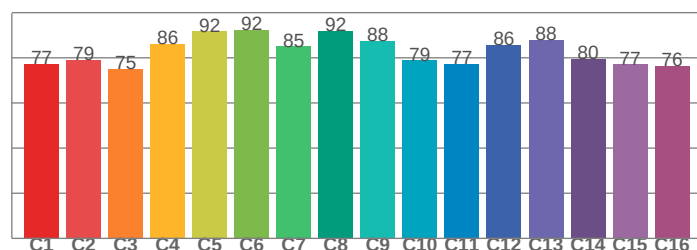
CQS: 81,8



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
77,5	95,7	82,1	79,4	81,7	81,6	82,7	87,3
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,2	88,9	86,2	84,2	82,9	70,0	72,7	

TM30: 82,9



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

C1	C2	C3	C4	C5	C6	C7	C8
77,3	78,9	75,2	86,2	91,7	92,3	85,0	91,8
C9	C10	C11	C12	C13	C14	C15	
87,5	78,8	77,4	85,7	87,9	79,6	77,1	

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
3066 K	81,6	5,0	82,9	95,7	81,8	0,437	0,413	0,247	0,350	0,0034



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-6-3000K-CRI80-FLOOD

TM30 details

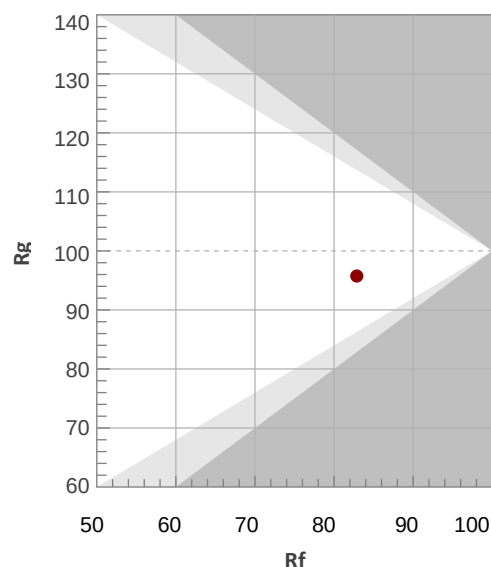
Rf 82,9

Fidelity index Rf

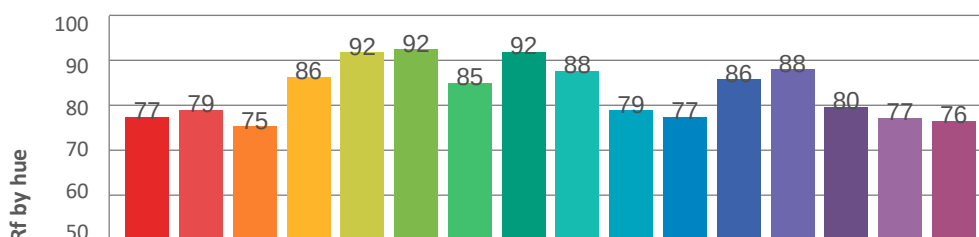
Rg 95,7

Gamut index Rg

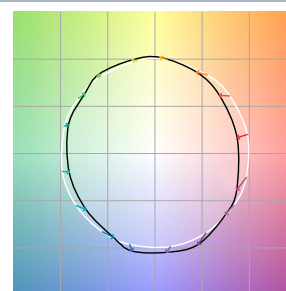
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	77	-11%	-1%
2	79	-9%	6%
3	75	-4%	11%
4	86	1%	8%
5	92	2%	5%
6	92	3%	-2%
7	85	-3%	-8%
8	92	-4%	-2%
9	88	-7%	2%
10	79	-6%	9%
11	77	-2%	13%
12	86	6%	4%
13	88	5%	-5%
14	80	6%	-14%
15	77	-2%	-13%
16	76	-7%	-15%



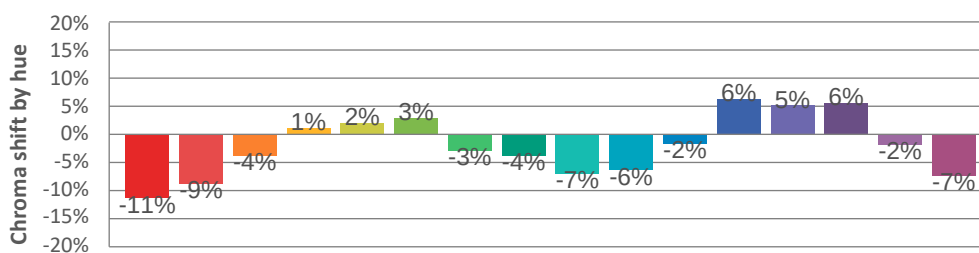
Hue binH



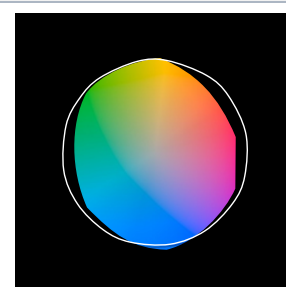
Color vector graphics



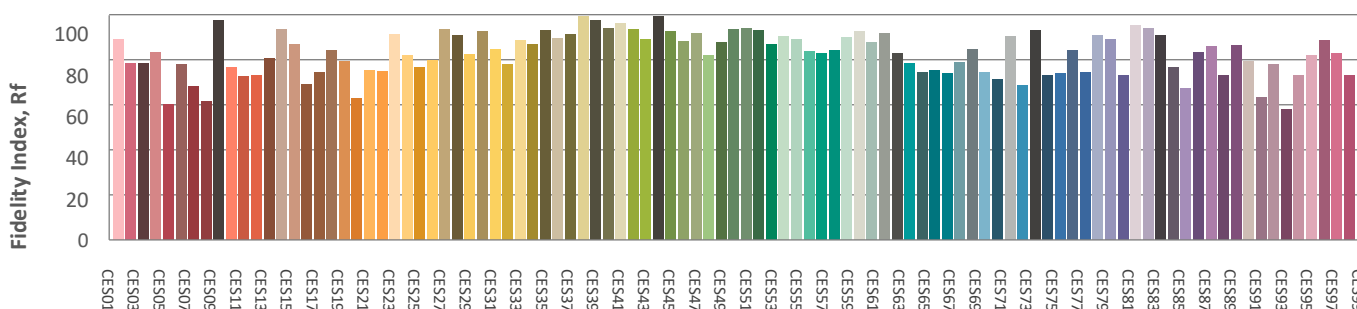
Hue bin



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

LM-79

Test Report

LM79-RUBY-BRACKET-6-3000K-CRI80-FLOOD

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	21,5	22,2	21,8	22,4	22,7	21,5	22,2	21,8	22,4	22,7
	3H	21,4	22,1	21,7	22,3	22,6	21,4	22,1	21,7	22,3	22,6
	4H	21,3	22,0	21,7	22,2	22,5	21,3	22,0	21,7	22,2	22,5
	6H	21,3	21,8	21,6	22,1	22,4	21,3	21,8	21,6	22,1	22,4
	8H	21,2	21,8	21,6	22,1	22,4	21,2	21,8	21,6	22,1	22,4
	12H	21,2	21,7	21,6	22,0	22,4	21,2	21,7	21,6	22,0	22,4
4H	2H	21,3	22,0	21,7	22,2	22,5	21,3	22,0	21,7	22,2	22,5
	3H	21,3	21,8	21,6	22,1	22,4	21,3	21,8	21,6	22,1	22,4
	4H	21,2	21,7	21,6	22,0	22,4	21,2	21,7	21,6	22,0	22,4
	6H	21,1	21,5	21,5	21,9	22,3	21,1	21,5	21,5	21,9	22,3
	8H	21,1	21,4	21,5	21,8	22,2	21,1	21,4	21,5	21,8	22,2
	12H	21,1	21,4	21,5	21,8	22,2	21,1	21,4	21,5	21,8	22,2
8H	4H	21,1	21,4	21,5	21,8	22,2	21,1	21,4	21,5	21,8	22,2
	6H	21,0	21,3	21,5	21,7	22,2	21,0	21,3	21,5	21,7	22,2
	8H	21,0	21,2	21,4	21,6	22,1	21,0	21,2	21,4	21,6	22,1
	12H	20,9	21,1	21,4	21,6	22,1	20,9	21,1	21,4	21,6	22,1
12H	4H	21,1	21,3	21,5	21,8	22,2	21,1	21,3	21,5	21,8	22,2
	6H	21,0	21,2	21,4	21,6	22,1	21,0	21,2	21,4	21,6	22,1
	8H	20,9	21,1	21,4	21,6	22,1	20,9	21,1	21,4	21,6	22,1
Variation of the observer position for the luminaire distance S											
S = 1,0H		+4,0 / -6,2					+4,0 / -6,2				
S = 1,5H		+6,7 / -8,4					+6,7 / -8,4				
S = 2,0H		+8,7 / -10,8					+8,7 / -10,8				
Standard table		BK00					BK00				
Correction summand		2,9					2,9				
Corrected glare indices referring to 2691lm total luminous flux											



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