

LM-79

Test Report

LM79-RUBY-BRACKET-5-3000K-CRI80-FLOOD

General Discription

Item number	RU-35-X-X-02-3-X	
Date and time	10-3-2017 15:45:42	
CCT (Kelvin)	3040 K	
Beam angle	63,8°	
Luminous flux	1984 lm	
Efficiency	97 lm/watt	
Weighted energy	20,5 kWh/1000h	
Power factor	0,89	
CRI (RA)	81,9	
Fidelity index Rf	Rf 83,2	
Gammut index Rg	Rg 95,6	
Peak	2075 cd	



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

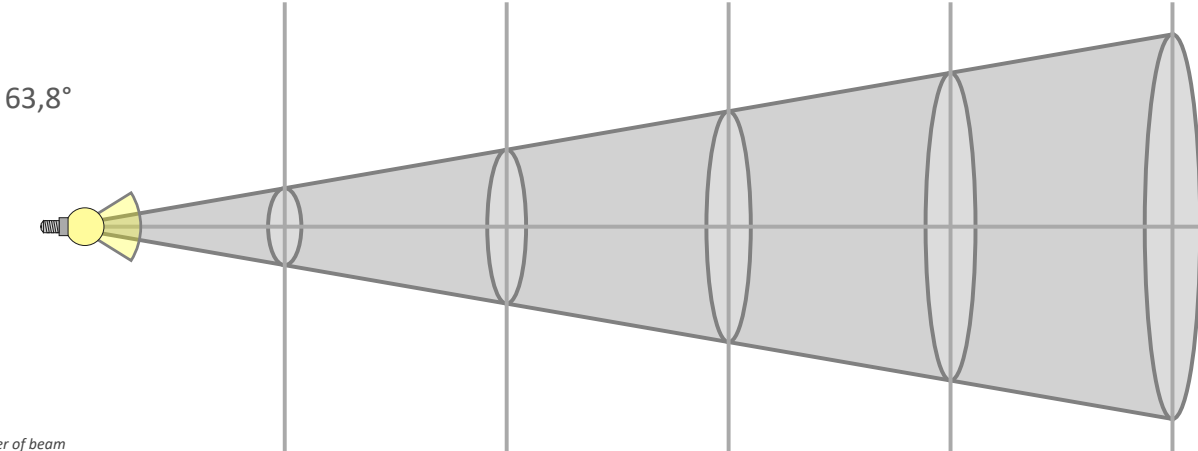
2017 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information 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-5-3000K-CRI80-FLOOD

Beam details	1m	2m	3m	4m	5m
Lux*	2068 lx	517 lx	230 lx	129 lx	83 lx



63,8°

*measured at center of beam

Footcandles*	192,1 fcd	48,0 fcd	21,3 fcd	12,0 fcd	7,7 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
2068lx	517lx	230lx	129lx	83lx	57lx	42lx	32lx	26lx	21lx	17lx	14lx	12lx	11lx	9lx	8lx	7lx	6lx	6lx	5lx
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
192,1fcd	48fcd	21,3fcd	12fcd	7,7fcd	5,3fcd	3,9fcd	3fcd	2,4fcd	1,9fcd	1,6fcd	1,3fcd	1,1fcd	1fcd	0,9fcd	0,8fcd	0,7fcd	0,6fcd	0,5fcd	0,5fcd

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°
2068	2053	2038	2005	1972	1920	1855	1788	1706	1624	1552	1486	1417	1343	1269	1155	1030	884	692	500
100%	99%	99%	97%	95%	93%	90%	86%	83%	79%	75%	72%	69%	65%	61%	56%	50%	43%	33%	24%

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°
2068	2053	2038	2005	1972	1920	1855	1788	1706	1624	1552	1486	1417	1343	1269	1155	1030	884	692	500
100%	99%	99%	97%	95%	93%	90%	86%	83%	79%	75%	72%	69%	65%	61%	56%	50%	43%	33%	24%

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°
2068	2064	2040	2016	1969	1923	1857	1777	1697	1618	1539	1465	1394	1321	1241	1161	1029	878	722	553
100%	100%	99%	98%	95%	93%	90%	86%	82%	78%	74%	71%	67%	64%	60%	56%	50%	42%	35%	27%

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°
2068	2064	2040	2016	1969	1923	1857	1777	1697	1618	1539	1465	1394	1321	1241	1161	1029	878	722	553
100%	100%	99%	98%	95%	93%	90%	86%	82%	78%	74%	71%	67%	64%	60%	56%	50%	42%	35%	27%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
63,8°	86,9°	107,3°	99,0%	94,6%



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

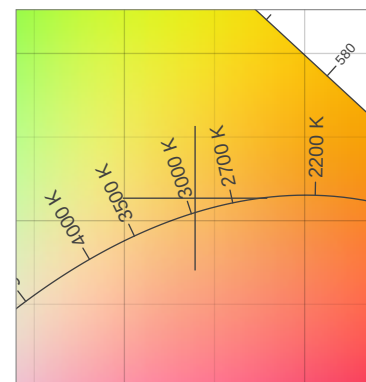
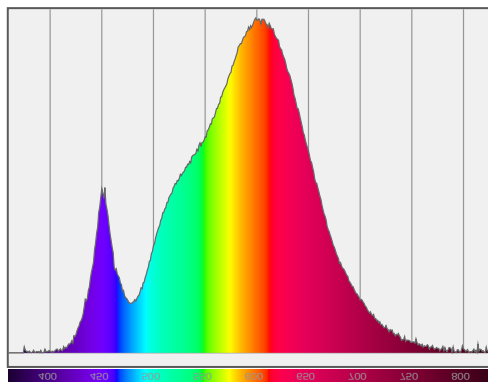
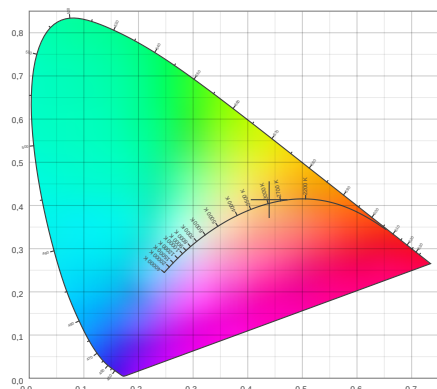
2017 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information 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-5-3000K-CRI80-FLOOD

Color details



CIE 1931

x: 0,439

3040 K

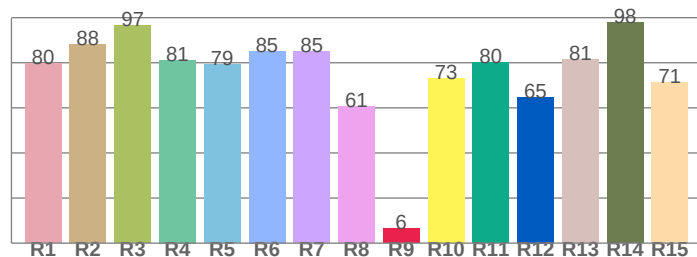
y: 0,413

Spectra

CIE 1931 ZOOM

Δuv : 0,0034

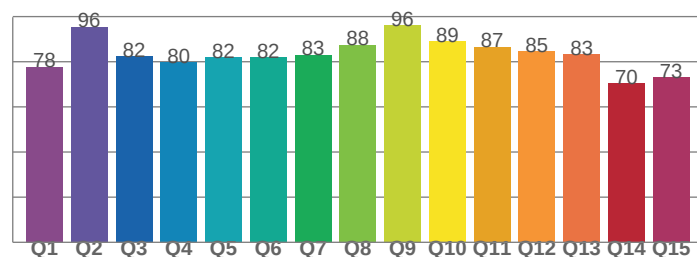
CRI: 81,9 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
79,6	88,2	96,5	81,2	79,1	85,2	85,1	60,5
R9	R10	R11	R12	R13	R14	R15	
6,4	73,0	80,1	64,8	81,3	97,9	71,4	

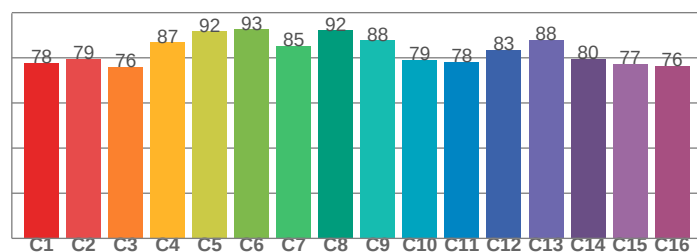
CQS: 82,1



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
77,8	95,5	82,4	79,9	82,1	82,1	83,1	87,5
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,2	89,2	86,6	84,6	83,2	70,5	73,1	

TM30: 83,2



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

C1	C2	C3	C4	C5	C6	C7	C8
77,7	79,4	75,8	86,8	91,7	92,6	85,3	92,2
C9	C10	C11	C12	C13	C14	C15	
87,7	79,1	78,2	83,5	87,9	79,5	77,4	

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
3040 K	81,9	6,4	83,2	95,6	82,1	0,439	0,413	0,248	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

Test Report

LM79-RUBY-BRACKET-5-3000K-CRI80-FLOOD

TM30 details

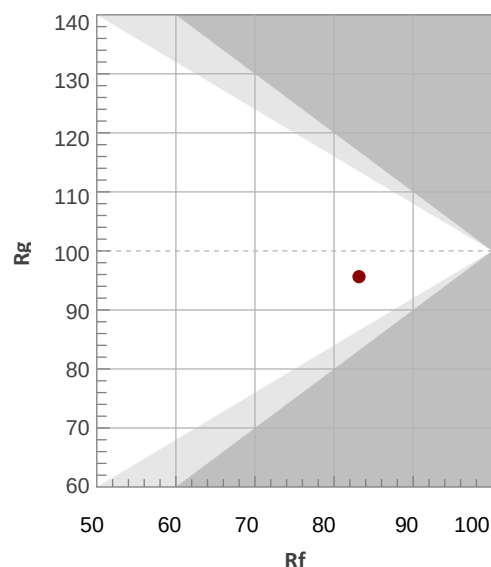
Rf 83,2

Fidelity index R_f

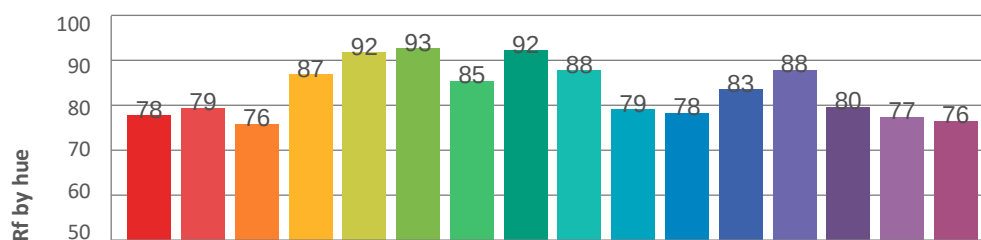
Rg 95,6

Gammut index Rg

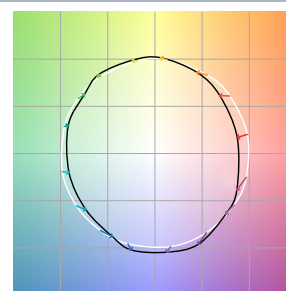
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	78	-11%	-1%
2	79	-9%	6%
3	76	-4%	11%
4	87	1%	7%
5	92	2%	5%
6	93	3%	-2%
7	85	-3%	-7%
8	92	-4%	-2%
9	88	-7%	2%
10	79	-6%	9%
11	78	-2%	14%
12	83	6%	5%
13	88	5%	-5%
14	80	5%	-14%
15	77	-2%	-13%
16	76	-7%	-15%



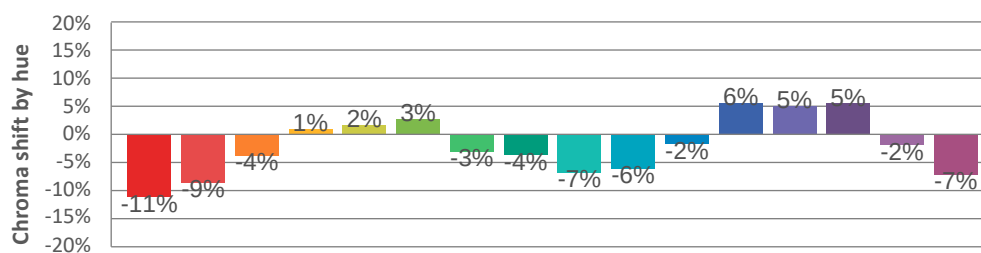
Hue binH



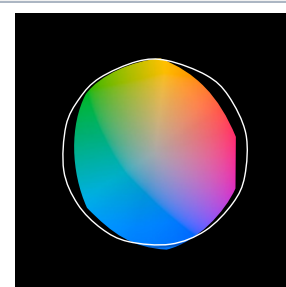
Color vector graphics



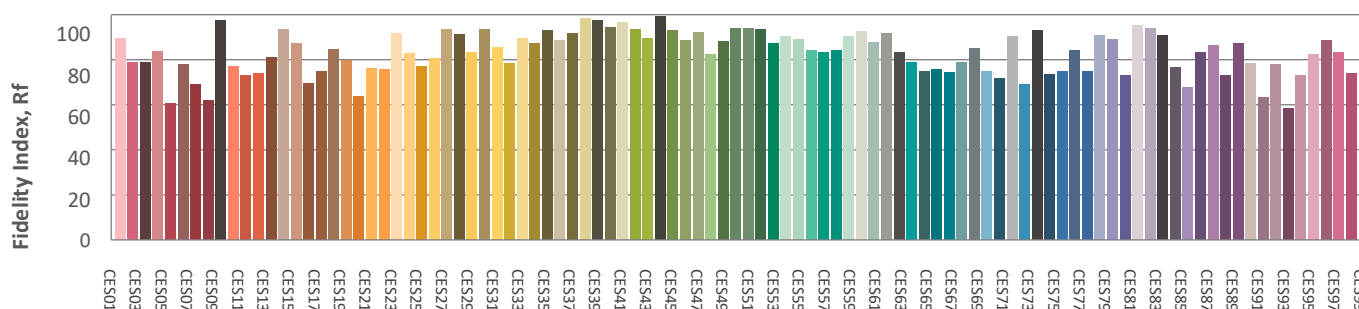
Hue bin



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-5-3000K-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	20,2	20,9	20,4	21,1	21,3	20,2	21,0	20,5	21,2	21,4
	3H	20,0	20,7	20,3	20,9	21,2	20,1	20,7	20,4	21,0	21,2
	4H	19,9	20,6	20,3	20,8	21,1	20,0	20,6	20,3	20,9	21,2
	6H	19,9	20,4	20,2	20,7	21,0	20,0	20,5	20,3	20,8	21,1
	8H	19,8	20,4	20,2	20,7	21,0	19,9	20,5	20,3	20,8	21,1
	12H	19,8	20,3	20,2	20,6	20,9	19,9	20,4	20,2	20,7	21,0
4H	2H	20,0	20,6	20,3	20,8	21,1	20,0	20,7	20,4	20,9	21,2
	3H	19,8	20,3	20,2	20,6	21,0	19,9	20,4	20,3	20,7	21,0
	4H	19,7	20,2	20,1	20,5	20,9	19,8	20,3	20,2	20,6	21,0
	6H	19,7	20,0	20,1	20,4	20,8	19,8	20,1	20,2	20,5	20,9
	8H	19,6	20,0	20,1	20,3	20,8	19,7	20,0	20,1	20,4	20,8
	12H	19,6	19,9	20,0	20,3	20,7	19,7	20,0	20,1	20,4	20,8
8H	4H	19,6	20,0	20,1	20,3	20,8	19,7	20,0	20,1	20,4	20,8
	6H	19,5	19,8	20,0	20,2	20,7	19,6	19,9	20,1	20,3	20,8
	8H	19,5	19,7	20,0	20,2	20,6	19,6	19,8	20,1	20,2	20,7
	12H	19,4	19,6	19,9	20,1	20,6	19,5	19,7	20,0	20,2	20,7
12H	4H	19,6	19,9	20,0	20,3	20,7	19,7	20,0	20,1	20,4	20,8
	6H	19,5	19,7	20,0	20,2	20,6	19,6	19,8	20,1	20,2	20,7
	8H	19,4	19,6	19,9	20,1	20,6	19,5	19,7	20,0	20,2	20,7
Variation of the observer position for the luminaire distance S											
S = 1,0H		+4,6 / -8,7					+4,5 / -8,5				
S = 1,5H		+7,3 / -16,2					+7,2 / -15,5				
S = 2,0H		+9,3 / -20,3					+9,2 / -20,1				
Standard table		BK00					BK00				
Correction summand		1,5					1,6				
Corrected glare indices referring to 1984lm 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