

LM-79

Test Report

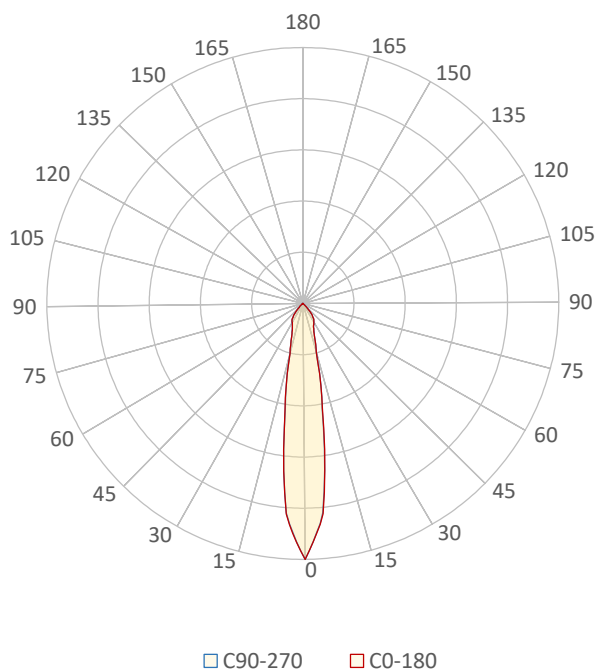
LM79-RUBY-7-2700K-CRI80-SPOT

General Description

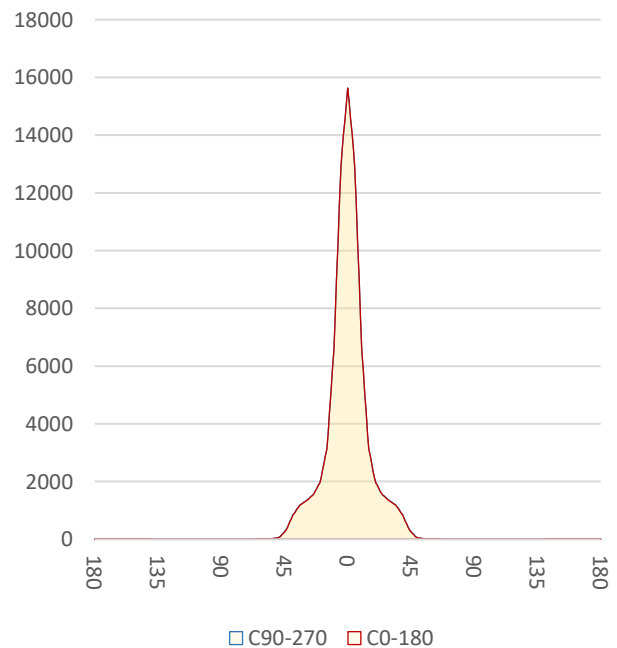
Item number	RU-17-X-X-01-1-X
Date and time	21-11-2016 09:20:07
CCT (Kelvin)	2700 K
Beam angle	17°
Luminous flux	3520 lm
Efficiency	85 lm/watt
Weighted energy	41,4 kWh/1000h
Power factor	0,95
CRI (RA)	81,1
Fidelity index Rf	Rf 83,5
Gammut index Rg	Rg 96,6
Peak	15791 cd



Polar diagram



Cartesian diagram



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-7-2700K-CRI80-SPOT

Beam details	1m	2m	3m	4m	5m														
Lux*	15634 lx	3909 lx	1737 lx	977 lx	625 lx														
*measured at center of beam																			
Footcandles*	1452,5 fcd	363,1 fcd	161,4 fcd	90,8 fcd	58,1 fcd														
Beam width (meter)	0,3 m	0,6 m	0,9 m	1,2 m	1,5 m														
Beam width (Feet)	1 ft	2 ft	3 ft	4 ft	4,9 ft														
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
15634lx	3909lx	1737lx	977lx	625lx	434lx	319lx	244lx	193lx	156lx	129lx	109lx	93lx	80lx	69lx	61lx	54lx	48lx	43lx	39lx
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
1452,5fcd	363,1fcd	161,4fcd	90,8fcd	58,1fcd	40,3fcd	29,6fcd	22,7fcd	17,9fcd	14,5fcd	12fcd	10,1fcd	8,6fcd	7,4fcd	6,5fcd	5,7fcd	5fcd	4,5fcd	4fcd	3,6fcd
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°
15,6K	15,5K	14,4K	11,4K	8,4K	6,5K	4,7K	3,4K	2,8K	2,2K	1,9K	1,7K	1,6K	1,5K	1,4K	1,3K	1,3K	1,2K	1,1K	1,0K
100%	99%	92%	73%	54%	42%	30%	22%	18%	14%	12%	11%	10%	9%	9%	8%	8%	8%	7%	6%
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°
15,6K	15,8K	14,3K	11,3K	8,4K	6,5K	4,6K	3,4K	2,8K	2,2K	1,9K	1,7K	1,6K	1,5K	1,4K	1,3K	1,3K	1,2K	1,1K	1,0K
100%	101%	91%	72%	53%	41%	29%	22%	18%	14%	12%	11%	10%	9%	9%	9%	8%	8%	7%	6%
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°
15,6K	15,5K	14,4K	11,4K	8,4K	6,5K	4,7K	3,4K	2,8K	2,2K	1,9K	1,7K	1,6K	1,5K	1,4K	1,3K	1,3K	1,2K	1,1K	1,0K
100%	99%	92%	73%	54%	42%	30%	22%	18%	14%	12%	11%	10%	9%	9%	8%	8%	8%	7%	6%
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°
15,6K	15,8K	14,3K	11,3K	8,4K	6,5K	4,6K	3,4K	2,8K	2,2K	1,9K	1,7K	1,6K	1,5K	1,4K	1,3K	1,3K	1,2K	1,1K	1,0K
100%	101%	91%	72%	53%	41%	29%	22%	18%	14%	12%	11%	10%	9%	9%	9%	8%	8%	7%	6%
Beam angle 50%		Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone					
17,2°		48,4°				85,8°				99,4%				98,0%					



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

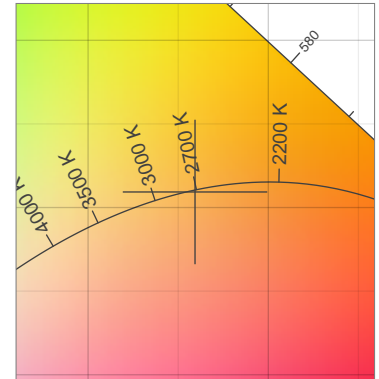
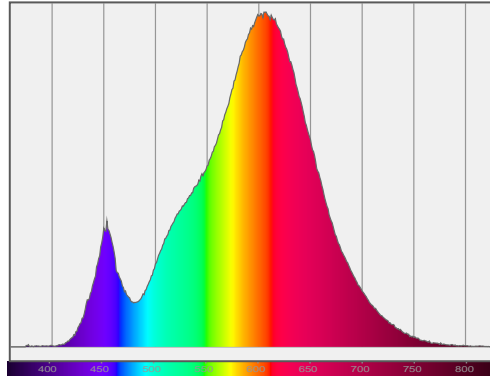
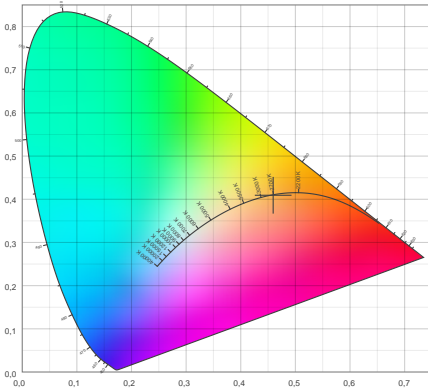
2017 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information 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-7-2700K-CRI80-SPOT

Color details



CIE 1931

x: 0,459



Spectra

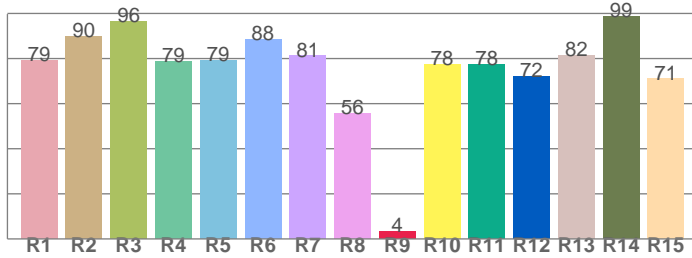
CIE 1931 ZOOM

2700 K

y: 0,409

Δuv : 0,0005

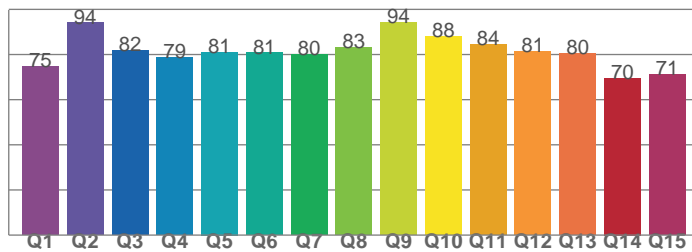
CRI: **81,1** (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
79,2	90,0	96,4	78,6	79,0	88,3	81,2	55,9
R9	R10	R11	R12	R13	R14	R15	
3,5	77,6	77,6	72,3	81,6	98,7	71,0	

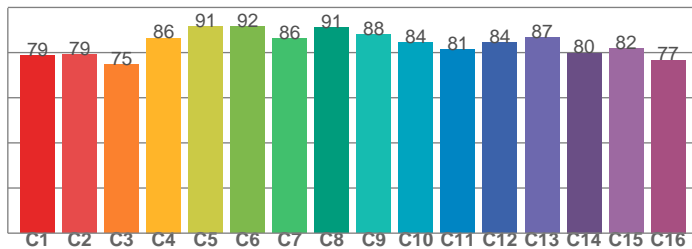
CQS: **80,2**



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
74,8	94,0	81,9	78,8	81,1	80,7	79,9	83,0
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
94,3	87,9	84,3	81,4	80,4	69,6	71,1	

TM30: **83,5**



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

C1	C2	C3	C4	C5	C6	C7	C8
78,7	79,0	74,8	86,5	91,4	91,5	86,2	91,1
C9	C10	C11	C12	C13	C14	C15	
88,1	84,5	81,4	84,4	86,7	79,8	81,7	

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
2700 K	81,1	3,5	83,5	96,6	80,2	0,459	0,409	0,263	0,351	0,0005



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-7-2700K-CRI80-SPOT

TM30 details

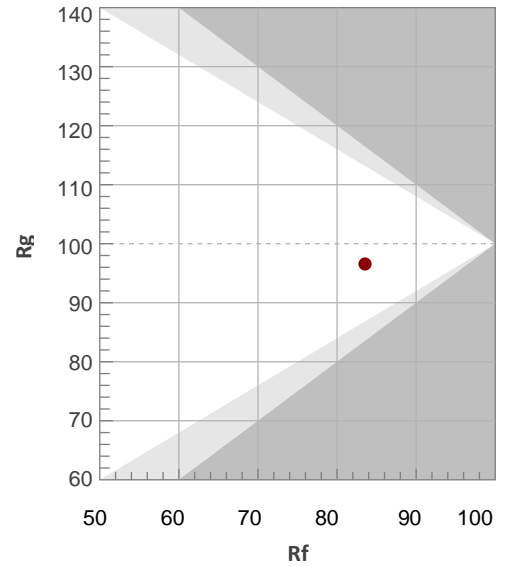
Rf 83,5

Fidelity index Rf

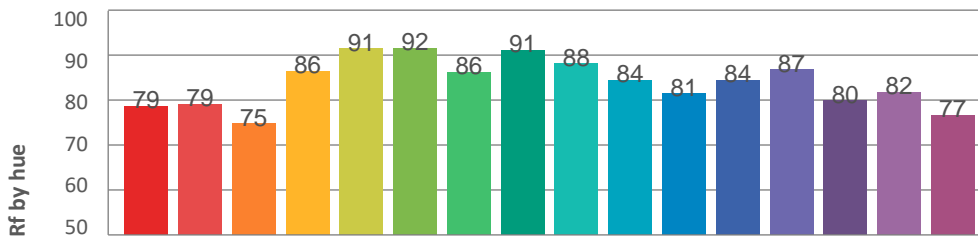
Rg 96,6

Gamut index Rg

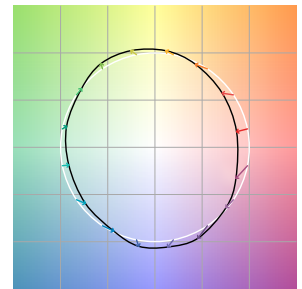
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	79	-12%	-1%
2	79	-9%	8%
3	75	-3%	13%
4	86	3%	9%
5	91	5%	5%
6	92	5%	-2%
7	86	-1%	-9%
8	91	-4%	-4%
9	88	-7%	1%
10	84	-6%	8%
11	81	-2%	13%
12	84	6%	4%
13	87	6%	-7%
14	80	5%	-16%
15	82	-2%	-11%
16	77	-9%	-15%



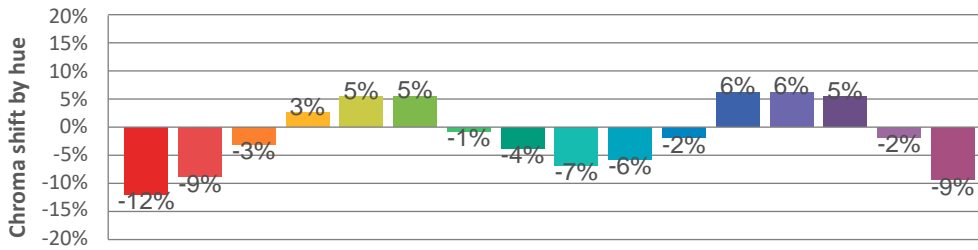
Hue binH



Color vector graphics



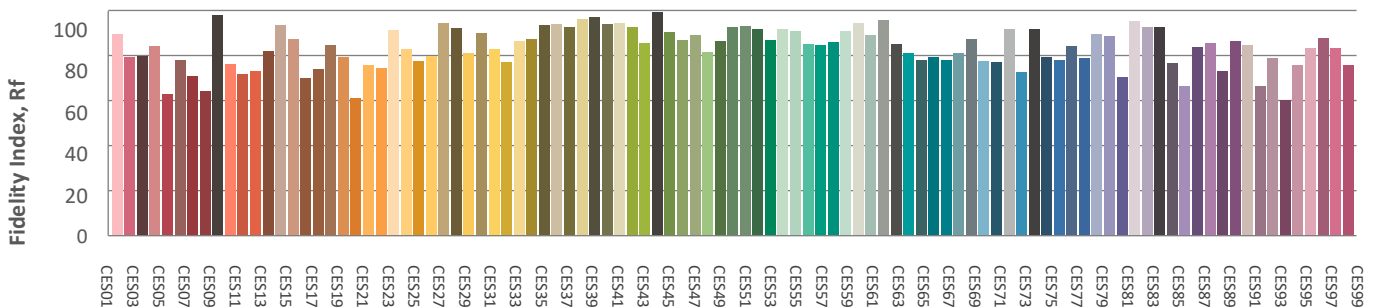
Hue bin



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

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				
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Variation of the observer position for the luminaire distance S										
n/a	n/a				n/a					
n/a	n/a				n/a					
n/a	n/a				n/a					
Standard table	n/a				n/a					
Correction summand	n/a				n/a					
Corrected glare indices referring to 3520lm total luminous flux										