

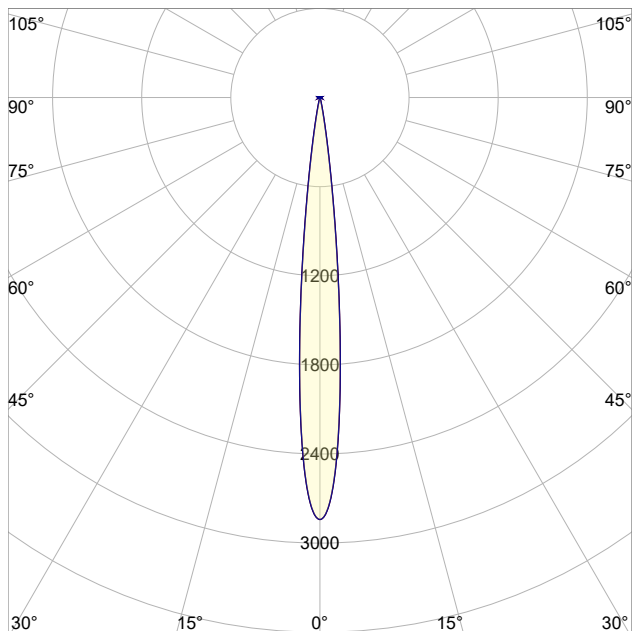
LM-79

Test Report

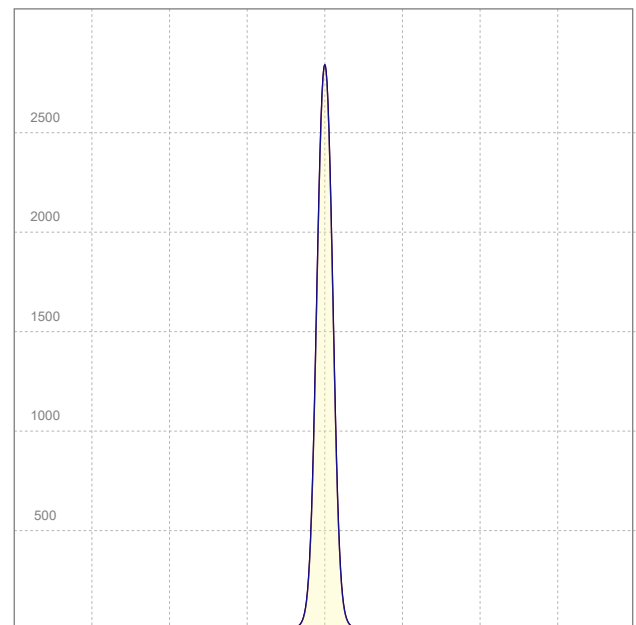
LM79-FOCUS-G4-3500K-CRI95-SPOT

General Description

Item number	FS-XX-X-3595-Z
Date and time	14-9-2022 15:40:44
CCT (Kelvin)	3487 K
Beam angle	10,6°
Luminous flux	112 lm
Efficiency	17 lm/watt
Weighted energy	6,7 kWh/1000h
Power factor	0,8
CRI (RA)	92,7
Fidelity index Rf	Rf 90,6
Gammut index Rg	Rg 102,9
Peak	2839 cd



Polar curve



Linear distribution diagram



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

2021 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-FOCUS-G4-3500K-CRI95-SPOT

Beam details	1m	2m	3m	4m	5m														
Lux*	2839 lx	710 lx	315 lx	177 lx	114 lx														
*measured at center of beam																			
Footcandles*	263,7 fcd	65,9 fcd	29,3 fcd	16,5 fcd	10,5 fcd														
Beam width (meter)	0,2 m	0,4 m	0,6 m	0,7 m	0,9 m														
Beam width (Feet)	0,6 ft	1,2 ft	1,8 ft	2,4 ft	3 ft														
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
2839lx	710lx	315lx	177lx	114lx	79lx	58lx	44lx	35lx	28lx	23lx	20lx	17lx	14lx	13lx	11lx	10lx	9lx	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
263,7fcd	65,9fcd	29,3fcd	16,5fcd	10,5fcd	7,3fcd	5,4fcd	4,1fcd	3,3fcd	2,6fcd	2,2fcd	1,8fcd	1,6fcd	1,3fcd	1,2fcd	1fcd	0,9fcd	0,8fcd	0,7fcd	0,7fcd
Intensities in 0° c-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
2839	2781	2602	2317	1946	1535	1132	783	514	323	199	121	76	49	32	23	17	13	10	8
100%	98%	92%	82%	69%	54%	40%	28%	18%	11%	7%	4%	3%	2%	1%	1%	1%	0%	0%	0%
Intensities in 90° c-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
2839	2781	2602	2317	1946	1535	1132	783	514	323	199	121	76	49	32	23	17	13	10	8
100%	98%	92%	82%	69%	54%	40%	28%	18%	11%	7%	4%	3%	2%	1%	1%	1%	0%	0%	0%
Intensities in 180° c-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
2839	2781	2602	2317	1946	1535	1132	783	514	323	199	121	76	49	32	23	17	13	10	8
100%	98%	92%	82%	69%	54%	40%	28%	18%	11%	7%	4%	3%	2%	1%	1%	1%	0%	0%	0%
Intensities in 270° c-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
2839	2781	2602	2317	1946	1535	1132	783	514	323	199	121	76	49	32	23	17	13	10	8
100%	98%	92%	82%	69%	54%	40%	28%	18%	11%	7%	4%	3%	2%	1%	1%	1%	0%	0%	0%
Beam angle 50%		Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone					
10,6°		18,5°				24,3°				99,8%				99,0%					



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

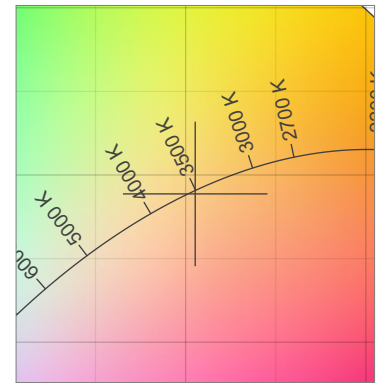
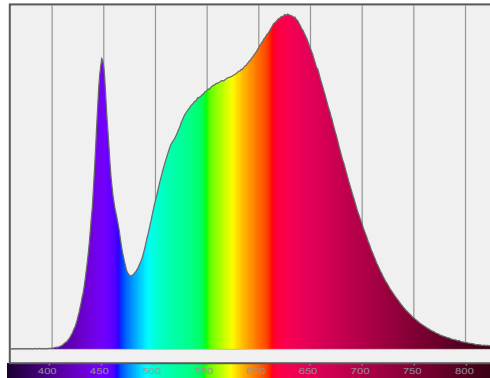
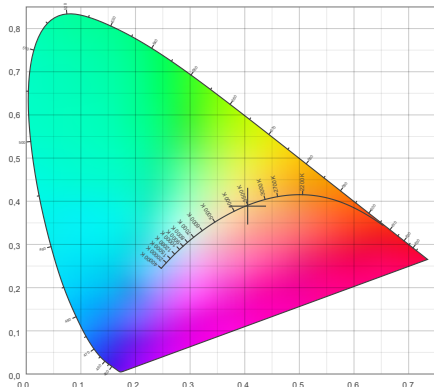
2021 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information 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-FOCUS-G4-3500K-CRI95-SPOT

Color details



CIE 1931

x: 0,405



Spectra

CIE 1931 ZOOM

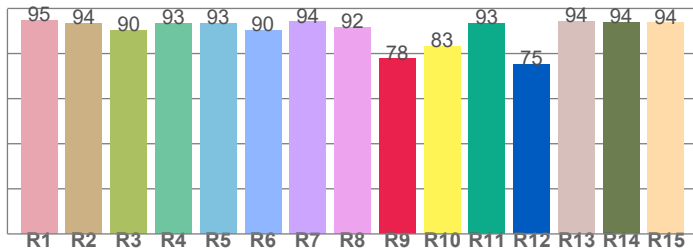
3487 K

y: 0,389

$\Delta uv: -0,0009$

CRI: 92,7 (R1-R8)

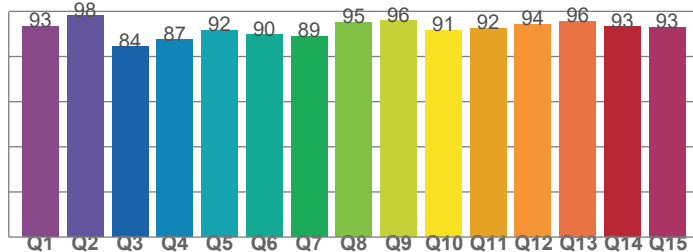
CRI values, R1-R8 are used to calculate final CRI value



R1	R2	R3	R4	R5	R6	R7	R8
94,8	93,6	90,3	93,3	93,3	90,3	94,1	91,7
R9	R10	R11	R12	R13	R14	R15	
77,6	83,4	93,2	75,3	94,2	93,8	93,7	

CQS: 91,6

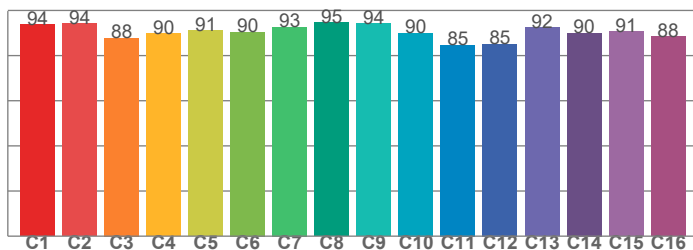
CQS values



Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
93,3	98,0	84,4	87,4	91,6	89,6	89,0	95,0
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
95,8	91,5	92,4	94,2	95,7	93,2	93,1	

TM30: 90,6

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



C1	C2	C3	C4	C5	C6	C7	C8
93,7	94,3	87,8	89,7	91,2	90,4	92,7	94,6
C9	C10	C11	C12	C13	C14	C15	
94,1	90,0	84,7	85,2	92,5	90,1	90,6	

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
3487 K	92,7	77,6	90,6	102,9	91,6	0,405	0,389	0,237	0,340	-0,0009



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

2021 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-FOCUS-G4-3500K-CRI95-SPOT

TM30 details

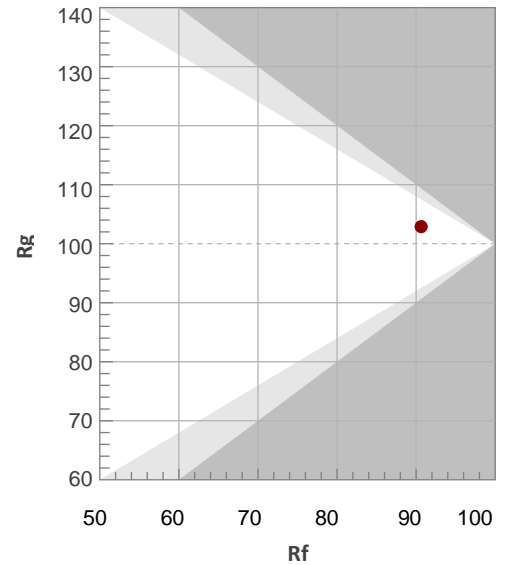
Rf 90,6

Fidelity index Rf

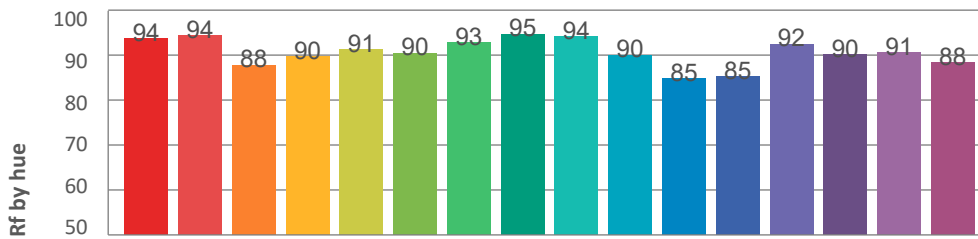
Rg 102,9

Gamut index Rg

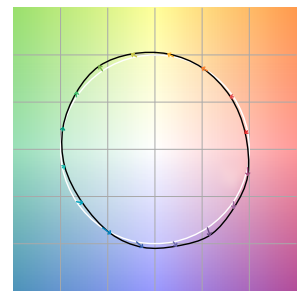
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	94	-3%	-2%
2	94	-3%	2%
3	88	0%	6%
4	90	2%	6%
5	91	4%	4%
6	90	6%	0%
7	93	3%	-4%
8	95	0%	-3%
9	94	-3%	-1%
10	90	-5%	4%
11	85	0%	10%
12	85	4%	7%
13	92	5%	2%
14	90	8%	-2%
15	91	4%	-5%
16	88	2%	-8%



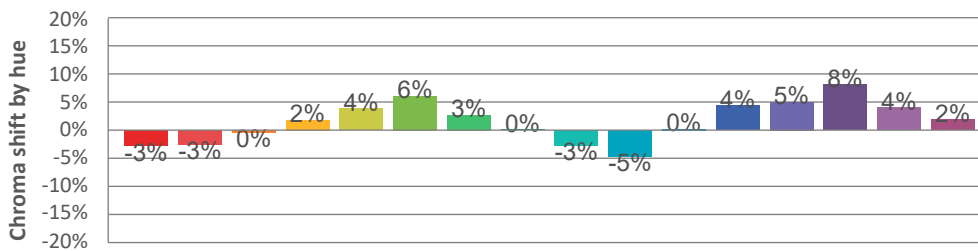
Hue binH



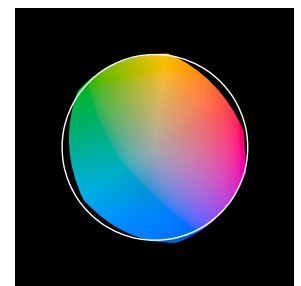
Color vector graphics



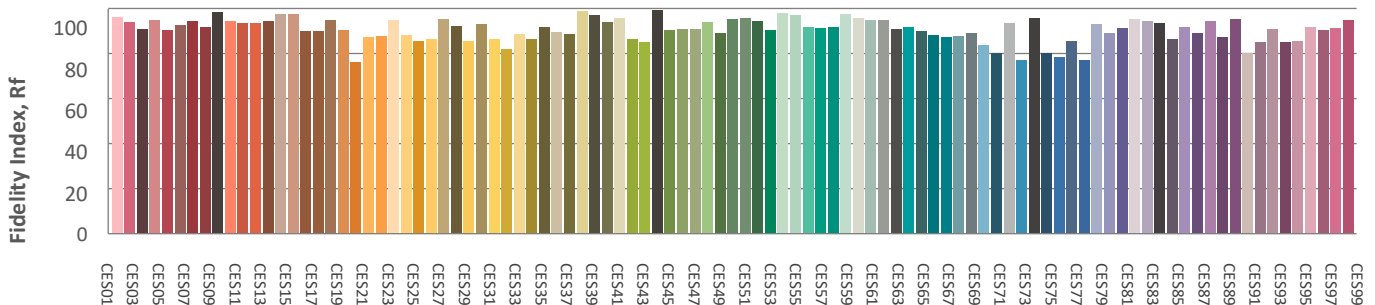
Hue bin



Color distortion graphics



Color Evaluation Sample



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

2021 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-FOCUS-G4-3500K-CRI95-SPOT

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	1,8	2,0	1,8	2,2	2,4	1,8	2,0	1,8	2,2	2,4
	3H	1,5	2,0	1,9	2,1	2,3	1,5	2,0	1,9	2,1	2,3
	4H	1,6	2,0	2,0	2,2	2,4	1,6	2,0	2,0	2,2	2,4
	6H	1,7	2,0	2,0	2,3	2,6	1,7	2,0	2,0	2,3	2,6
	8H	1,7	2,0	2,0	2,4	2,7	1,7	2,0	2,0	2,4	2,7
	12H	1,8	2,1	2,2	2,5	2,9	1,8	2,1	2,2	2,5	2,9
4H	2H	1,5	1,9	1,9	2,1	2,4	1,5	1,9	1,9	2,1	2,4
	3H	1,5	1,8	1,8	2,2	2,6	1,5	1,8	1,8	2,2	2,6
	4H	1,5	1,8	1,9	2,3	2,8	1,5	1,8	1,9	2,3	2,8
	6H	1,6	2,0	2,1	2,3	2,7	1,6	2,0	2,1	2,3	2,7
	8H	1,7	2,1	2,3	2,4	2,8	1,7	2,1	2,3	2,4	2,8
	12H	2,0	2,2	2,5	2,6	3,1	2,0	2,2	2,5	2,6	3,1
8H	4H	1,5	1,8	2,0	2,1	2,5	1,5	1,8	2,0	2,1	2,5
	6H	1,7	1,9	2,2	2,3	2,9	1,7	1,9	2,2	2,3	2,9
	8H	2,0	2,1	2,5	2,6	3,2	2,0	2,1	2,5	2,6	3,2
	12H	2,3	2,5	2,9	3,0	3,6	2,3	2,5	2,9	3,0	3,6
12H	4H	1,4	1,7	1,9	2,1	2,5	1,4	1,7	1,9	2,1	2,5
	6H	1,7	1,9	2,3	2,4	3,0	1,7	1,9	2,3	2,4	3,0
	8H	2,0	2,1	2,6	2,6	3,2	2,0	2,1	2,6	2,6	3,2
Variation of the observer position for the luminaire distance S											
S = 1.0H	0,7 / -1,1					0,7 / -1,1					
S = 1.5H	1,8 / -2,1					1,8 / -2,1					
S = 2.0H	3,1 / -2,8					3,1 / -2,8					
Standard table	n/a					n/a					
Correction summand	n/a					n/a					
Corrected glare indices referring to 112lm total luminous flux											



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

2021 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