

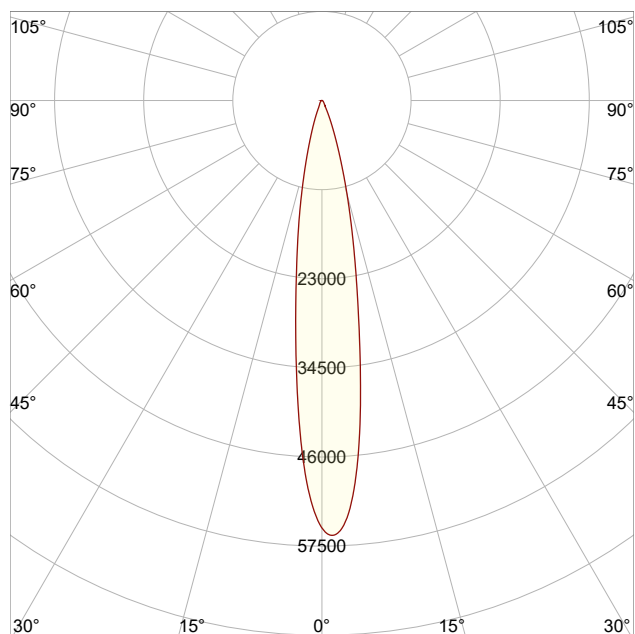
LM-79

Test Report

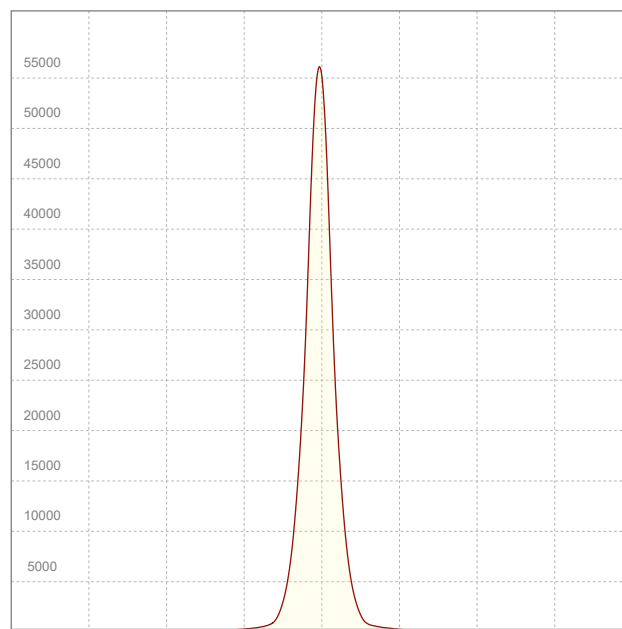
LM79-QUARTZ-3000K-CRI90-ELLIPTICAL

General Discription

Item number	Q-X-X-3090-W
Date and time	5-1-2024 12:23:05
CCT (Kelvin)	3100 K
Beam angle	16,6°
Luminous flux	7870 lm
Efficiency	101 lm/watt
Weighted energy	77,7 kWh/1000h
Power factor	0,56
CRI (RA)	88,0
Fidelity index Rf	Rf 88,3
Gammut index Rg	Rg 99,2
Peak	56064 cd



Polar curve



Linear distribution diagram



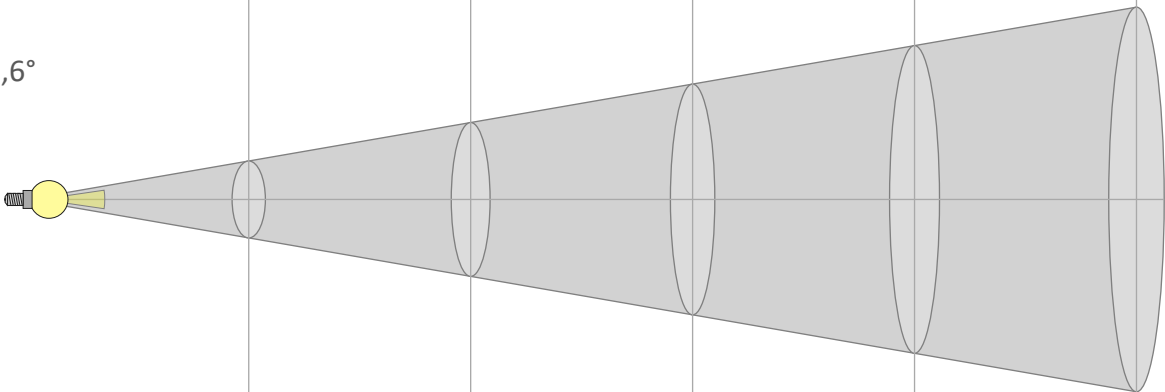
CLS LED BV
info@cls-led.com
www.cls-led.com

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-QUARTZ-3000K-CRI90-ELLIPTICAL

Beam details					1m		2m		3m		4m		5m						
Lux*					55037 lx		13759 lx		6115 lx		3440 lx		2201 lx						
16,6° 																			
*measured at center of beam																			
Footcandles*					5113,1 fcd		1278,3 fcd		568,1 fcd		319,6 fcd		204,5 fcd						
Beam width (meter)					0,3 m		0,6 m		0,9 m		1,2 m		1,5 m						
Beam width (Feet)					1 ft		1,9 ft		2,9 ft		3,8 ft		4,8 ft						
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
55037lx	13759lx	6115lx	3440lx	2201lx	1529lx	1123lx	860lx	679lx	550lx	455lx	382lx	326lx	281lx	245lx	215lx	190lx	170lx	152lx	138lx
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
5113,1fcd	1278,3fcd	568,1fcd	319,6fcd	204,5fcd	142fcd	104,3fcd	79,9fcd	63,1fcd	51,1fcd	42,3fcd	35,5fcd	30,3fcd	26,1fcd	22,7fcd	20fcd	17,7fcd	15,8fcd	14,2fcd	12,8fcd
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°
55,0K	55,9K	55,8K	54,7K	52,4K	49,2K	45,2K	40,6K	35,7K	31,0K	26,8K	23,2K	20,0K	17,2K	14,7K	12,5K	10,5K	8,7K	7,2K	6,0K
100%	102%	101%	99%	95%	89%	82%	74%	65%	56%	49%	42%	36%	31%	27%	23%	19%	16%	13%	11%
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°
55,0K	55,9K	55,8K	54,7K	52,4K	49,2K	45,2K	40,6K	35,7K	31,0K	26,8K	23,2K	20,0K	17,2K	14,7K	12,5K	10,5K	8,7K	7,2K	6,0K
100%	102%	101%	99%	95%	89%	82%	74%	65%	56%	49%	42%	36%	31%	27%	23%	19%	16%	13%	11%
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°
55,0K	53,1K	50,2K	46,3K	41,7K	36,9K	32,1K	27,8K	23,9K	20,6K	17,8K	15,3K	12,9K	10,9K	9,1K	7,5K	6,2K	5,1K	4,2K	3,5K
100%	96%	91%	84%	76%	67%	58%	51%	43%	37%	32%	28%	23%	20%	16%	14%	11%	9%	8%	6%
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°
55,0K	53,1K	50,2K	46,3K	41,7K	36,9K	32,1K	27,8K	23,9K	20,6K	17,8K	15,3K	12,9K	10,9K	9,1K	7,5K	6,2K	5,1K	4,2K	3,5K
100%	96%	91%	84%	76%	67%	58%	51%	43%	37%	32%	28%	23%	20%	16%	14%	11%	9%	8%	6%
Beam angle 50%				Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone			
16,6°				35,9°				49,5°				97,5%				94,1%			



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

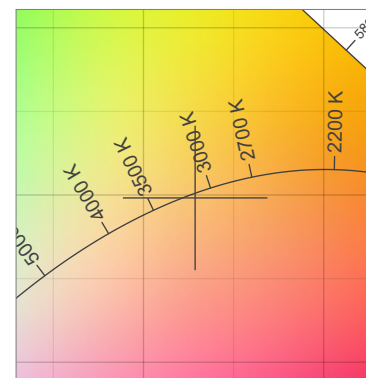
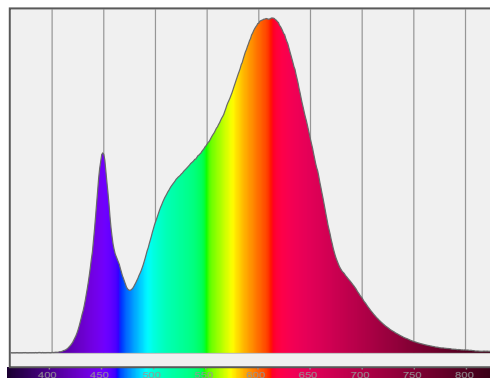
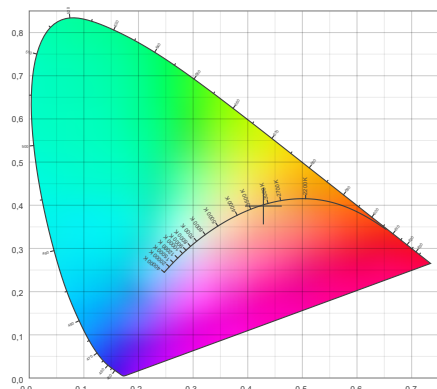
2021 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information 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-QUARTZ-3000K-CRI90-ELLIPTICAL

Color details



CIE 1931

x: 0,429



Spectra

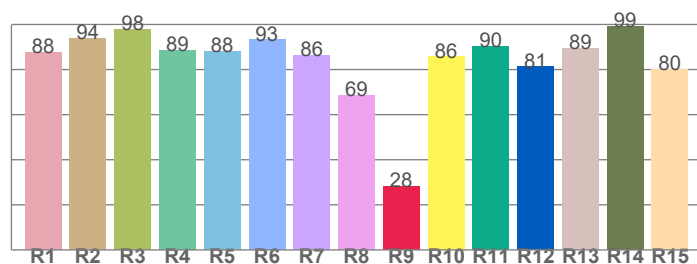
CIE 1931 ZOOM

3100 K

y: 0,398

Δuv : -0,0012

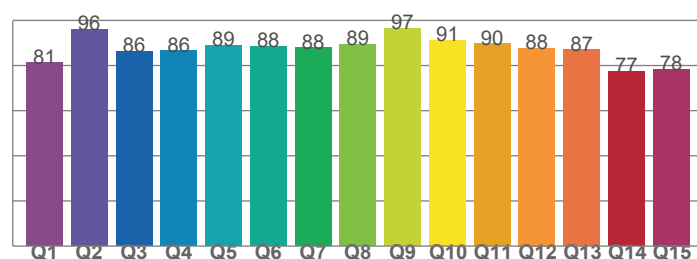
CRI: **88,0** (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
87,6	93,8	97,7	88,6	88,1	93,2	86,4	68,7
R9	R10	R11	R12	R13	R14	R15	
28,1	85,7	90,3	81,2	89,3	99,1	80,2	

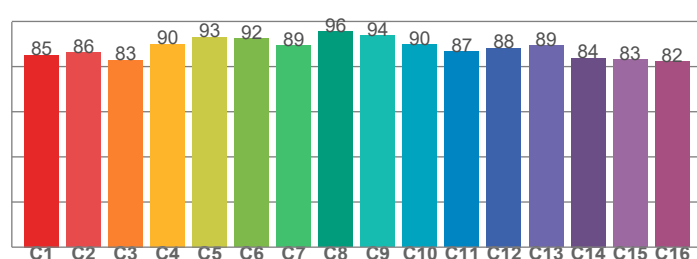
CQS: **86,3**



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
81,2	96,1	86,2	86,5	88,9	88,4	87,9	89,4
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,5	91,3	89,7	87,8	86,9	77,4	78,4	

TM30: **88,3**



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

C1	C2	C3	C4	C5	C6	C7	C8
85,1	86,3	82,9	90,0	93,1	92,4	89,3	95,7
C9	C10	C11	C12	C13	C14	C15	
93,6	89,7	86,6	88,2	89,3	83,8	83,2	

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
3100 K	88,0	28,1	88,3	99,2	86,3	0,429	0,398	0,248	0,345	-0,0012



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-QUARTZ-3000K-CRI90-ELLIPTICAL

TM30 details

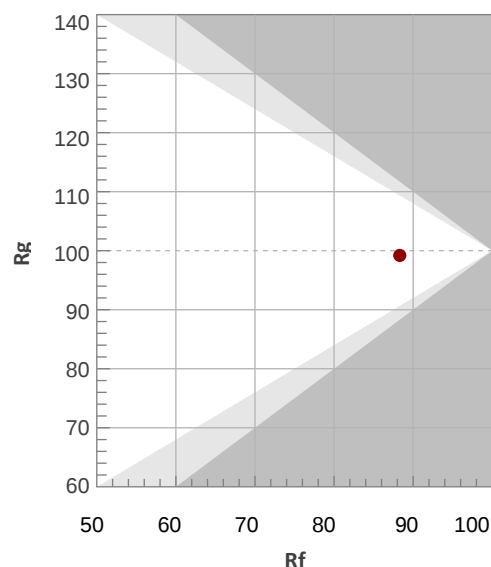
Rf 88,3

Fidelity index Rf

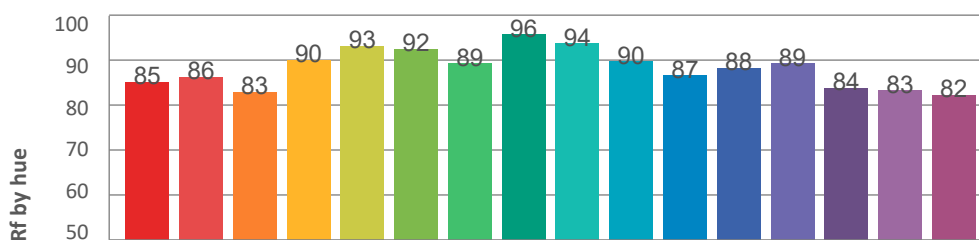
Rg 99,2

Gamut index Rg

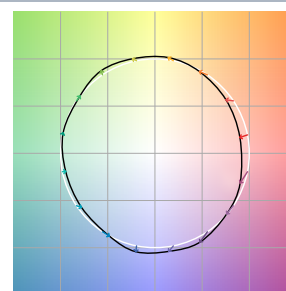
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	85	-8%	-1%
2	86	-6%	5%
3	83	-2%	9%
4	90	2%	6%
5	93	3%	4%
6	92	4%	-1%
7	89	0%	-6%
8	96	0%	-2%
9	94	-4%	0%
10	90	-3%	4%
11	87	0%	9%
12	88	6%	0%
13	89	5%	-6%
14	84	5%	-13%
15	83	-1%	-11%
16	82	-5%	-13%



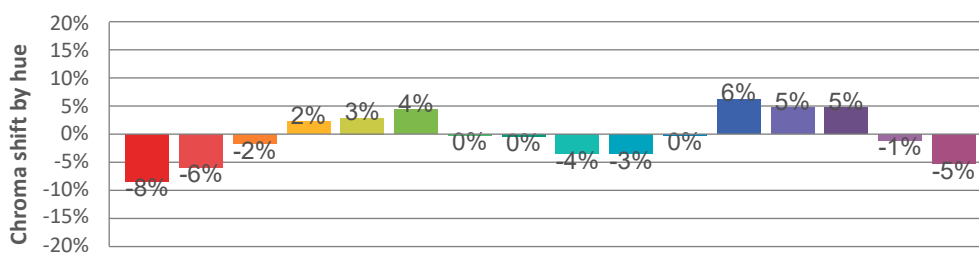
Hue binH



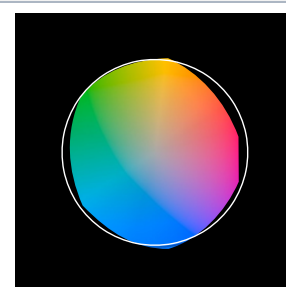
Color vector graphics



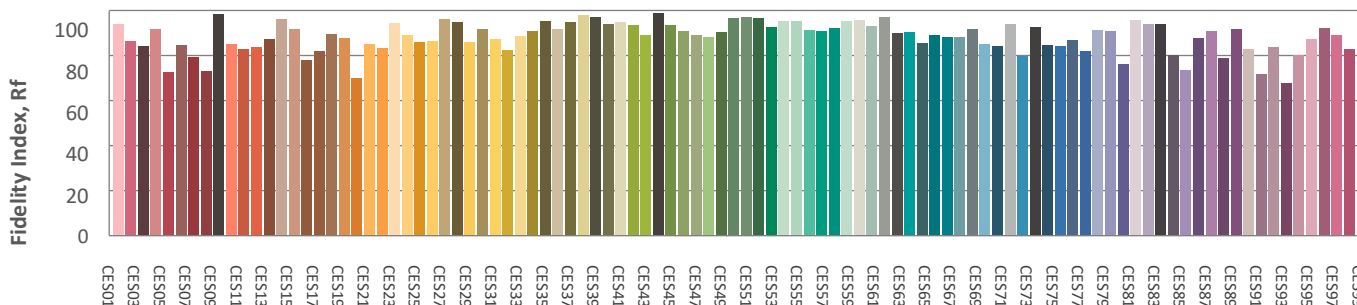
Hue bin



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

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 7870lm total luminous flux										