

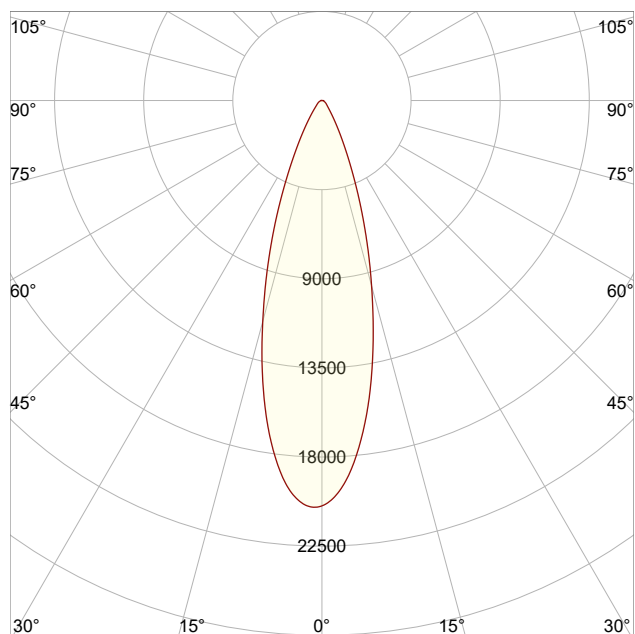
LM-79

Test Report

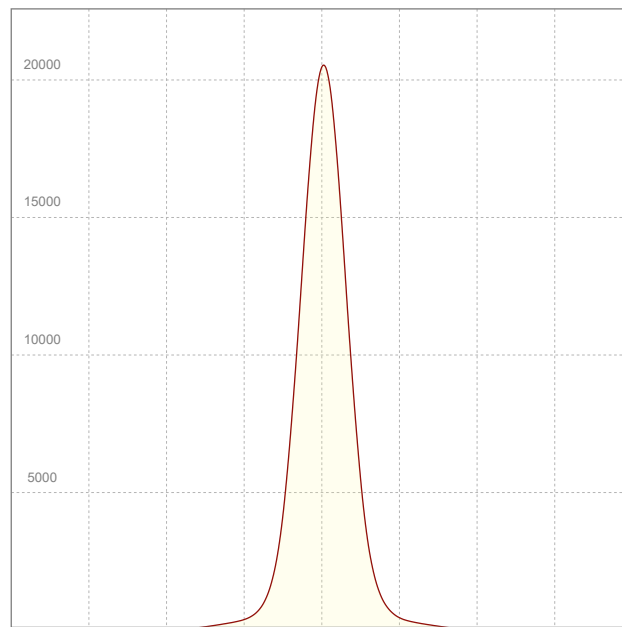
LM79-QUARTZ-2700K-CRI80-MEDIUM

General Discription

Item number	Q-BXX-2780-M
Date and time	5-1-2024 15:36:39
CCT (Kelvin)	2718 K
Beam angle	30,7°
Luminous flux	7699 lm
Efficiency	100 lm/watt
Weighted energy	77,2 kWh/1000h
Power factor	0,55
CRI (RA)	86,6
Fidelity index Rf	Rf 87,9
Gammut index Rg	Rg 98,1
Peak	20532 cd



Polar curve



Linear distribution diagram



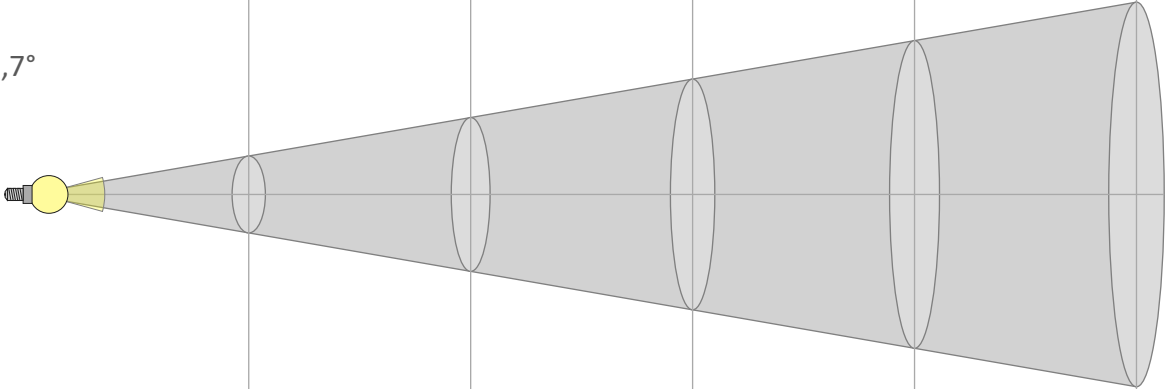
CLS LED BV
info@cls-led.com
www.cls-led.com

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-2700K-CRI80-MEDIUM

Beam details					1m		2m		3m		4m		5m						
Lux*					20451 lx		5113 lx		2272 lx		1278 lx		818 lx						
30,7° 																			
*measured at center of beam																			
Footcandles*					1900,0 fcd		475,0 fcd		211,1 fcd		118,7 fcd		76,0 fcd						
Beam width (meter)					0,5 m		1,1 m		1,6 m		2,2 m		2,7 m						
Beam width (Feet)					1,8 ft		3,6 ft		5,4 ft		7,2 ft		9 ft						
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
20451lx	5113lx	2272lx	1278lx	818lx	568lx	417lx	320lx	252lx	205lx	169lx	142lx	121lx	104lx	91lx	80lx	71lx	63lx	57lx	51lx
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
1900fcd	475fcd	211,1fcd	118,7fcd	76fcd	52,8fcd	38,8fcd	29,7fcd	23,5fcd	19fcd	15,7fcd	13,2fcd	11,2fcd	9,7fcd	8,4fcd	7,4fcd	6,6fcd	5,9fcd	5,3fcd	4,7fcd
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°
20,5K	19,9K	19,0K	17,7K	16,1K	14,3K	12,4K	10,6K	8,8K	7,2K	5,8K	4,5K	3,4K	2,6K	2,0K	1,5K	1,2K	1,0K	0,8K	0,6K
100%	98%	93%	86%	79%	70%	61%	52%	43%	35%	28%	22%	17%	13%	10%	8%	6%	5%	4%	3%
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°
20,5K	19,9K	19,0K	17,7K	16,1K	14,3K	12,4K	10,6K	8,8K	7,2K	5,8K	4,5K	3,4K	2,6K	2,0K	1,5K	1,2K	1,0K	0,8K	0,6K
100%	98%	93%	86%	79%	70%	61%	52%	43%	35%	28%	22%	17%	13%	10%	8%	6%	5%	4%	3%
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°
20,5K	20,5K	20,0K	19,1K	17,8K	16,2K	14,4K	12,5K	10,6K	8,9K	7,3K	5,8K	4,5K	3,5K	2,7K	2,1K	1,6K	1,3K	1,0K	0,8K
100%	100%	98%	93%	87%	79%	70%	61%	52%	43%	36%	28%	22%	17%	13%	10%	8%	6%	5%	4%
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°
20,5K	20,5K	20,0K	19,1K	17,8K	16,2K	14,4K	12,5K	10,6K	8,9K	7,3K	5,8K	4,5K	3,5K	2,7K	2,1K	1,6K	1,3K	1,0K	0,8K
100%	100%	98%	93%	87%	79%	70%	61%	52%	43%	36%	28%	22%	17%	13%	10%	8%	6%	5%	4%
Beam angle 50%				Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone			
30,7°				58°				83,6°				96,9%				92,0%			



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

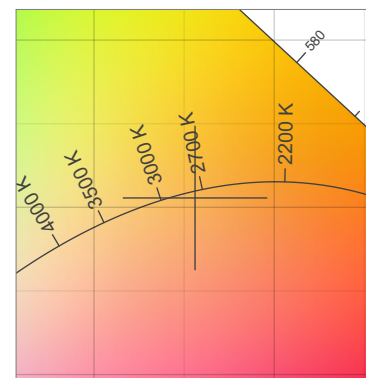
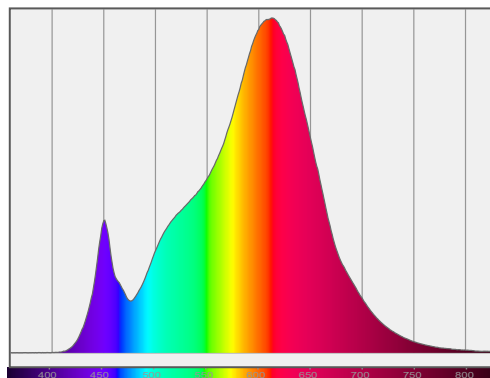
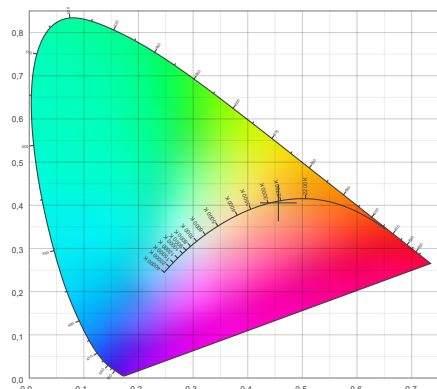
2021 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information 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-QUARTZ-2700K-CRI80-MEDIUM

Color details



CIE 1931

x: 0,456



Spectra

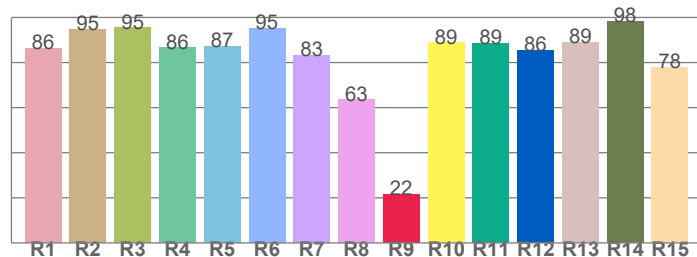
CIE 1931 ZOOM

2718 K

y: 0,406

Δuv : -0,0016

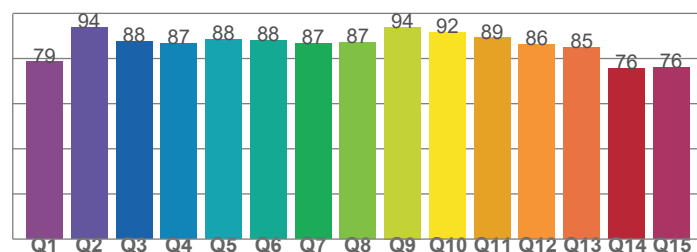
CRI: 86,6 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
86,5	94,9	95,4	86,5	87,4	95,3	83,2	63,4
R9	R10	R11	R12	R13	R14	R15	
21,7	88,7	88,6	85,6	88,8	98,3	78,0	

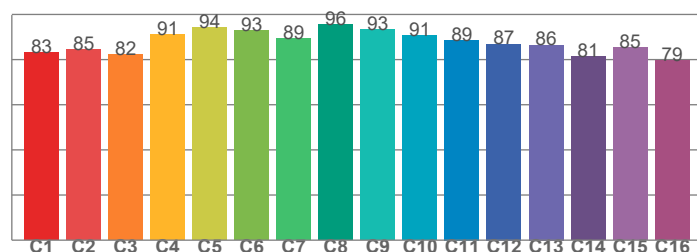
CQS: 85,1



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
78,5	93,7	87,7	86,7	88,5	88,0	86,6	87,1
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
93,9	91,6	89,2	86,2	85,0	75,5	76,2	

TM30: 87,9



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

C1	C2	C3	C4	C5	C6	C7	C8
83,2	84,6	82,2	91,2	94,3	92,9	89,3	95,7
C9	C10	C11	C12	C13	C14	C15	
93,2	90,8	88,6	86,9	86,5	81,3	85,4	

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
2718 K	86,6	21,7	87,9	98,1	85,1	0,456	0,406	0,262	0,350	-0,0016



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-2700K-CRI80-MEDIUM

TM30 details

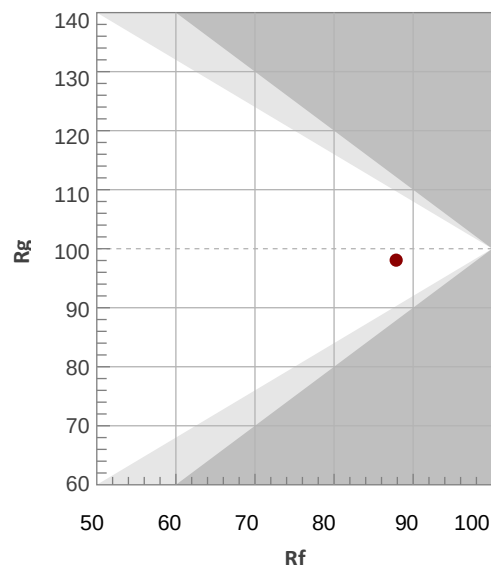
Rf 87,9

Fidelity index Rf

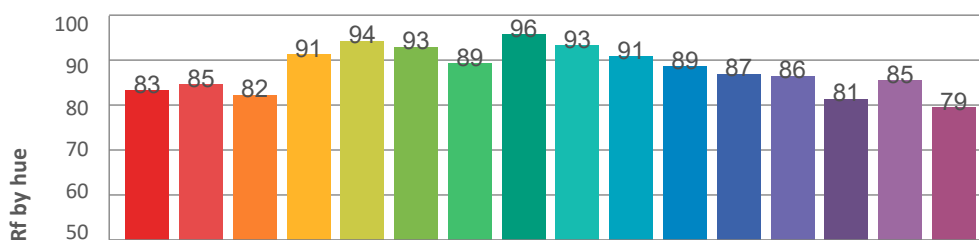
Rg 98,1

Gamut index Rg

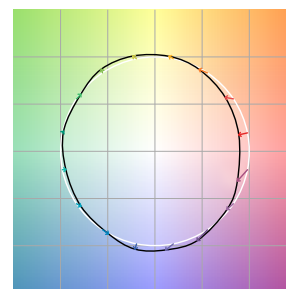
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	83	-9%	0%
2	85	-6%	6%
3	82	-2%	9%
4	91	2%	5%
5	94	4%	3%
6	93	4%	-1%
7	89	-1%	-7%
8	96	-1%	-2%
9	93	-4%	1%
10	91	-2%	5%
11	89	0%	8%
12	87	6%	-1%
13	86	5%	-9%
14	81	4%	-15%
15	85	-2%	-9%
16	79	-8%	-14%



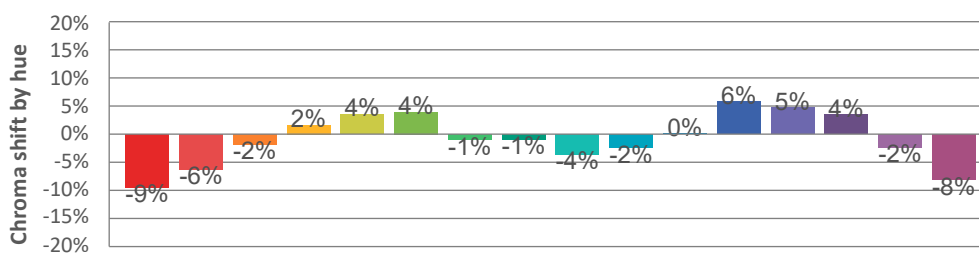
Hue binH



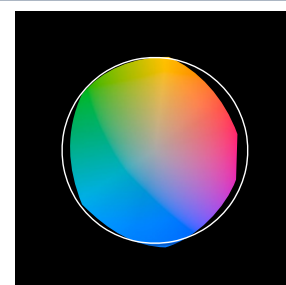
Color vector graphics



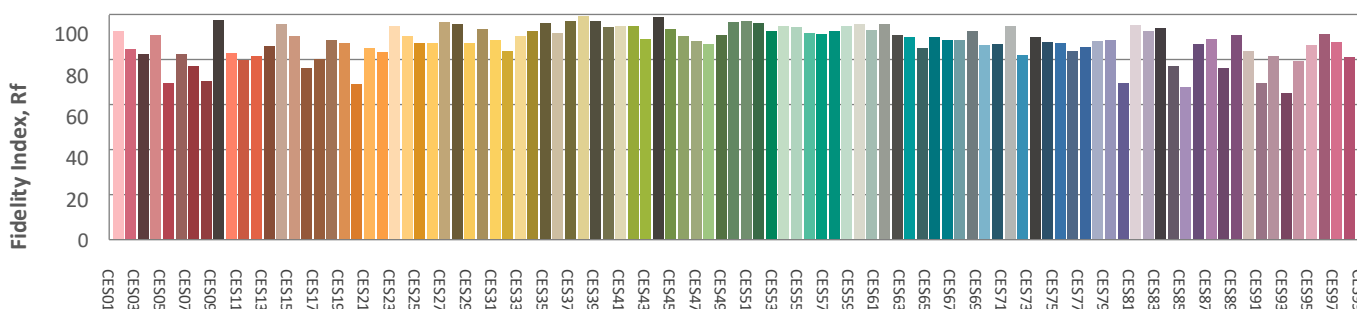
Hue bin



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

Test Report

LM79-QUARTZ-2700K-CRI80-MEDIUM

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 7699lm 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