

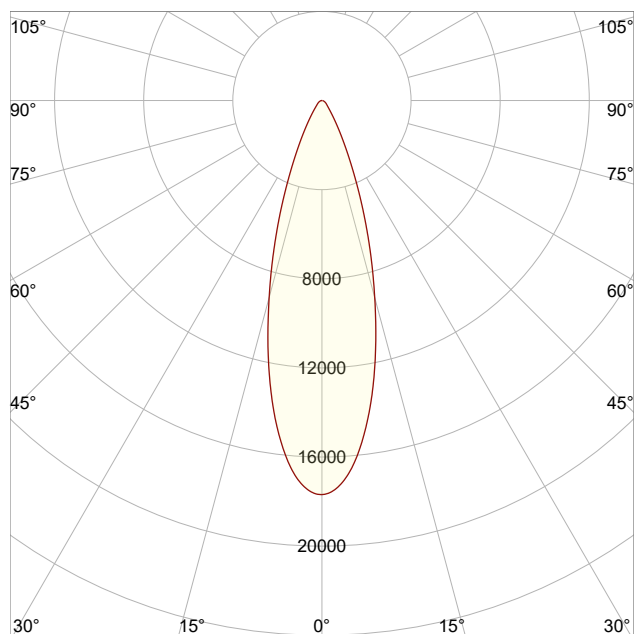
LM-79

Test Report

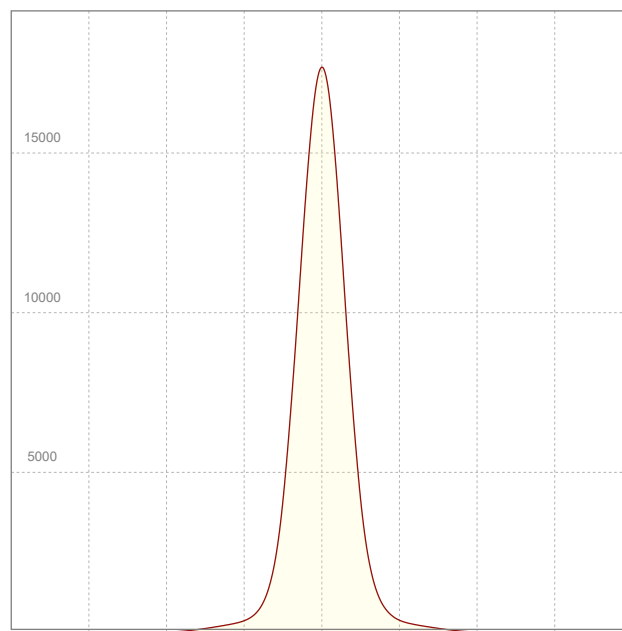
LM79-QUARTZ-2200K-CRI80-MEDIUM

General Discription

Item number	Q-BXX-2280-M
Date and time	5-1-2024 16:26:56
CCT (Kelvin)	2227 K
Beam angle	30,8°
Luminous flux	6635 lm
Efficiency	86 lm/watt
Weighted energy	77,0 kWh/1000h
Power factor	0,57
CRI (RA)	84,4
Fidelity index Rf	Rf 85,9
Gammut index Rg	Rg 99,0
Peak	17682 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-2200K-CRI80-MEDIUM

Beam details	1m	2m	3m	4m	5m
Lux*	17679 lx	4420 lx	1964 lx	1105 lx	707 lx

*measured at center of beam

Footcandles*	1642,4 fcd	410,6 fcd	182,5 fcd	102,7 fcd	65,7 fcd
Beam width (meter)	0,6 m	1,1 m	1,7 m	2,2 m	2,8 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
17679lx	4420lx	1964lx	1105lx	707lx	491lx	361lx	276lx	218lx	177lx	146lx	123lx	105lx	90lx	79lx	69lx	61lx	55lx	49lx	44lx
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
1642,4fcd	410,6fcd	182,5fcd	102,7fcd	65,7fcd	45,6fcd	33,5fcd	25,7fcd	20,3fcd	16,4fcd	13,6fcd	11,4fcd	9,7fcd	8,4fcd	7,3fcd	6,4fcd	5,7fcd	5,1fcd	4,5fcd	4,1fcd

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°
17,7K	17,4K	16,8K	15,8K	14,6K	13,1K	11,6K	9,9K	8,4K	6,9K	5,6K	4,4K	3,4K	2,6K	2,0K	1,5K	1,2K	0,9K	0,7K	0,6K
100%	99%	95%	90%	82%	74%	65%	56%	47%	39%	32%	25%	19%	15%	11%	9%	7%	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°
17,7K	17,4K	16,8K	15,8K	14,6K	13,1K	11,6K	9,9K	8,4K	6,9K	5,6K	4,4K	3,4K	2,6K	2,0K	1,5K	1,2K	0,9K	0,7K	0,6K
100%	99%	95%	90%	82%	74%	65%	56%	47%	39%	32%	25%	19%	15%	11%	9%	7%	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°
17,7K	17,5K	16,9K	15,9K	14,7K	13,2K	11,6K	9,9K	8,4K	6,9K	5,6K	4,4K	3,4K	2,6K	2,0K	1,6K	1,2K	1,0K	0,8K	0,7K
100%	99%	96%	90%	83%	75%	66%	56%	47%	39%	32%	25%	19%	15%	12%	9%	7%	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°
17,7K	17,5K	16,9K	15,9K	14,7K	13,2K	11,6K	9,9K	8,4K	6,9K	5,6K	4,4K	3,4K	2,6K	2,0K	1,6K	1,2K	1,0K	0,8K	0,7K
100%	99%	96%	90%	83%	75%	66%	56%	47%	39%	32%	25%	19%	15%	12%	9%	7%	6%	5%	4%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
30,8°	58°	84,1°	96,8%	91,9%



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

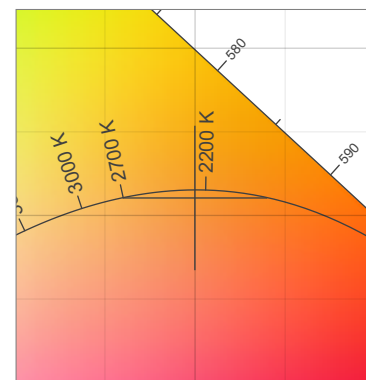
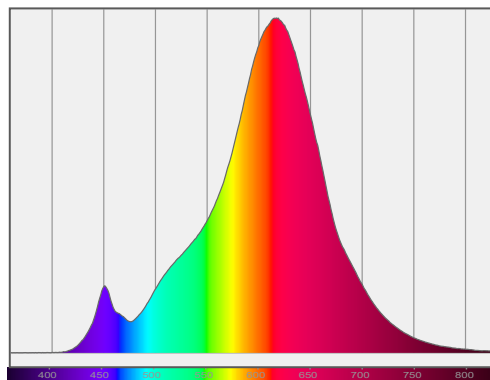
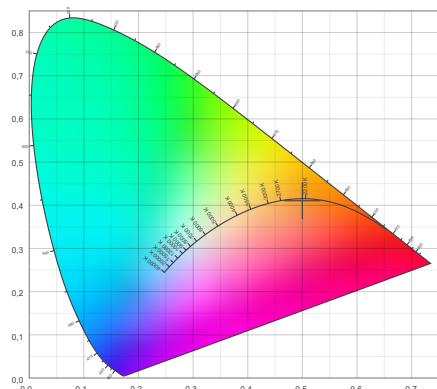
2021 CLS-LED BV. All rights reserved. Information subject to change without notice, CLS-LED BV and all affiliated companies disclaim liability for injury, damage direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information 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-2200K-CRI80-MEDIUM

Color details



CIE 1931

x: 0,500



Spectra

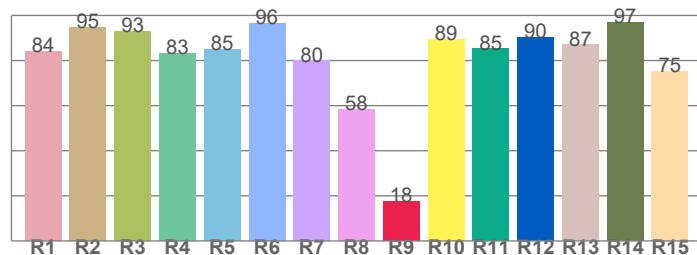
CIE 1931 ZOOM

2227 K

y: 0,410

Δuv : -0,0016

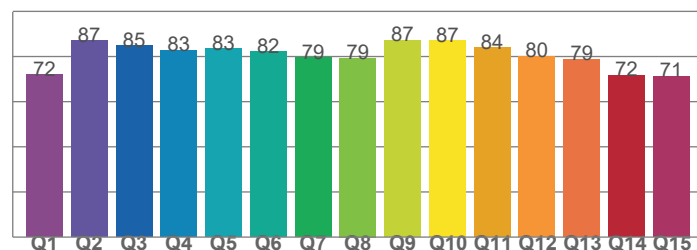
CRI: 84,4 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
84,2	94,9	92,9	83,1	85,1	96,4	79,9	58,4
R9	R10	R11	R12	R13	R14	R15	
17,6	89,4	85,2	90,2	87,0	97,1	75,3	

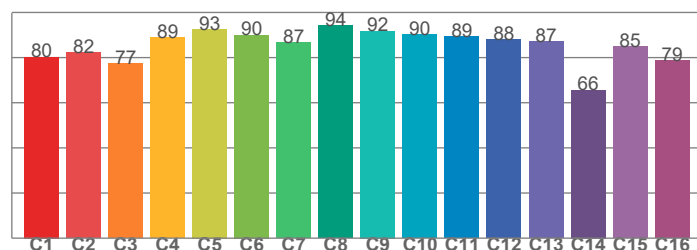
CQS: 79,6



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
71,9	87,0	84,7	82,7	83,4	82,1	79,4	79,4
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
87,0	87,0	83,9	80,1	78,7	71,8	71,2	

TM30: 85,9



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

C1	C2	C3	C4	C5	C6	C7	C8
80,3	82,4	77,4	88,9	92,6	90,0	86,6	94,2
C9	C10	C11	C12	C13	C14	C15	
91,9	90,3	89,4	88,1	87,2	65,6	85,0	

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
2227 K	84,4	17,6	85,9	99,0	79,6	0,500	0,410	0,289	0,356	-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-2200K-CRI80-MEDIUM

TM30 details

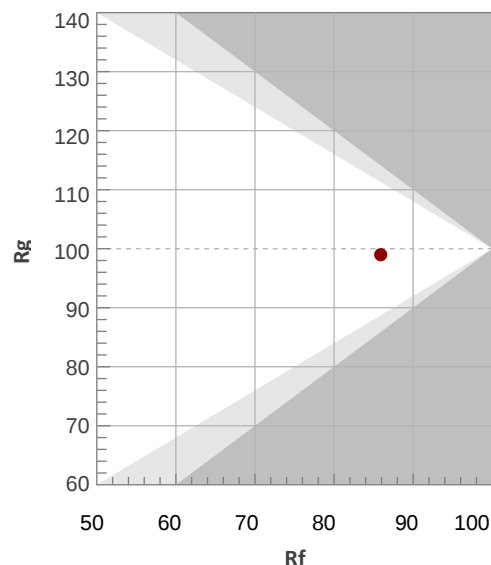
Rf 85,9

Fidelity index Rf

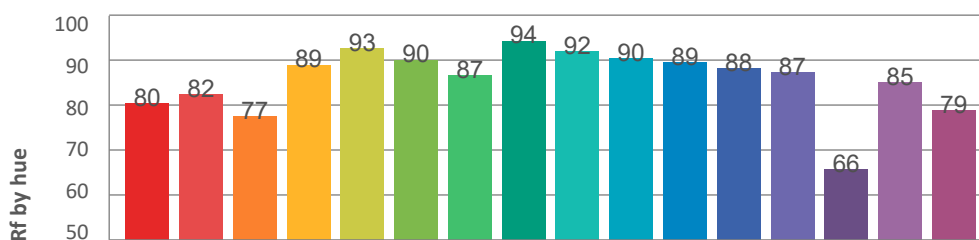
Rg 99,0

Gamut index Rg

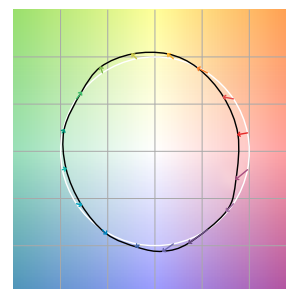
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	80	-10%	0%
2	82	-8%	7%
3	77	-1%	12%
4	89	4%	7%
5	93	6%	4%
6	90	6%	-2%
7	87	0%	-9%
8	94	-1%	-4%
9	92	-4%	-1%
10	90	-4%	4%
11	89	1%	6%
12	88	3%	2%
13	87	6%	-12%
14	66	1%	-24%
15	85	-2%	-11%
16	79	-10%	-12%



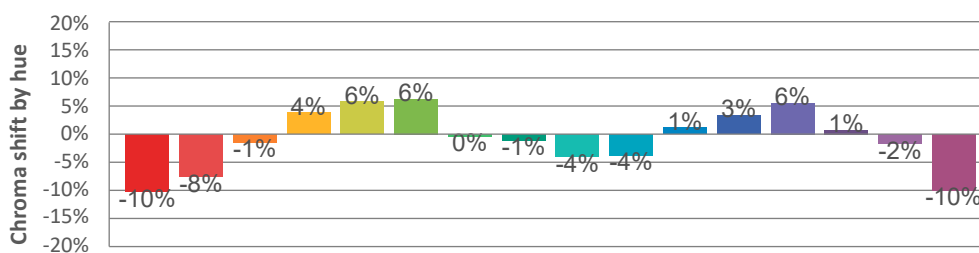
Hue binH



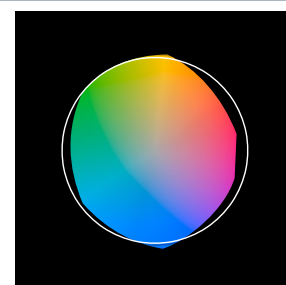
Color vector graphics



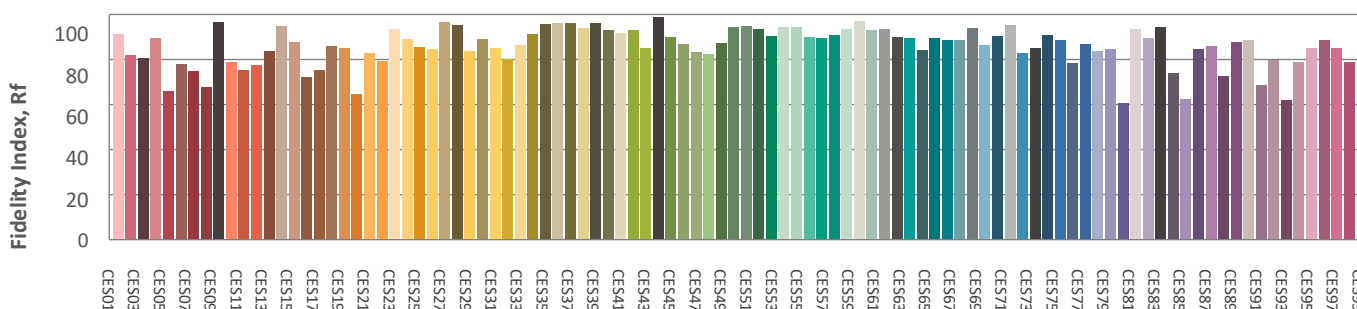
Hue bin



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

LM79-QUARTZ-2200K-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 6635lm 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