

LM-79

Test Report

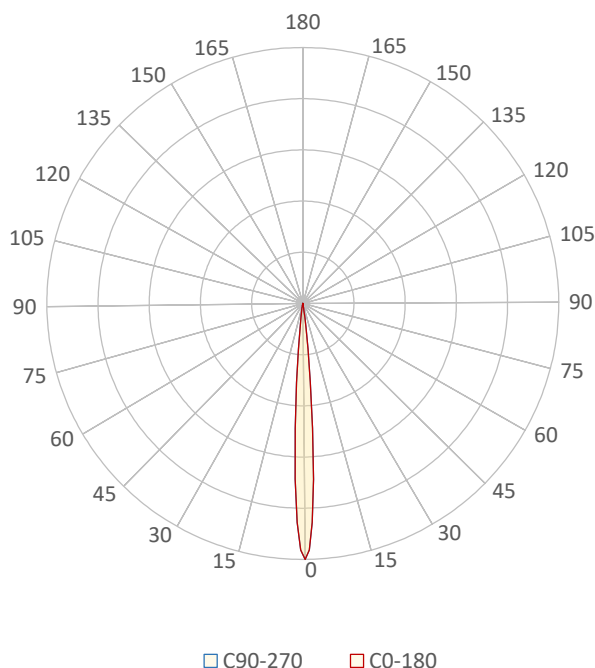
LM79-TOPAZ-ZOOM-3500K-CRI90 [SPOT]

General Discription

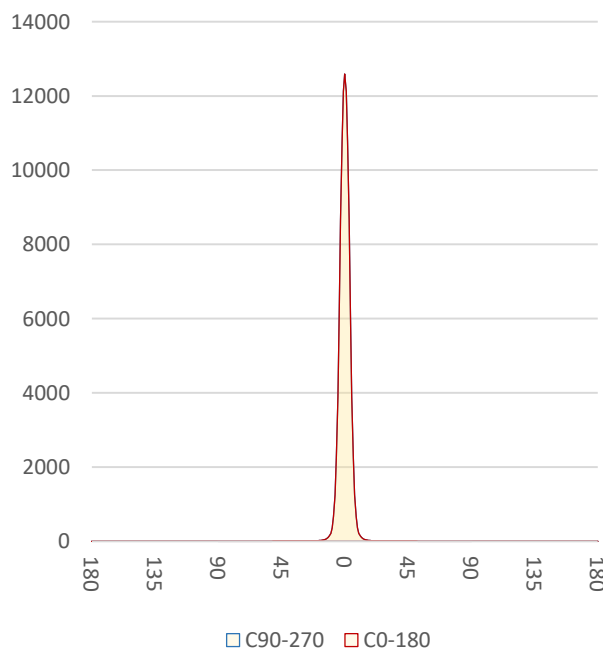
Item number	T-Z-XLX-1B-3590-Z
Date and time	16-2-2024 11:48:34
CCT (Kelvin)	3460 K
Beam angle	7,9°
Luminous flux	291 lm
Efficiency	27 lm/watt
Weighted energy	10,7 kWh/1000h
Power factor	0,99
CRI (RA)	94,2
Fidelity index Rf	Rf 91,8
Gammut index Rg	Rg 100,9
Peak	12592 cd



Polar diagram



Cartesian diagram



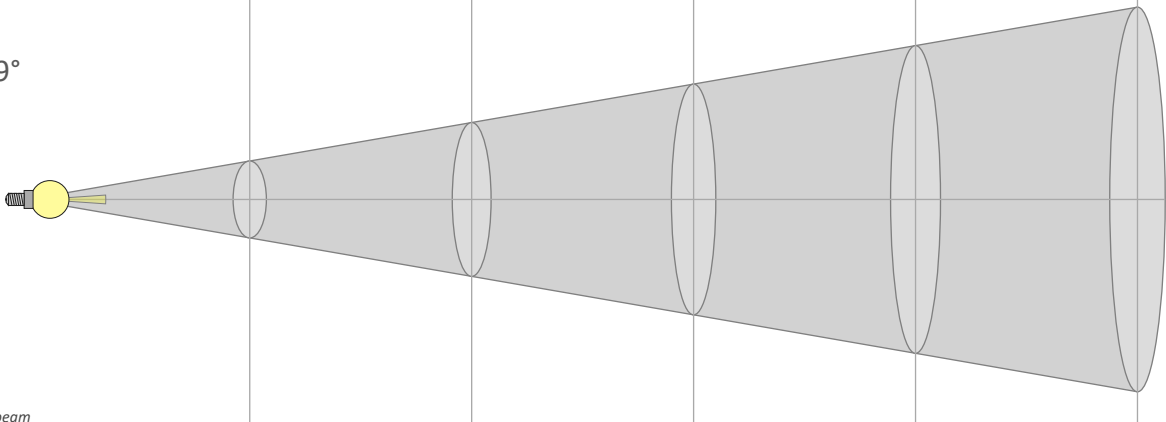
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Beam details					1m		2m		3m		4m		5m						
Lux*					12592 lx		3148 lx		1399 lx		787 lx		504 lx						
7,9° 																			
*measured at center of beam																			
Footcandles*					1169,9 fcd		292,5 fcd		130,0 fcd		73,1 fcd		46,8 fcd						
Beam width (meter)					0,1 m		0,3 m		0,4 m		0,6 m		0,7 m						
Beam width (Feet)					0,5 ft		0,9 ft		1,4 ft		1,8 ft		2,3 ft						
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
12592lx	3148lx	1399lx	787lx	504lx	350lx	257lx	197lx	155lx	126lx	104lx	87lx	75lx	64lx	56lx	49lx	44lx	39lx	35lx	31lx
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
1169,9fcd	292,5fcd	130fcd	73,1fcd	46,8fcd	32,5fcd	23,9fcd	18,3fcd	14,4fcd	11,7fcd	9,7fcd	8,1fcd	6,9fcd	6fcd	5,2fcd	4,6fcd	4fcd	3,6fcd	3,2fcd	2,9fcd
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°
12,6K	12,1K	10,8K	8,7K	6,2K	3,9K	2,3K	1,2K	0,7K	0,4K	0,2K	0,1K	0,1K	0,1K	0,1K	0,0K	0,0K	0,0K	0,0K	0,0K
100%	96%	86%	69%	49%	31%	18%	10%	5%	3%	2%	1%	1%	1%	0%	0%	0%	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°
12,6K	12,1K	10,8K	8,7K	6,2K	3,9K	2,3K	1,2K	0,7K	0,4K	0,2K	0,1K	0,1K	0,1K	0,1K	0,0K	0,0K	0,0K	0,0K	0,0K
100%	96%	86%	69%	49%	31%	18%	10%	5%	3%	2%	1%	1%	1%	0%	0%	0%	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°
12,6K	12,1K	10,8K	8,7K	6,2K	3,9K	2,3K	1,2K	0,7K	0,4K	0,2K	0,1K	0,1K	0,1K	0,1K	0,0K	0,0K	0,0K	0,0K	0,0K
100%	96%	86%	69%	49%	31%	18%	10%	5%	3%	2%	1%	1%	1%	0%	0%	0%	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°
12,6K	12,1K	10,8K	8,7K	6,2K	3,9K	2,3K	1,2K	0,7K	0,4K	0,2K	0,1K	0,1K	0,1K	0,1K	0,0K	0,0K	0,0K	0,0K	0,0K
100%	96%	86%	69%	49%	31%	18%	10%	5%	3%	2%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Beam angle 50%				Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone			
7,9°				14°				18,5°				98,7%				97,7%			



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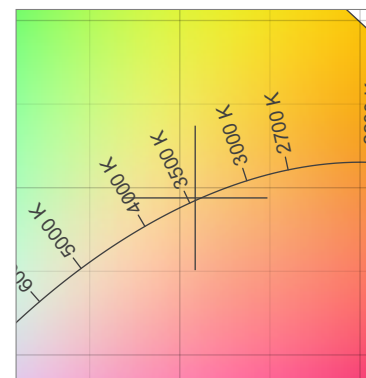
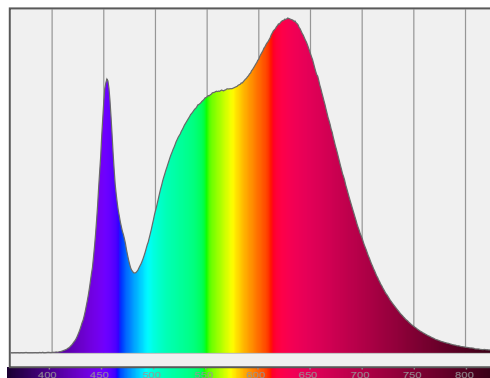
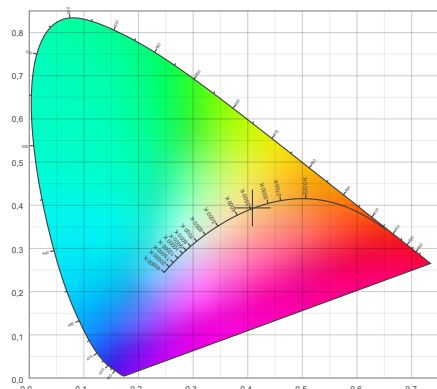
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Color details



CIE 1931

x: 0,409

3460 K

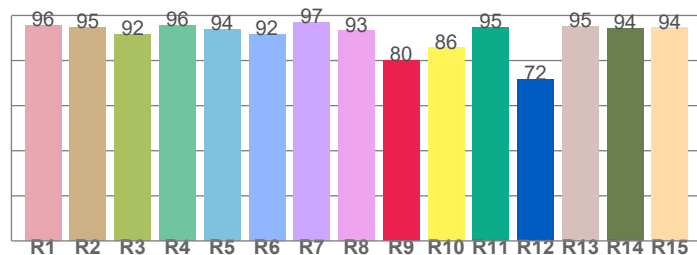
y: 0,394

Spectra

CIE 1931 ZOOM

Δuv : 0,0007

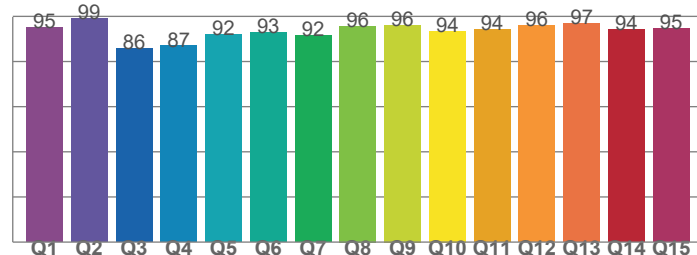
CRI: 94,2 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
95,7	94,8	91,5	95,5	93,9	91,7	97,0	93,2
R9	R10	R11	R12	R13	R14	R15	
80,3	85,6	94,6	71,8	95,3	94,4	94,5	

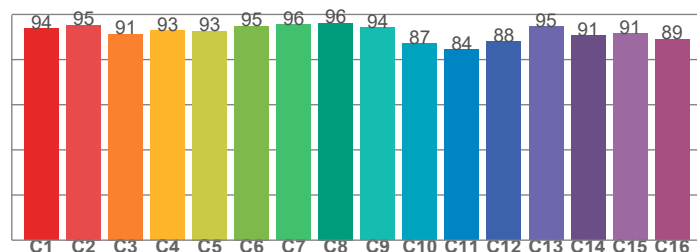
CQS: 92,8



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
95,2	98,9	85,6	86,9	92,0	92,8	91,6	95,7
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,2	93,5	94,3	95,9	97,0	94,3	94,6	

TM30: 91,8



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

C1	C2	C3	C4	C5	C6	C7	C8
93,9	95,3	91,3	92,9	92,6	94,9	95,6	96,3
C9	C10	C11	C12	C13	C14	C15	
94,1	87,2	84,3	87,9	94,5	90,6	91,5	

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
3460 K	94,2	80,3	91,8	100,9	92,8	0,409	0,394	0,237	0,342	0,0007



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TM30 details

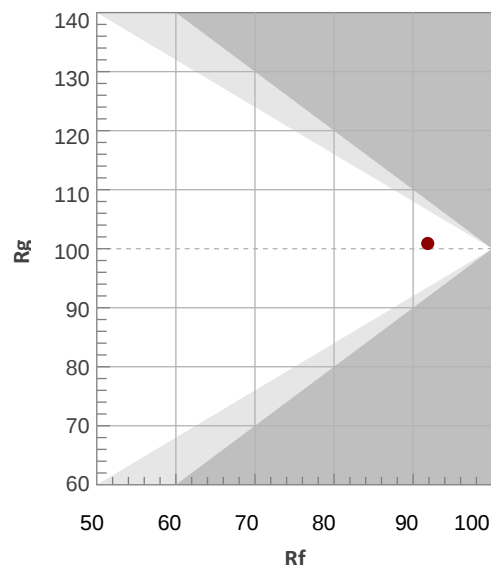
Rf 91,8

Fidelity index Rf

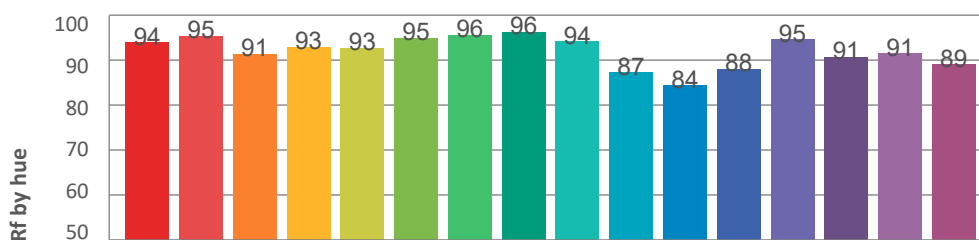
Rg 100,9

Gamut index Rg

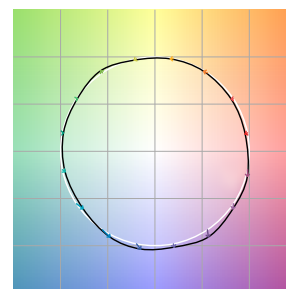
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	94	-3%	-1%
2	95	-2%	1%
3	91	-1%	4%
4	93	-1%	3%
5	93	-1%	3%
6	95	3%	0%
7	96	-1%	-1%
8	96	-1%	0%
9	94	-2%	3%
10	87	-3%	8%
11	84	2%	11%
12	88	4%	5%
13	95	4%	0%
14	91	7%	-3%
15	91	3%	-5%
16	89	1%	-7%



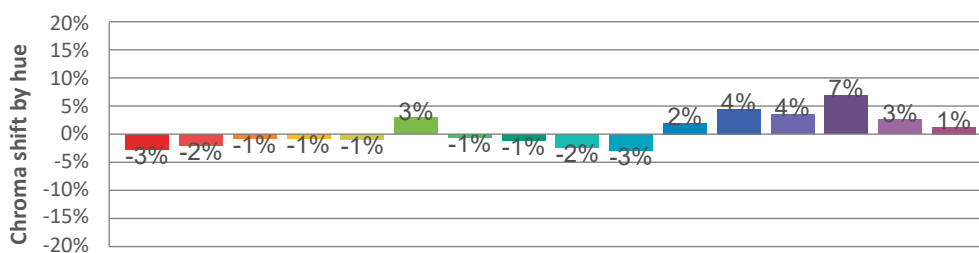
Hue binH



Color vector graphics



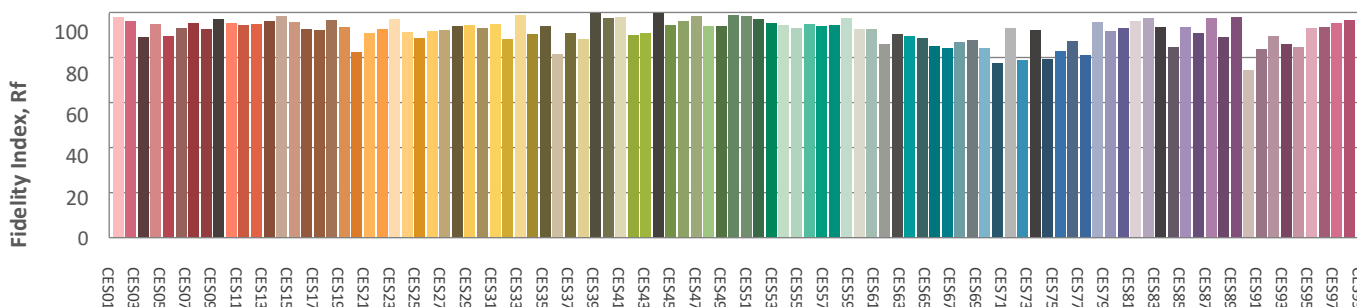
Hue bin



Color distortion graphics



Color Evaluation Sample



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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	-1,3	-1,1	-1,3	-0,9	-0,7	-1,3	-1,1	-1,3	-0,9	-0,7
	3H	-0,5	-0,1	-0,2	0,1	0,2	-0,5	-0,1	-0,2	0,1	0,2
	4H	-0,1	0,4	0,3	0,6	0,8	-0,1	0,4	0,3	0,6	0,8
	6H	0,7	1,0	0,9	1,3	1,6	0,7	1,0	0,9	1,3	1,6
	8H	1,0	1,3	1,3	1,6	2,0	1,0	1,3	1,3	1,6	2,0
	12H	1,3	1,6	1,7	2,0	2,4	1,3	1,6	1,7	2,0	2,4
4H	2H	-1,2	-0,7	-0,8	-0,5	-0,3	-1,2	-0,7	-0,8	-0,5	-0,3
	3H	0,1	0,4	0,4	0,8	1,2	0,1	0,4	0,4	0,8	1,2
	4H	0,7	1,0	1,1	1,4	1,9	0,7	1,0	1,1	1,4	1,9
	6H	1,5	1,9	2,0	2,2	2,6	1,5	1,9	2,0	2,2	2,6
	8H	1,9	2,3	2,4	2,6	3,0	1,9	2,3	2,4	2,6	3,0
	12H	2,4	2,7	2,9	3,1	3,5	2,4	2,7	2,9	3,1	3,5
8H	4H	0,9	1,3	1,5	1,6	2,0	0,9	1,3	1,5	1,6	2,0
	6H	2,0	2,3	2,5	2,7	3,2	2,0	2,3	2,5	2,7	3,2
	8H	2,7	2,8	3,2	3,3	3,9	2,7	2,8	3,2	3,3	3,9
	12H	3,3	3,5	3,9	4,0	4,6	3,3	3,5	3,9	4,0	4,6
12H	4H	1,0	1,2	1,5	1,6	2,1	1,0	1,2	1,5	1,6	2,1
	6H	2,2	2,4	2,7	2,9	3,5	2,2	2,4	2,7	2,9	3,5
	8H	2,8	3,0	3,4	3,5	4,1	2,8	3,0	3,4	3,5	4,1
Variation of the observer position for the luminaire distance S											
S = 1.0H		0,2 / -0,2					0,2 / -0,2				
S = 1.5H		0,4 / -0,3					0,4 / -0,3				
S = 2.0H		1,0 / -0,5					1,0 / -0,5				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 291lm total luminous flux											



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