

LM-79

Test Report

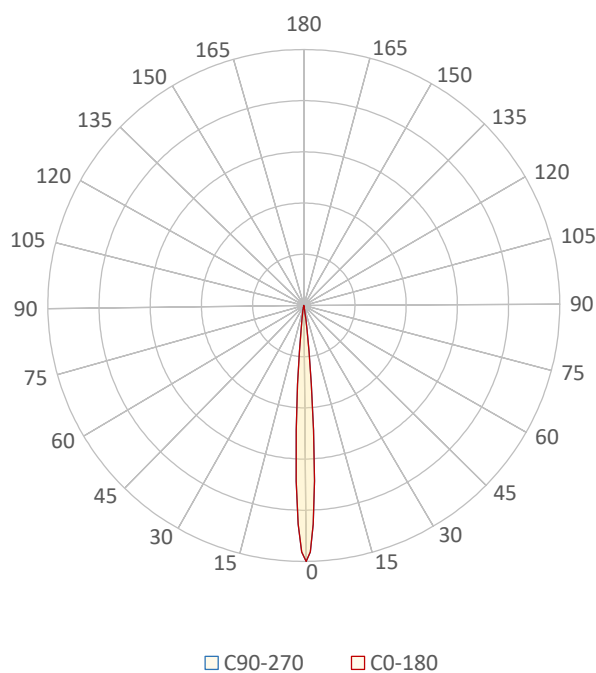
LM79-TOPAZ-ZOOM-2700K-CRI90 [SPOT]

General Discription

Item number	T-Z-XLX-1B-2790-Z
Date and time	16-2-2024 10:52:52
CCT (Kelvin)	2760 K
Beam angle	7,9°
Luminous flux	270 lm
Efficiency	25 lm/watt
Weighted energy	10,7 kWh/1000h
Power factor	0,99
CRI (RA)	93,3
Fidelity index Rf	Rf 91,4
Gammut index Rg	Rg 102,8
Peak	11653 cd



Polar diagram



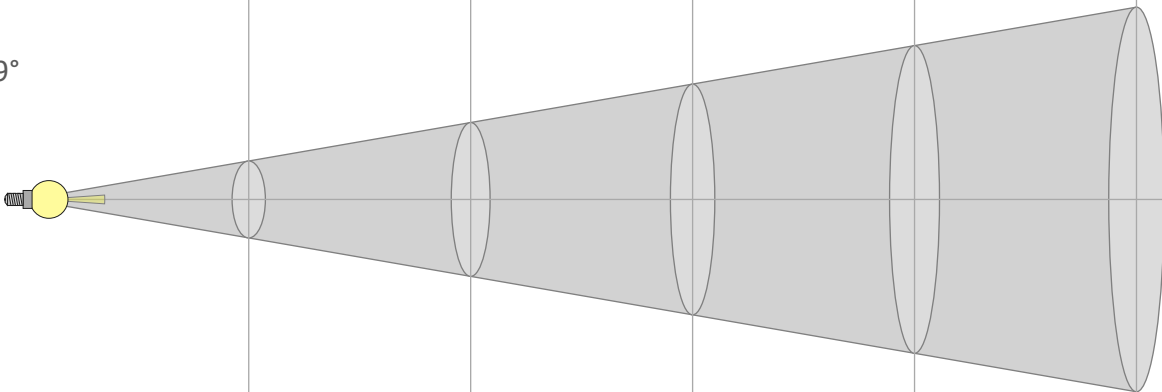
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Beam details					1m		2m		3m		4m		5m						
Lux*					11653 lx		2913 lx		1295 lx		728 lx		466 lx						
7,9° 																			
*measured at center of beam																			
Footcandles*					1082,6 fcd		270,7 fcd		120,3 fcd		67,7 fcd		43,3 fcd						
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
11653lx	2913lx	1295lx	728lx	466lx	324lx	238lx	182lx	144lx	117lx	96lx	81lx	69lx	59lx	52lx	46lx	40lx	36lx	32lx	29lx
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
1082,6fcd	270,7fcd	120,3fcd	67,7fcd	43,3fcd	30,1fcd	22,1fcd	16,9fcd	13,4fcd	10,8fcd	8,9fcd	7,5fcd	6,4fcd	5,5fcd	4,8fcd	4,2fcd	3,7fcd	3,3fcd	3fcd	2,7fcd
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°
11,7K	11,2K	10,0K	8,0K	5,7K	3,6K	2,1K	1,2K	0,6K	0,3K	0,2K	0,1K	0,1K	0,1K	0,0K	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°
11,7K	11,2K	10,0K	8,0K	5,7K	3,6K	2,1K	1,2K	0,6K	0,3K	0,2K	0,1K	0,1K	0,1K	0,0K	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°
11,7K	11,2K	10,0K	8,0K	5,7K	3,6K	2,1K	1,2K	0,6K	0,3K	0,2K	0,1K	0,1K	0,1K	0,0K	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°
11,7K	11,2K	10,0K	8,0K	5,7K	3,6K	2,1K	1,2K	0,6K	0,3K	0,2K	0,1K	0,1K	0,1K	0,0K	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°				98,6%				97,5%			



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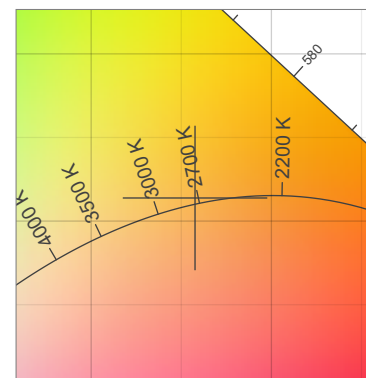
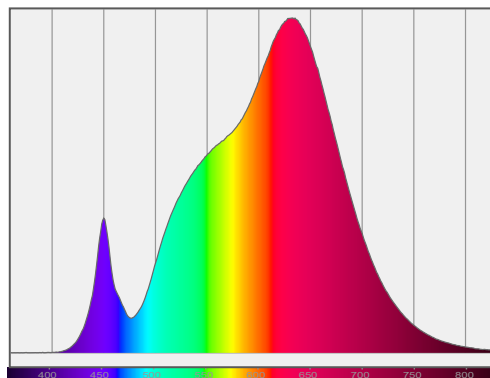
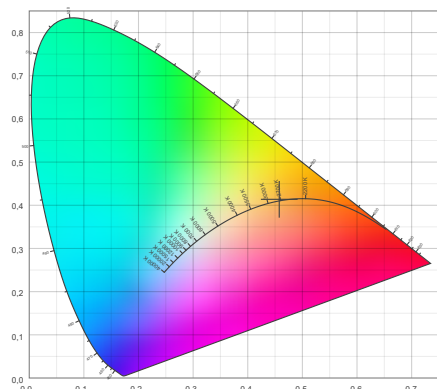
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Color details



CIE 1931

x: 0,458



Spectra

CIE 1931 ZOOM

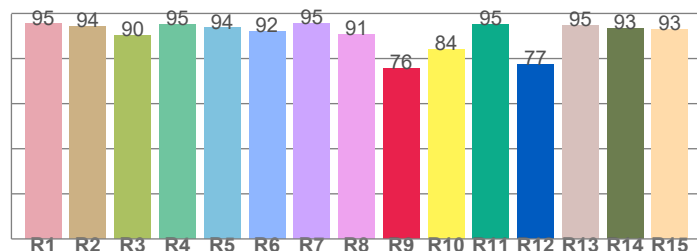
2760 K

y: 0,414

Δuv : 0,0014

CRI: 93,3 (R1-R8)

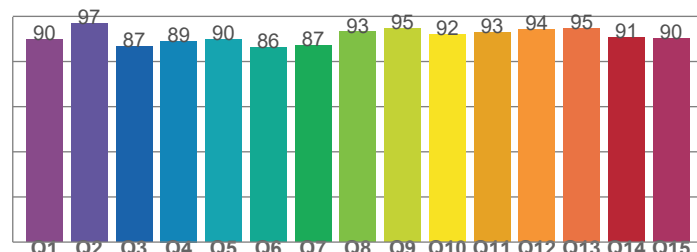
CRI values, R1-R8 are used to calculate final CRI value



R1	R2	R3	R4	R5	R6	R7	R8
95,4	94,1	90,3	95,0	93,6	91,9	95,5	90,9
R9	R10	R11	R12	R13	R14	R15	
75,7	84,2	95,2	77,3	94,8	93,4	92,8	

CQS: 90,5

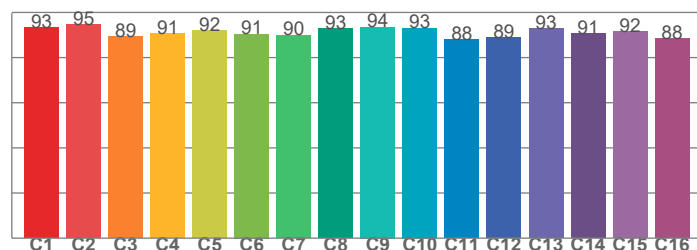
CQS values



Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
89,7	96,8	86,7	89,1	89,7	86,3	87,0	93,1
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
94,7	91,9	92,9	94,1	94,9	90,7	90,1	

TM30: 91,4

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



C1	C2	C3	C4	C5	C6	C7	C8
93,2	94,7	89,4	90,7	91,9	90,5	89,9	92,9
C9	C10	C11	C12	C13	C14	C15	
93,6	93,1	87,9	88,8	93,0	90,6	91,6	

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
2760 K	93,3	75,7	91,4	102,8	90,5	0,458	0,414	0,260	0,352	0,0014



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TM30 details

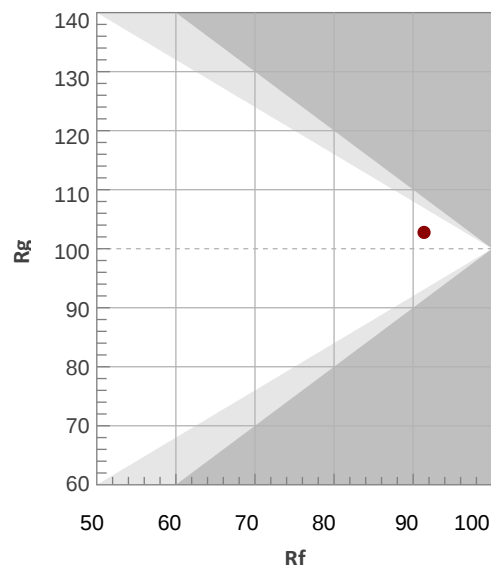
Rf 91,4

Fidelity index Rf

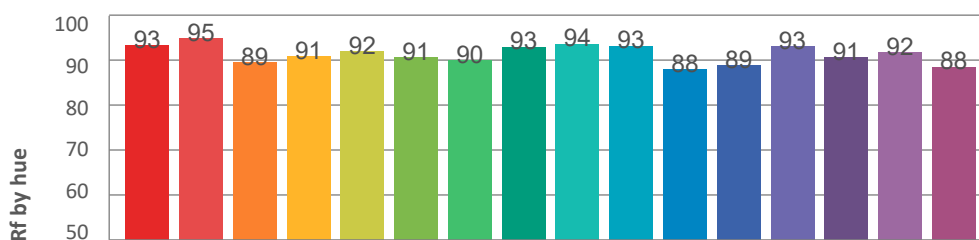
Rg 102,8

Gamut index Rg

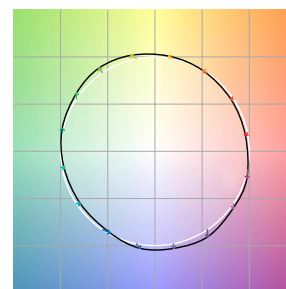
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	93	-3%	-2%
2	95	-2%	2%
3	89	-1%	5%
4	91	2%	5%
5	92	5%	5%
6	91	6%	0%
7	90	3%	-6%
8	93	1%	-5%
9	94	-2%	-3%
10	93	-4%	2%
11	88	-2%	8%
12	89	4%	5%
13	93	5%	0%
14	91	6%	-4%
15	92	2%	-4%
16	88	1%	-9%



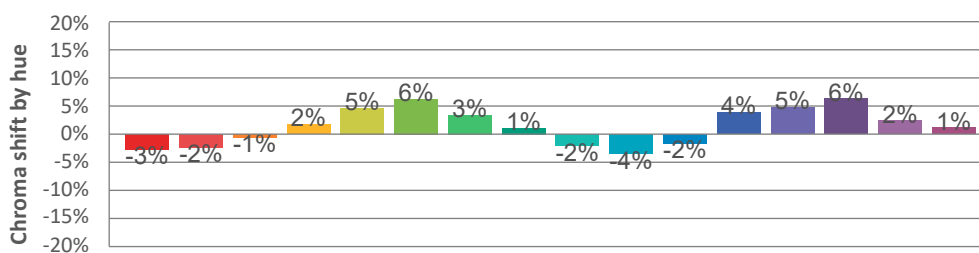
Hue binH



Color vector graphics



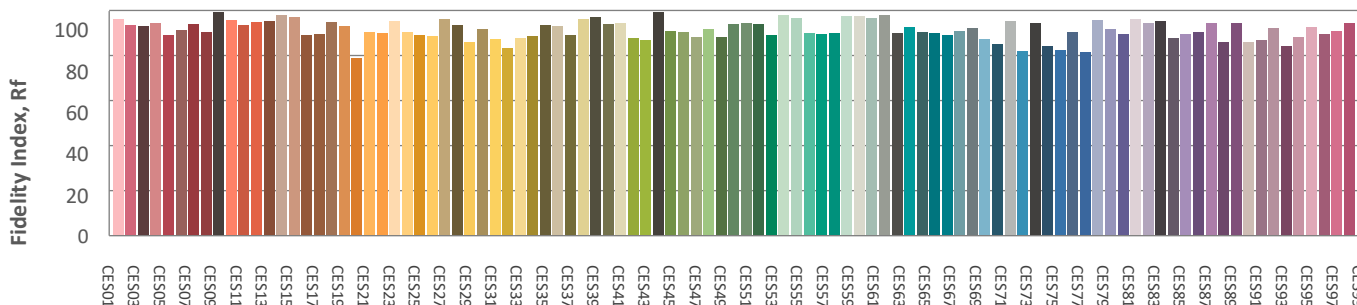
Hue bin



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	-1,4	-1,2	-1,4	-1,0	-0,8	-1,4	-1,2	-1,4	-1,0	-0,8
	3H	-0,5	0,0	-0,1	0,1	0,3	-0,5	0,0	-0,1	0,1	0,3
	4H	0,2	0,6	0,6	0,8	1,1	0,2	0,6	0,6	0,8	1,1
	6H	0,9	1,3	1,2	1,6	1,9	0,9	1,3	1,2	1,6	1,9
	8H	1,2	1,6	1,5	1,9	2,3	1,2	1,6	1,5	1,9	2,3
	12H	1,6	1,9	1,9	2,3	2,7	1,6	1,9	1,9	2,3	2,7
4H	2H	-1,2	-0,7	-0,8	-0,5	-0,3	-1,2	-0,7	-0,8	-0,5	-0,3
	3H	0,3	0,6	0,6	1,0	1,4	0,3	0,6	0,6	1,0	1,4
	4H	1,0	1,3	1,4	1,7	2,2	1,0	1,3	1,4	1,7	2,2
	6H	1,9	2,3	2,4	2,6	2,9	1,9	2,3	2,4	2,6	2,9
	8H	2,3	2,6	2,8	3,0	3,3	2,3	2,6	2,8	3,0	3,3
	12H	2,8	3,0	3,3	3,4	3,9	2,8	3,0	3,3	3,4	3,9
8H	4H	1,3	1,7	1,8	2,0	2,3	1,3	1,7	1,8	2,0	2,3
	6H	2,4	2,6	2,9	3,1	3,6	2,4	2,6	2,9	3,1	3,6
	8H	3,0	3,2	3,5	3,7	4,3	3,0	3,2	3,5	3,7	4,3
	12H	3,7	3,8	4,3	4,3	4,9	3,7	3,8	4,3	4,3	4,9
12H	4H	1,3	1,6	1,8	2,0	2,4	1,3	1,6	1,8	2,0	2,4
	6H	2,6	2,7	3,1	3,3	3,9	2,6	2,7	3,1	3,3	3,9
	8H	3,2	3,4	3,8	3,9	4,5	3,2	3,4	3,8	3,9	4,5
Variation of the observer position for the luminaire distance S											
S = 1.0H		0,1 / -0,1					0,1 / -0,1				
S = 1.5H		0,4 / -0,3					0,4 / -0,3				
S = 2.0H		0,8 / -0,7					0,8 / -0,7				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 270lm total luminous flux											