

LM-79

Test Report

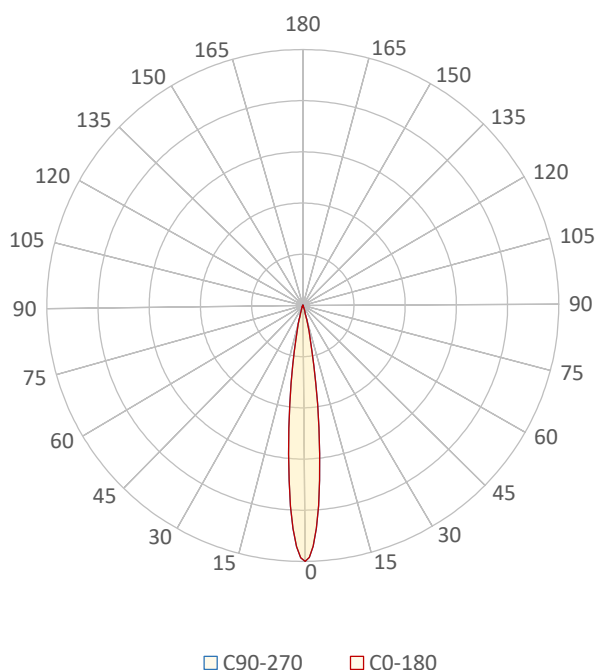
LM79-TOPAZ-EXPO-2700K-CRI90-SPOT

General Discription

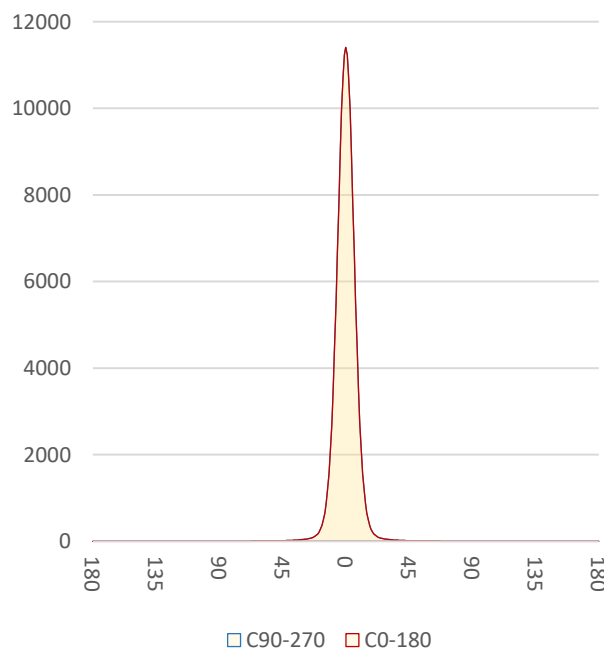
Item number	T-E-XLX-1B-2790-S
Date and time	16-2-2024 10:35:23
CCT (Kelvin)	2731 K
Beam angle	13,6°
Luminous flux	871 lm
Efficiency	81 lm/watt
Weighted energy	10,7 kWh/1000h
Power factor	0,96
CRI (RA)	93,5
Fidelity index Rf	Rf 91,1
Gammut index Rg	Rg 103,2
Peak	11407 cd



Polar diagram



Cartesian diagram



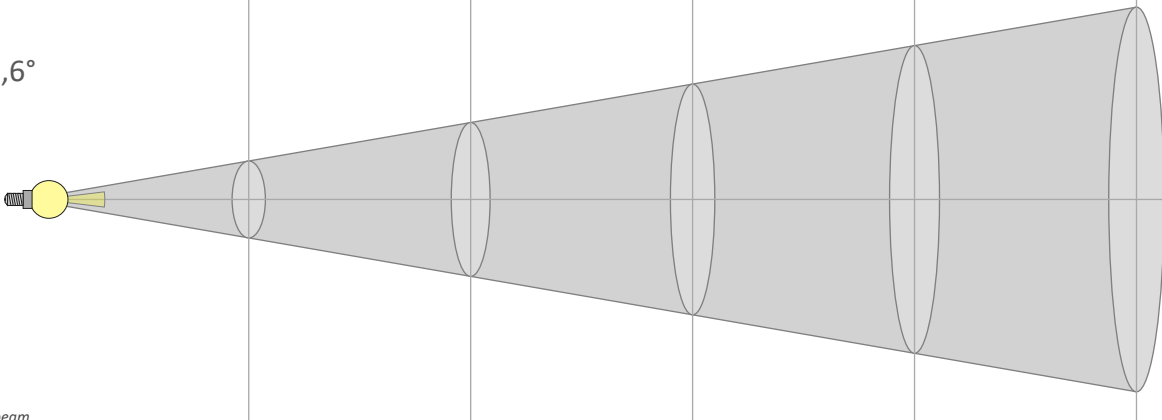
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Beam details		1m		2m		3m		4m		5m									
Lux*		11407 lx		2852 lx		1267 lx		713 lx		456 lx									
13,6° 																			
*measured at center of beam																			
Footcandles*		1059,8 fcd		264,9 fcd		117,8 fcd		66,2 fcd		42,4 fcd									
Beam width (meter)		0,2 m		0,5 m		0,7 m		1 m		1,2 m									
Beam width (Feet)		0,8 ft		1,6 ft		2,4 ft		3,1 ft		3,9 ft									
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
11407lx	2852lx	1267lx	713lx	456lx	317lx	233lx	178lx	141lx	114lx	94lx	79lx	67lx	58lx	51lx	45lx	39lx	35lx	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
1059,8fcd	264,9fcd	117,8fcd	66,2fcd	42,4fcd	29,4fcd	21,6fcd	16,6fcd	13,1fcd	10,6fcd	8,8fcd	7,4fcd	6,3fcd	5,4fcd	4,7fcd	4,1fcd	3,7fcd	3,3fcd	2,9fcd	2,6fcd
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°
11,4K	11,2K	10,7K	10,0K	9,0K	7,8K	6,7K	5,5K	4,4K	3,5K	2,7K	2,1K	1,6K	1,2K	0,9K	0,6K	0,5K	0,4K	0,3K	0,2K
100%	99%	94%	87%	79%	69%	58%	48%	39%	31%	24%	18%	14%	10%	8%	6%	4%	3%	2%	2%
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°
11,4K	11,2K	10,7K	10,0K	9,0K	7,8K	6,7K	5,5K	4,4K	3,5K	2,7K	2,1K	1,6K	1,2K	0,9K	0,6K	0,5K	0,4K	0,3K	0,2K
100%	99%	94%	87%	79%	69%	58%	48%	39%	31%	24%	18%	14%	10%	8%	6%	4%	3%	2%	2%
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°
11,4K	11,2K	10,7K	10,0K	9,0K	7,8K	6,7K	5,5K	4,4K	3,5K	2,7K	2,1K	1,6K	1,2K	0,9K	0,6K	0,5K	0,4K	0,3K	0,2K
100%	99%	94%	87%	79%	69%	58%	48%	39%	31%	24%	18%	14%	10%	8%	6%	4%	3%	2%	2%
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°
11,4K	11,2K	10,7K	10,0K	9,0K	7,8K	6,7K	5,5K	4,4K	3,5K	2,7K	2,1K	1,6K	1,2K	0,9K	0,6K	0,5K	0,4K	0,3K	0,2K
100%	99%	94%	87%	79%	69%	58%	48%	39%	31%	24%	18%	14%	10%	8%	6%	4%	3%	2%	2%
Beam angle 50%				Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone			
13,6°				26,1°				35,9°				98,9%				97,8%			



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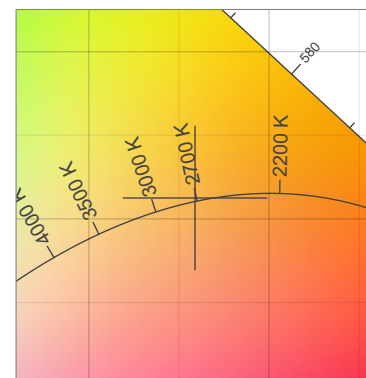
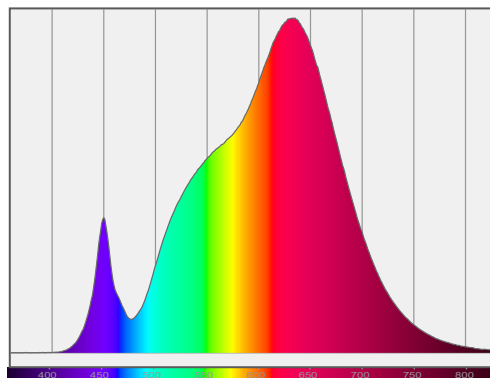
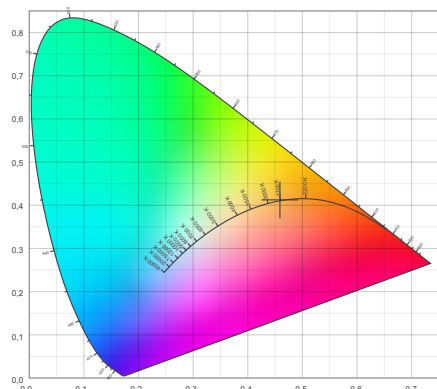
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Color details



CIE 1931

x: 0,459



Spectra

CIE 1931 ZOOM

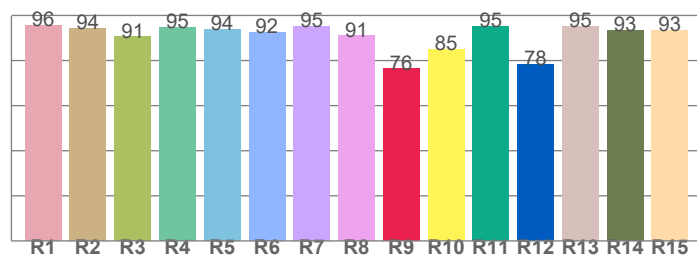
2731 K

y: 0,413

Δuv : 0,0008

CRI: 93,5 (R1-R8)

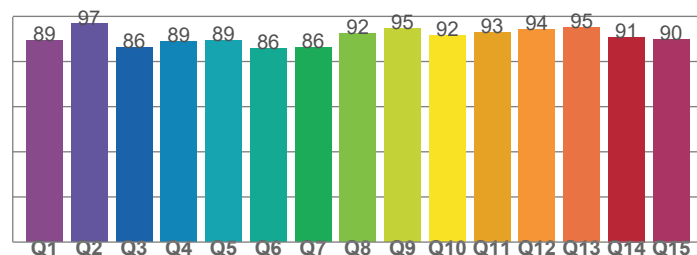
CRI values, R1-R8 are used to calculate final CRI value



R1	R2	R3	R4	R5	R6	R7	R8
95,6	94,4	90,5	94,8	93,9	92,3	95,2	90,9
R9	R10	R11	R12	R13	R14	R15	
76,3	84,8	95,0	78,3	95,1	93,4	93,2	

CQS: 90,2

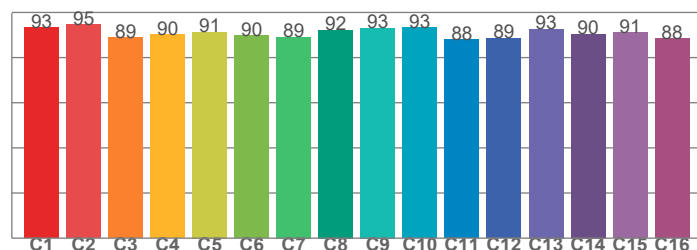
CQS values



Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
89,2	96,7	86,4	89,0	89,4	85,6	86,1	92,4
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
94,7	91,5	93,0	94,3	95,1	90,9	90,0	

TM30: 91,1

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



C1	C2	C3	C4	C5	C6	C7	C8
93,2	94,6	88,9	90,2	91,3	89,8	89,1	92,2
C9	C10	C11	C12	C13	C14	C15	
93,1	93,2	87,9	88,6	92,7	90,4	91,2	

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
2731 K	93,5	76,3	91,1	103,2	90,2	0,459	0,413	0,261	0,352	0,0008



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TM30 details

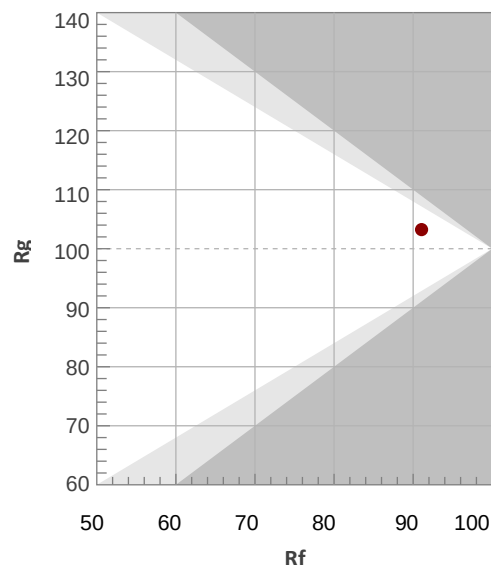
Rf 91,1

Fidelity index Rf

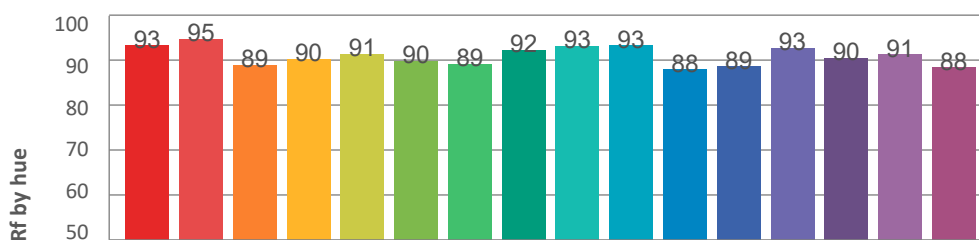
Rg 103,2

Gamut index Rg

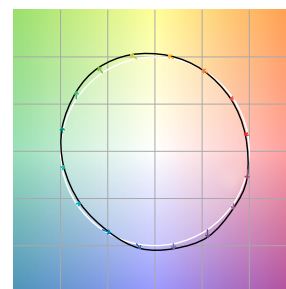
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	93	-3%	-2%
2	95	-2%	2%
3	89	0%	6%
4	90	2%	6%
5	91	5%	5%
6	90	7%	1%
7	89	4%	-6%
8	92	1%	-5%
9	93	-2%	-4%
10	93	-4%	2%
11	88	-2%	8%
12	89	4%	5%
13	93	5%	0%
14	90	7%	-4%
15	91	3%	-5%
16	88	1%	-9%



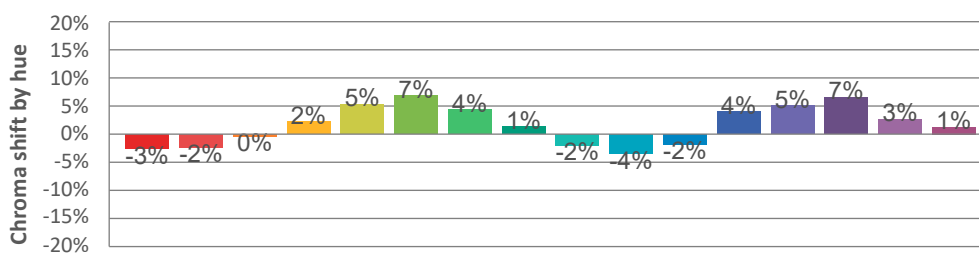
Hue binH



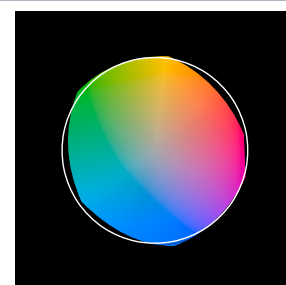
Color vector graphics



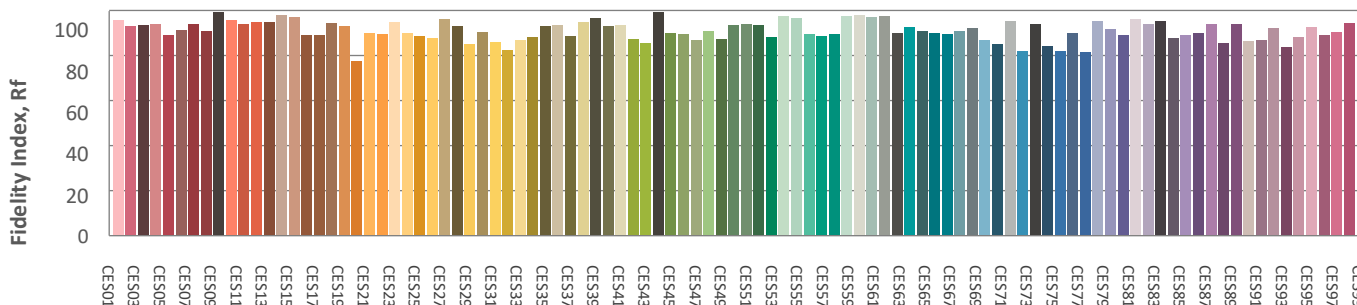
Hue bin



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	4,4	4,7	4,4	4,9	5,0	4,4	4,7	4,4	4,9	5,0
	3H	4,3	4,8	4,7	5,0	5,2	4,3	4,8	4,7	5,0	5,2
	4H	4,4	4,9	4,8	5,1	5,3	4,4	4,9	4,8	5,1	5,3
	6H	4,6	4,9	4,9	5,2	5,6	4,6	4,9	4,9	5,2	5,6
	8H	4,6	4,9	4,9	5,3	5,7	4,6	4,9	4,9	5,3	5,7
	12H	4,6	4,9	4,9	5,3	5,7	4,6	4,9	4,9	5,3	5,7
4H	2H	4,2	4,7	4,6	4,9	5,1	4,2	4,7	4,6	4,9	5,1
	3H	4,5	4,8	4,8	5,2	5,6	4,5	4,8	4,8	5,2	5,6
	4H	4,5	4,9	5,0	5,3	5,8	4,5	4,9	5,0	5,3	5,8
	6H	4,7	5,1	5,2	5,4	5,8	4,7	5,1	5,2	5,4	5,8
	8H	4,7	5,1	5,3	5,5	5,8	4,7	5,1	5,3	5,5	5,8
	12H	4,8	5,1	5,3	5,5	5,9	4,8	5,1	5,3	5,5	5,9
8H	4H	4,5	4,9	5,0	5,2	5,6	4,5	4,9	5,0	5,2	5,6
	6H	4,8	5,0	5,3	5,5	6,0	4,8	5,0	5,3	5,5	6,0
	8H	4,9	5,1	5,4	5,6	6,2	4,9	5,1	5,4	5,6	6,2
	12H	5,0	5,2	5,6	5,7	6,3	5,0	5,2	5,6	5,7	6,3
12H	4H	4,5	4,8	5,0	5,2	5,6	4,5	4,8	5,0	5,2	5,6
	6H	4,8	5,0	5,3	5,5	6,1	4,8	5,0	5,3	5,5	6,1
	8H	4,9	5,1	5,5	5,6	6,2	4,9	5,1	5,5	5,6	6,2
Variation of the observer position for the luminaire distance S											
S = 1.0H		1,8 / -1,7					1,8 / -1,7				
S = 1.5H		3,6 / -2,4					3,6 / -2,4				
S = 2.0H		5,2 / -3,4					5,2 / -3,4				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 871lm total luminous flux											