

LM-79

Test Report

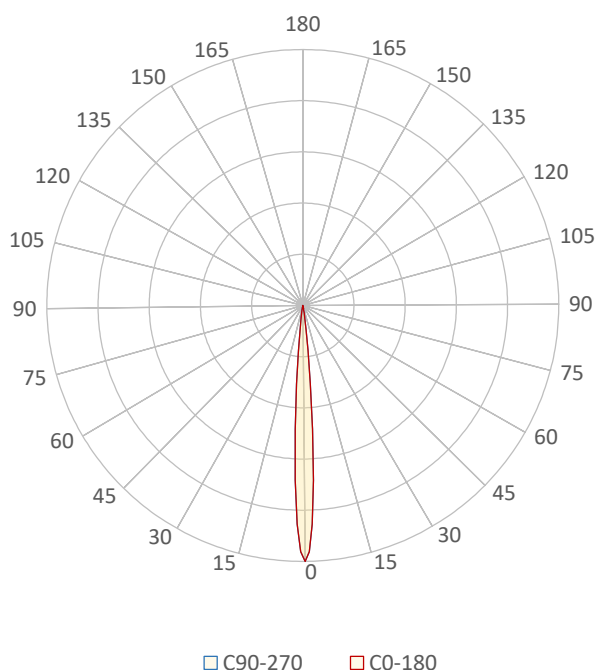
LM79-TOPAZ-ZOOM-3000K-CRI90 [SPOT]

General Discription

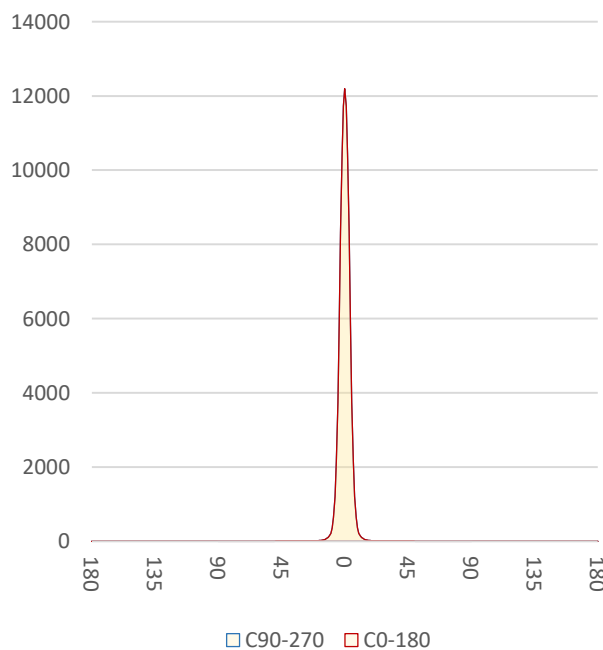
Item number	T-Z-XLX-1B-3090-Z
Date and time	16-2-2024 11:00:14
CCT (Kelvin)	3039 K
Beam angle	7,8°
Luminous flux	283 lm
Efficiency	26 lm/watt
Weighted energy	10,8 kWh/1000h
Power factor	0,99
CRI (RA)	93,3
Fidelity index Rf	Rf 91,4
Gammut index Rg	Rg 103,2
Peak	12196 cd



Polar diagram



Cartesian diagram



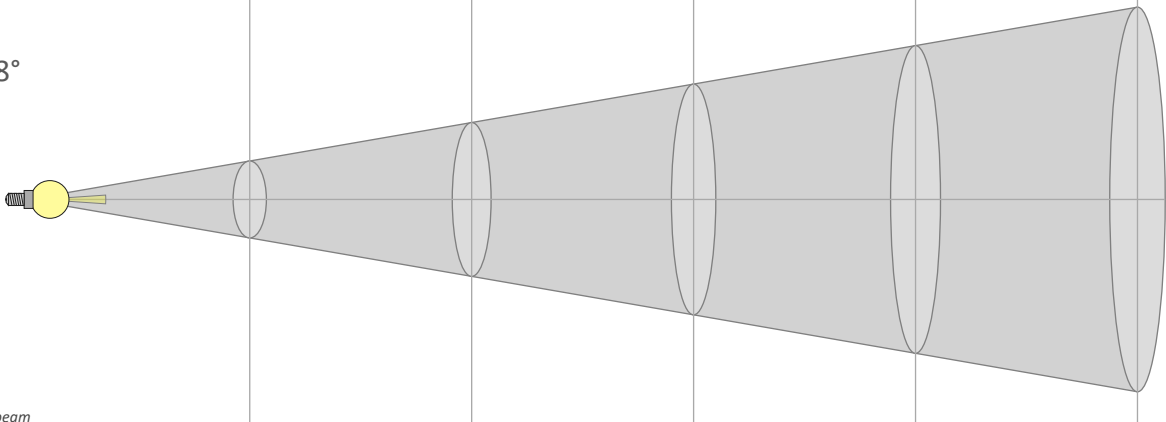
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Beam details		1m		2m		3m		4m		5m													
Lux*		12196 lx		3049 lx		1355 lx		762 lx		488 lx													
7,8° 																							
*measured at center of beam																							
Footcandles*		1133,0 fcd		283,3 fcd		125,9 fcd		70,8 fcd		45,3 fcd													
Beam width (meter)		0,1 m		0,3 m		0,4 m		0,5 m		0,7 m													
Beam width (Feet)		0,4 ft		0,9 ft		1,3 ft		1,8 ft		2,2 ft													
Beam intensities																							
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m				
12196lx	3049lx	1355lx	762lx	488lx	339lx	249lx	191lx	151lx	122lx	101lx	85lx	72lx	62lx	54lx	48lx	42lx	38lx	34lx	30lx				
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				
1133fcd	283,3fcd	125,9fcd	70,8fcd	45,3fcd	31,5fcd	23,1fcd	17,7fcd	14fcd	11,3fcd	9,4fcd	7,9fcd	6,7fcd	5,8fcd	5fcd	4,4fcd	3,9fcd	3,5fcd	3,1fcd	2,8fcd				
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°				
12,2K	11,8K	10,4K	8,3K	5,9K	3,7K	2,2K	1,2K	0,6K	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%	68%	48%	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°				
12,2K	11,8K	10,4K	8,3K	5,9K	3,7K	2,2K	1,2K	0,6K	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%	68%	48%	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°				
12,2K	11,8K	10,4K	8,3K	5,9K	3,7K	2,2K	1,2K	0,6K	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%	68%	48%	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°				
12,2K	11,8K	10,4K	8,3K	5,9K	3,7K	2,2K	1,2K	0,6K	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%	68%	48%	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							
7,8°				14°				18,6°				98,7%				97,6%							



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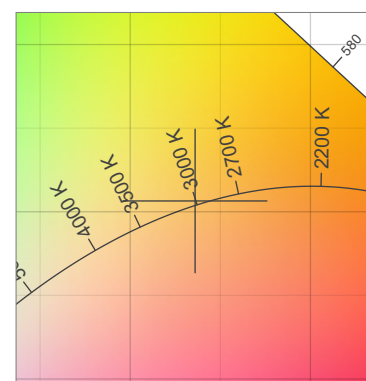
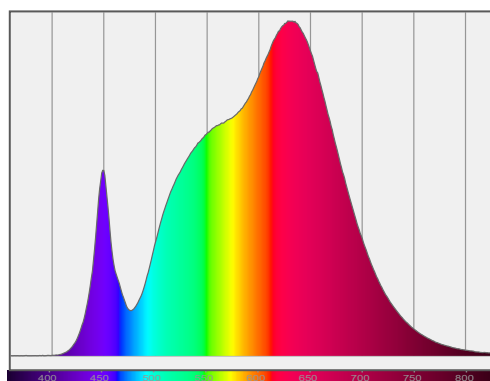
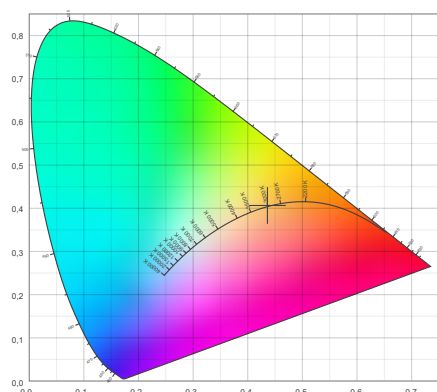
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Color details



CIE 1931

x: 0,436



Spectra

CIE 1931 ZOOM

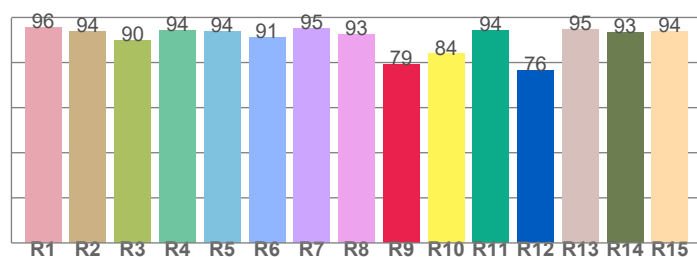
3039 K

y: 0,406

 Δuv : 0,0011

CRI: 93,3 (R1-R8)

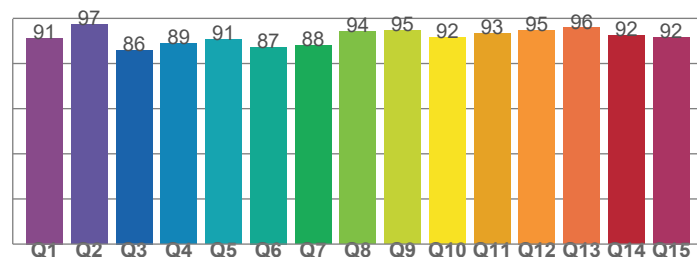
CRI values, R1-R8 are used to calculate final CRI value



R1	R2	R3	R4	R5	R6	R7	R8
95,7	93,9	89,8	94,4	93,9	91,2	95,0	92,5
R9	R10	R11	R12	R13	R14	R15	
79,2	83,8	94,5	76,4	94,9	93,3	93,8	

CQS: 91,1

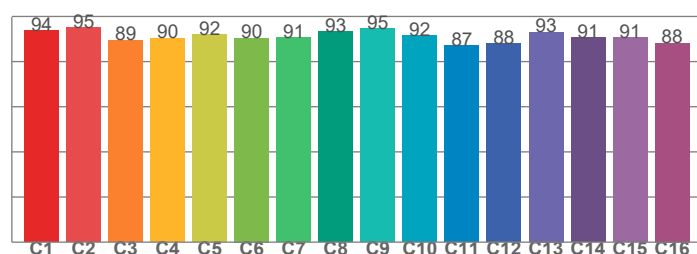
CQS values



Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
91,3	97,3	86,0	89,0	90,5	87,3	87,9	94,1
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
94,8	91,8	93,4	94,8	95,8	92,3	91,7	

TM30: 91,4

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



C1	C2	C3	C4	C5	C6	C7	C8
93,7	95,2	89,5	90,4	91,9	90,4	90,5	93,2
C9	C10	C11	C12	C13	C14	C15	
94,6	91,6	87,2	88,1	93,1	90,7	90,7	

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
3039 K	93,3	79,2	91,4	103,2	91,1	0,436	0,406	0,249	0,348	0,0011



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TM30 details

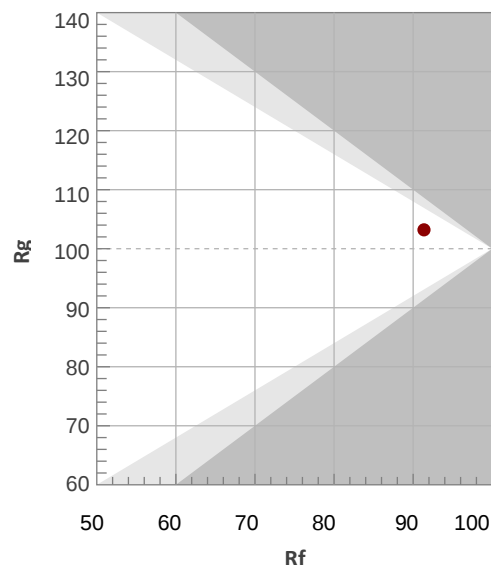
Rf 91,4

Fidelity index Rf

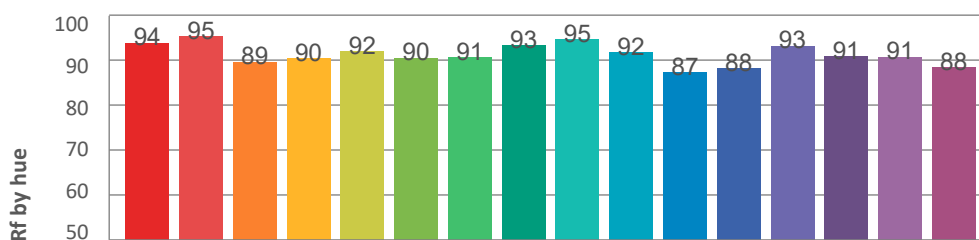
Rg 103,2

Gamut index Rg

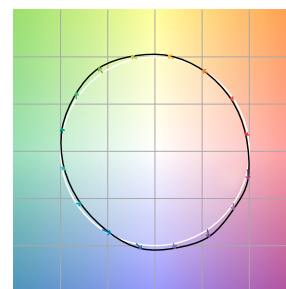
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	94	-2%	-2%
2	95	-2%	1%
3	89	0%	5%
4	90	2%	6%
5	92	3%	5%
6	90	6%	0%
7	91	3%	-5%
8	93	1%	-4%
9	95	-2%	-2%
10	92	-4%	3%
11	87	-1%	9%
12	88	4%	6%
13	93	5%	1%
14	91	7%	-3%
15	91	3%	-5%
16	88	2%	-9%



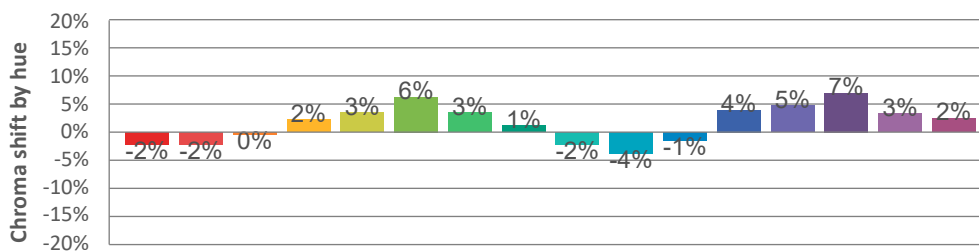
Hue binH



Color vector graphics



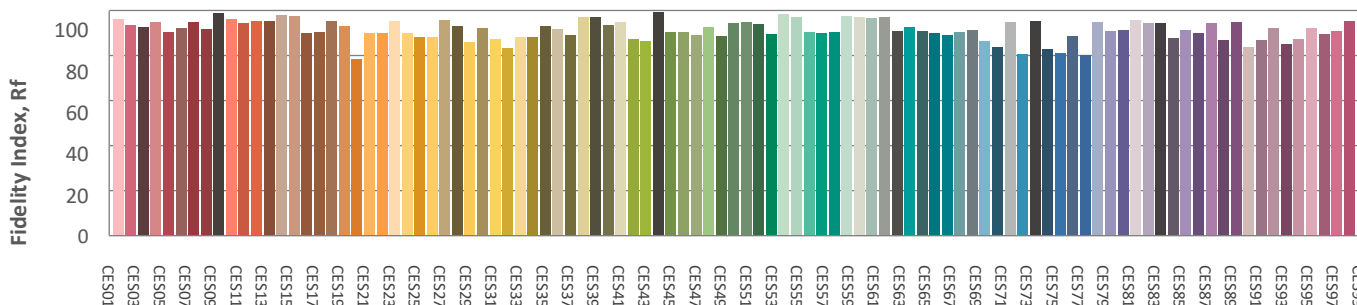
Hue bin



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	-1,3	-1,1	-1,3	-0,9	-0,7	-1,3	-1,1	-1,3	-0,9	-0,7
	3H	-0,4	0,0	-0,1	0,2	0,3	-0,4	0,0	-0,1	0,2	0,3
	4H	0,1	0,5	0,5	0,8	1,0	0,1	0,5	0,5	0,8	1,0
	6H	0,7	1,1	1,0	1,4	1,7	0,7	1,1	1,0	1,4	1,7
	8H	1,1	1,4	1,4	1,7	2,1	1,1	1,4	1,4	1,7	2,1
	12H	1,4	1,7	1,8	2,1	2,5	1,4	1,7	1,8	2,1	2,5
4H	2H	-1,1	-0,7	-0,7	-0,5	-0,2	-1,1	-0,7	-0,7	-0,5	-0,2
	3H	0,3	0,6	0,6	0,9	1,4	0,3	0,6	0,6	0,9	1,4
	4H	0,9	1,2	1,3	1,6	2,1	0,9	1,2	1,3	1,6	2,1
	6H	1,6	2,0	2,1	2,3	2,7	1,6	2,0	2,1	2,3	2,7
	8H	2,1	2,4	2,6	2,8	3,1	2,1	2,4	2,6	2,8	3,1
	12H	2,5	2,8	3,0	3,2	3,6	2,5	2,8	3,0	3,2	3,6
8H	4H	1,1	1,5	1,7	1,8	2,2	1,1	1,5	1,7	1,8	2,2
	6H	2,1	2,3	2,6	2,8	3,3	2,1	2,3	2,6	2,8	3,3
	8H	2,8	2,9	3,3	3,5	4,1	2,8	2,9	3,3	3,5	4,1
	12H	3,4	3,5	4,0	4,0	4,6	3,4	3,5	4,0	4,0	4,6
12H	4H	1,2	1,4	1,7	1,8	2,3	1,2	1,4	1,7	1,8	2,3
	6H	2,3	2,4	2,8	3,0	3,6	2,3	2,4	2,8	3,0	3,6
	8H	3,0	3,1	3,5	3,6	4,2	3,0	3,1	3,5	3,6	4,2
Variation of the observer position for the luminaire distance S											
S = 1.0H		0,1 / -0,2					0,1 / -0,2				
S = 1.5H		0,4 / -0,4					0,4 / -0,4				
S = 2.0H		0,9 / -0,6					0,9 / -0,6				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 283lm total luminous flux											



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