

LM-79

Test Report

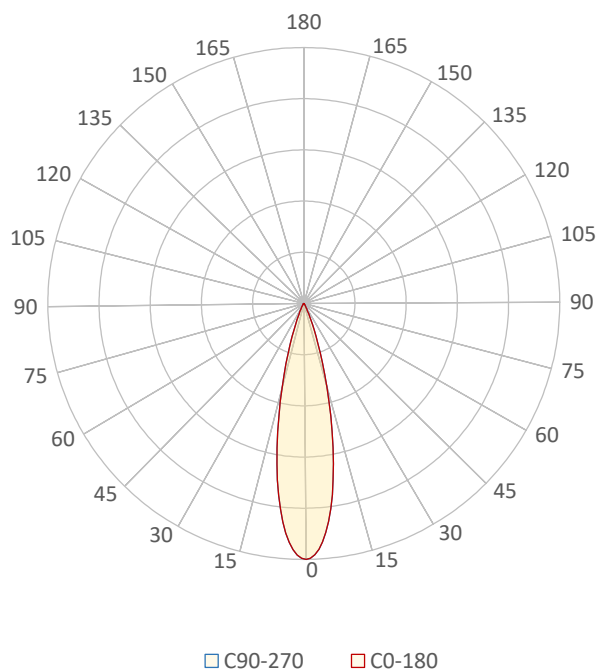
LM79-TOPAZ-EXPO-3000K-CRI90-MEDIUM

General Discription

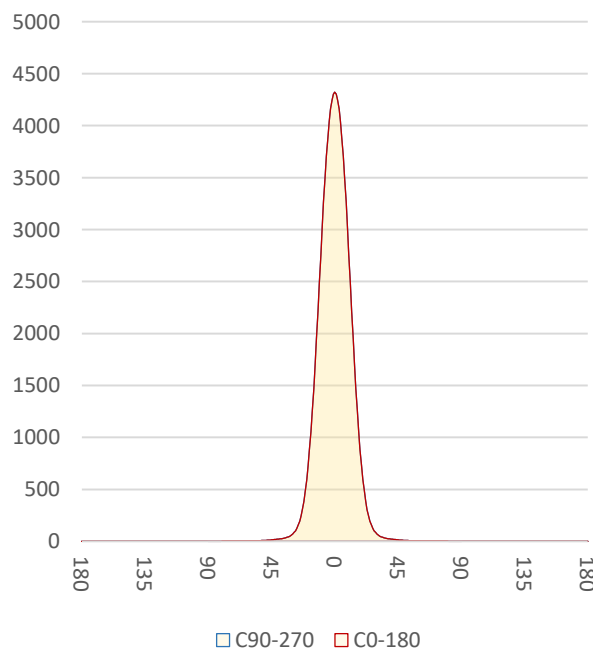
Item number	T-E-XLX-1B-3090-M
Date and time	16-2-2024 11:16:22
CCT (Kelvin)	3016 K
Beam angle	24,4°
Luminous flux	885 lm
Efficiency	82 lm/watt
Weighted energy	10,7 kWh/1000h
Power factor	0,99
CRI (RA)	93,5
Fidelity index Rf	Rf 91,2
Gammut index Rg	Rg 103,5
Peak	4322 cd



Polar diagram



Cartesian diagram



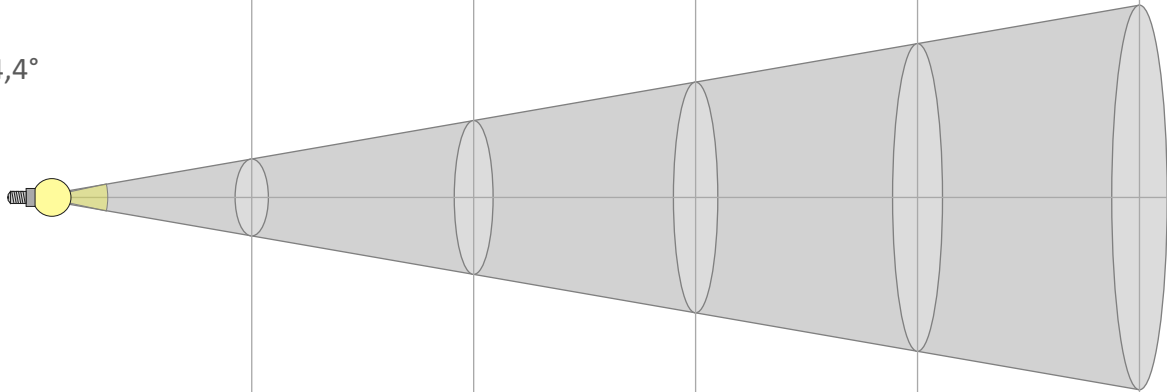
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Beam details					1m		2m		3m		4m		5m								
Lux*					4322 lx		1081 lx		480 lx		270 lx		173 lx								
24,4° 																					
*measured at center of beam																					
Footcandles*					401,6 fcd		100,4 fcd		44,6 fcd		25,1 fcd		16,1 fcd								
Beam width (meter)					0,4 m		0,9 m		1,3 m		1,7 m		2,2 m								
Beam width (Feet)					1,4 ft		2,8 ft		4,3 ft		5,7 ft		7,1 ft								
Beam intensities																					
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m		
4322lx	1081lx	480lx	270lx	173lx	120lx	88lx	68lx	53lx	43lx	36lx	30lx	26lx	22lx	19lx	17lx	15lx	13lx	12lx	11lx		
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		
401,6fcd	100,4fcd	44,6fcd	25,1fcd	16,1fcd	11,2fcd	8,2fcd	6,3fcd	5fcd	4fcd	3,3fcd	2,8fcd	2,4fcd	2fcd	1,8fcd	1,6fcd	1,4fcd	1,2fcd	1,1fcd	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°		
4322	4249	4041	3706	3267	2753	2213	1701	1251	880	593	384	244	156	103	70	50	38	30	25		
100%	98%	93%	86%	76%	64%	51%	39%	29%	20%	14%	9%	6%	4%	2%	2%	1%	1%	1%	1%		
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°		
4322	4249	4041	3706	3267	2753	2213	1701	1251	880	593	384	244	156	103	70	50	38	30	25		
100%	98%	93%	86%	76%	64%	51%	39%	29%	20%	14%	9%	6%	4%	2%	2%	1%	1%	1%	1%		
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°		
4322	4249	4041	3706	3267	2753	2213	1701	1251	880	593	384	244	156	103	70	50	38	30	25		
100%	98%	93%	86%	76%	64%	51%	39%	29%	20%	14%	9%	6%	4%	2%	2%	1%	1%	1%	1%		
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°		
4322	4249	4041	3706	3267	2753	2213	1701	1251	880	593	384	244	156	103	70	50	38	30	25		
100%	98%	93%	86%	76%	64%	51%	39%	29%	20%	14%	9%	6%	4%	2%	2%	1%	1%	1%	1%		
Beam angle 50%					Field angle 10%					Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone			
24,4°					42,9°					55,5°				99,4%				98,2%			



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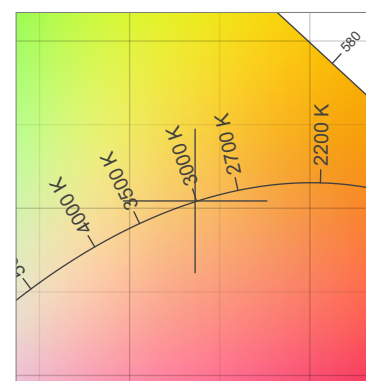
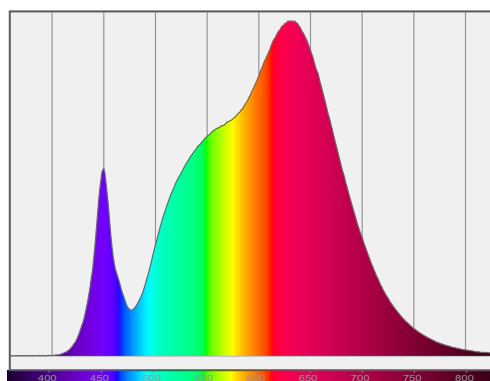
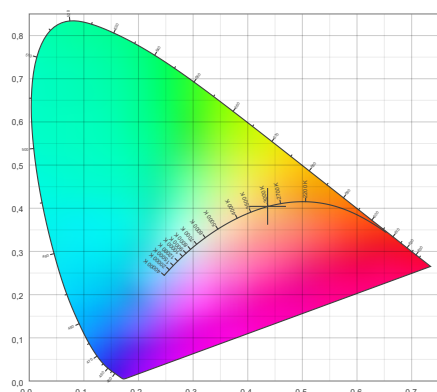
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Color details



CIE 1931

x: 0,436



Spectra

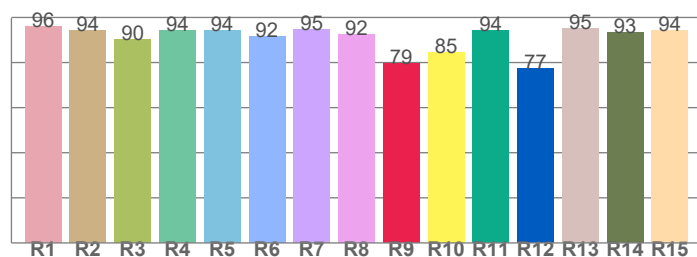
CIE 1931 ZOOM

3016 K

y: 0,404

 $\Delta uv: 0,0002$

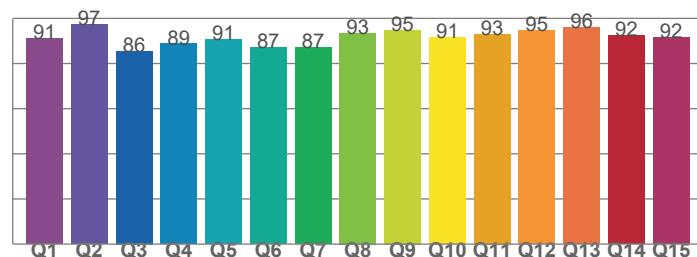
CRI: 93,5 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
96,0	94,3	90,1	94,3	94,3	91,8	94,9	92,4
R9	R10	R11	R12	R13	R14	R15	
79,5	84,7	94,3	77,4	95,3	93,4	94,2	

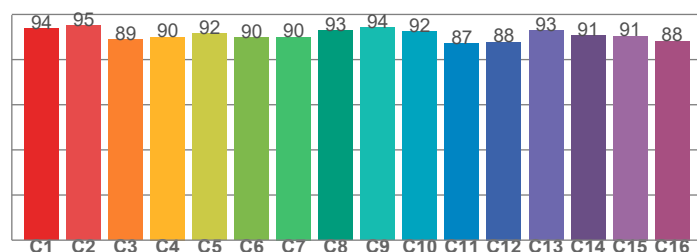
CQS: 90,9



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
91,1	97,2	85,5	88,7	90,5	87,0	87,1	93,5
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
94,9	91,4	93,0	94,7	95,8	92,4	91,7	

TM30: 91,2



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

C1	C2	C3	C4	C5	C6	C7	C8
93,8	95,1	88,9	89,9	91,5	89,9	90,1	92,8
C9	C10	C11	C12	C13	C14	C15	
94,2	92,4	87,0	87,8	92,9	90,5	90,5	

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
3016 K	93,5	79,5	91,2	103,5	90,9	0,436	0,404	0,250	0,348	0,0002



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TM30 details

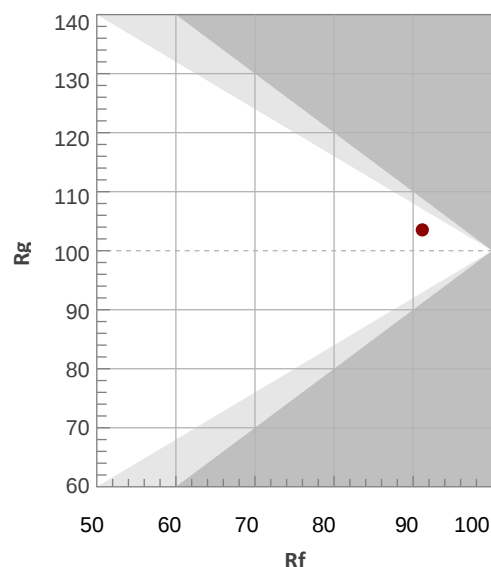
Rf 91,2

Fidelity index Rf

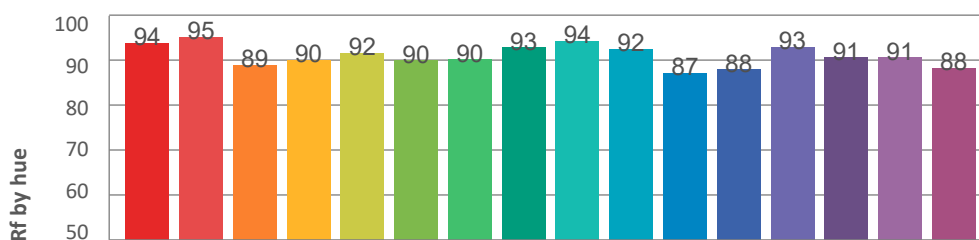
Rg 103,5

Gamut index Rg

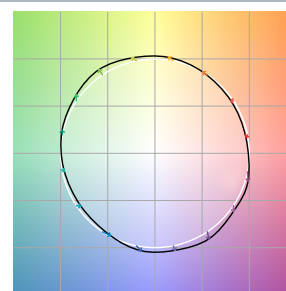
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	94	-2%	-2%
2	95	-2%	2%
3	89	0%	6%
4	90	2%	6%
5	92	4%	5%
6	90	7%	0%
7	90	4%	-5%
8	93	1%	-5%
9	94	-2%	-2%
10	92	-4%	3%
11	87	-1%	9%
12	88	4%	6%
13	93	5%	1%
14	91	7%	-3%
15	91	3%	-5%
16	88	2%	-9%



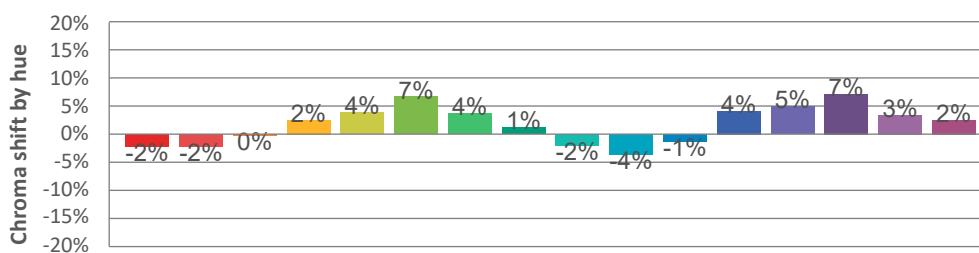
Hue binH



Color vector graphics



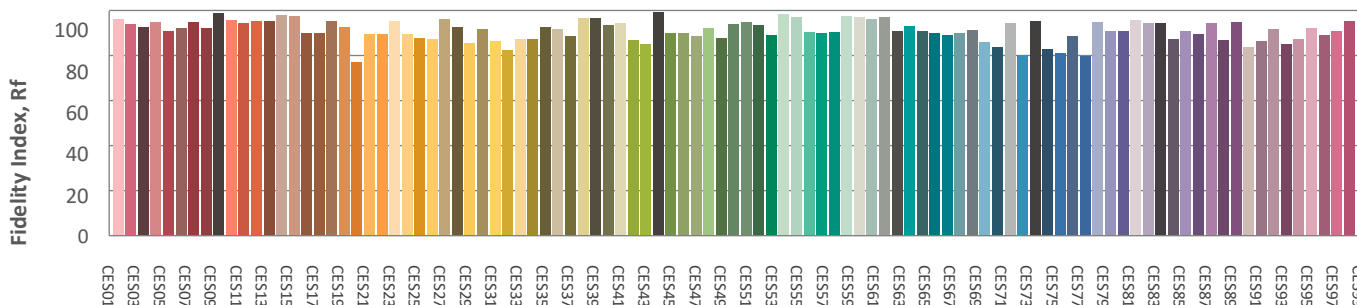
Hue bin



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	4,9	5,3	5,0	5,5	5,7	4,9	5,3	5,0	5,5	5,7
	3H	4,9	5,4	5,2	5,6	5,8	4,9	5,4	5,2	5,6	5,8
	4H	4,9	5,4	5,3	5,6	5,9	4,9	5,4	5,3	5,6	5,9
	6H	4,9	5,4	5,2	5,7	6,0	4,9	5,4	5,2	5,7	6,0
	8H	4,9	5,3	5,2	5,7	6,0	4,9	5,3	5,2	5,7	6,0
	12H	4,9	5,3	5,2	5,6	6,0	4,9	5,3	5,2	5,6	6,0
4H	2H	4,7	5,2	5,1	5,5	5,7	4,7	5,2	5,1	5,5	5,7
	3H	5,0	5,4	5,3	5,7	6,1	5,0	5,4	5,3	5,7	6,1
	4H	4,9	5,3	5,4	5,8	6,3	4,9	5,3	5,4	5,8	6,3
	6H	5,0	5,4	5,5	5,7	6,1	5,0	5,4	5,5	5,7	6,1
	8H	4,9	5,3	5,4	5,7	6,0	4,9	5,3	5,4	5,7	6,0
	12H	4,9	5,2	5,4	5,6	6,1	4,9	5,2	5,4	5,6	6,1
8H	4H	4,9	5,3	5,4	5,6	6,0	4,9	5,3	5,4	5,6	6,0
	6H	4,9	5,2	5,4	5,7	6,2	4,9	5,2	5,4	5,7	6,2
	8H	5,0	5,2	5,5	5,7	6,3	5,0	5,2	5,5	5,7	6,3
	12H	5,0	5,1	5,5	5,6	6,2	5,0	5,1	5,5	5,6	6,2
12H	4H	4,8	5,1	5,3	5,5	6,0	4,8	5,1	5,3	5,5	6,0
	6H	5,0	5,1	5,5	5,7	6,3	5,0	5,1	5,5	5,7	6,3
	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	3,1 / -2,6	3,1 / -2,6
S = 1.5H	5,3 / -3,6	5,3 / -3,6
S = 2.0H	7,1 / -4,4	7,1 / -4,4
Standard table	n/a	n/a
Correction summand	n/a	n/a

Corrected glare indices referring to 885lm total luminous flux