

LM-79

Test Report

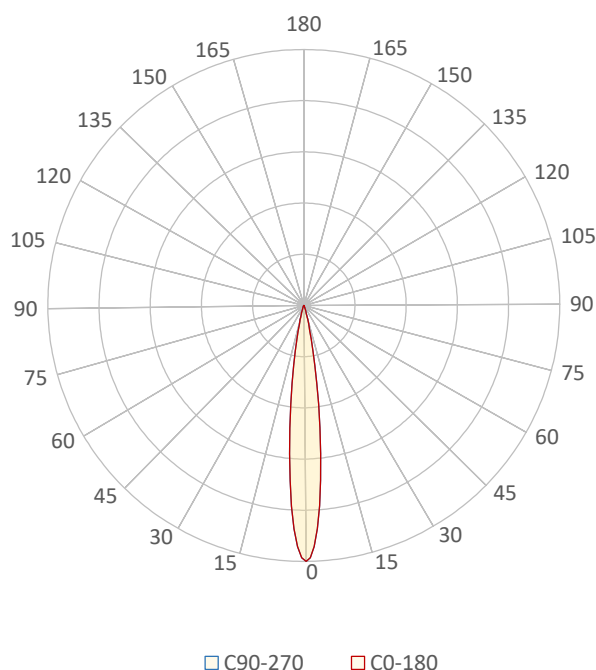
LM79-TOPAZ-EXPO-3000K-CRI90-SPOT

General Discription

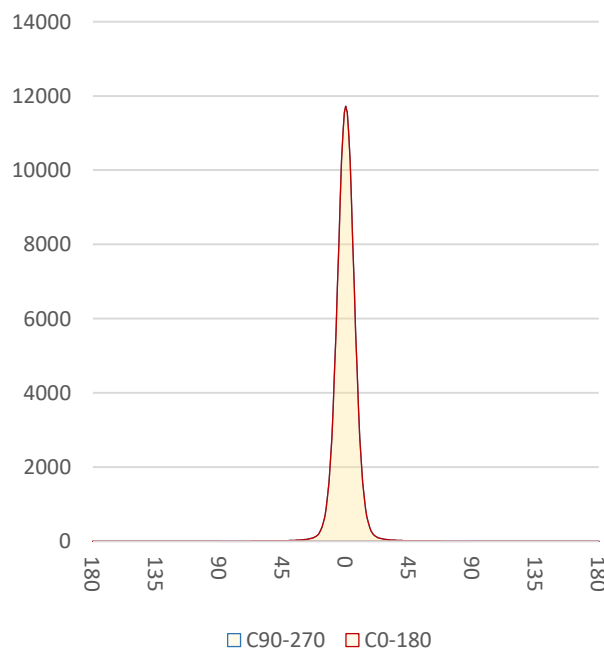
Item number	T-E-XLX-1B-3090-S
Date and time	16-2-2024 11:11:00
CCT (Kelvin)	3012 K
Beam angle	13,6°
Luminous flux	887 lm
Efficiency	83 lm/watt
Weighted energy	10,7 kWh/1000h
Power factor	0,99
CRI (RA)	93,5
Fidelity index Rf	Rf 91,1
Gammut index Rg	Rg 103,6
Peak	11724 cd



Polar diagram



Cartesian diagram



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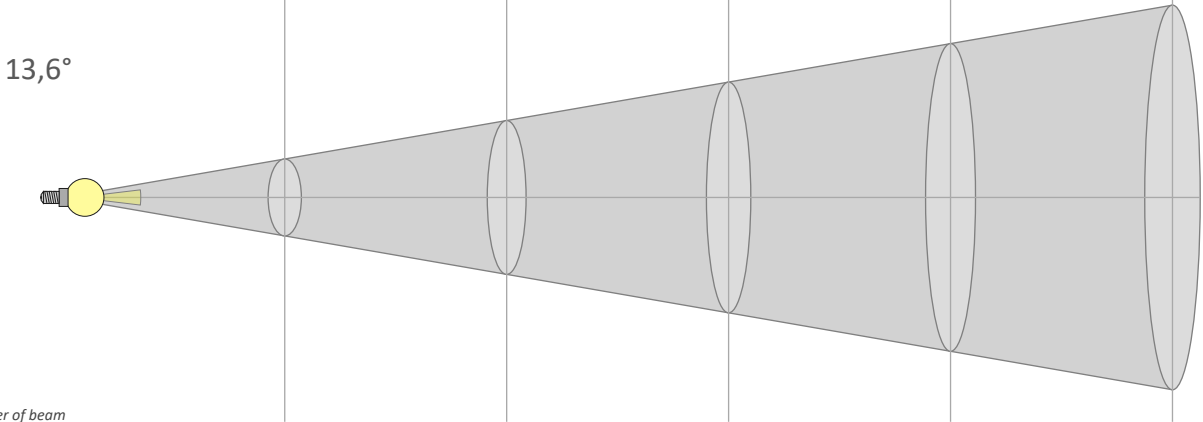
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Beam details	1m	2m	3m	4m	5m
Lux*	11724 lx	2931 lx	1303 lx	733 lx	469 lx



*measured at center of beam

Footcandles*	1089,2 fcd	272,3 fcd	121,0 fcd	68,1 fcd	43,6 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
11724lx	2931lx	1303lx	733lx	469lx	326lx	239lx	183lx	145lx	117lx	97lx	81lx	69lx	60lx	52lx	46lx	41lx	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
1089,2fcd	272,3fcd	121fcd	68,1fcd	43,6fcd	30,3fcd	22,2fcd	17fcd	13,4fcd	10,9fcd	9fcd	7,6fcd	6,4fcd	5,6fcd	4,8fcd	4,3fcd	3,8fcd	3,4fcd	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	11,6K	11,1K	10,2K	9,2K	8,0K	6,8K	5,7K	4,6K	3,6K	2,8K	2,1K	1,6K	1,2K	0,9K	0,7K	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°
11,7K	11,6K	11,1K	10,2K	9,2K	8,0K	6,8K	5,7K	4,6K	3,6K	2,8K	2,1K	1,6K	1,2K	0,9K	0,7K	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°
11,7K	11,6K	11,1K	10,2K	9,2K	8,0K	6,8K	5,7K	4,6K	3,6K	2,8K	2,1K	1,6K	1,2K	0,9K	0,7K	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°
11,7K	11,6K	11,1K	10,2K	9,2K	8,0K	6,8K	5,7K	4,6K	3,6K	2,8K	2,1K	1,6K	1,2K	0,9K	0,7K	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°	35,8°	99,3%	98,2%



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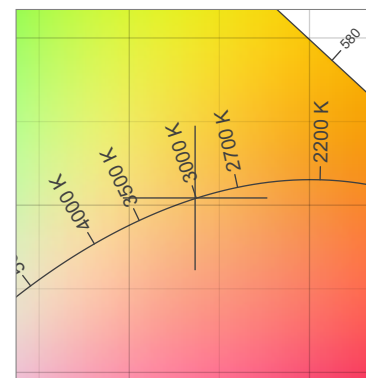
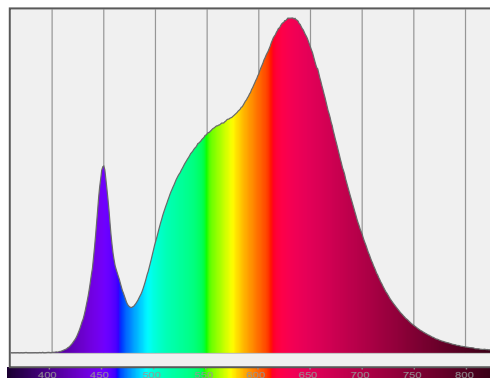
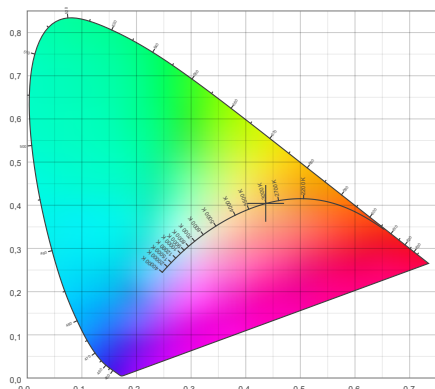
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Color details



CIE 1931

x: 0,437



Spectra

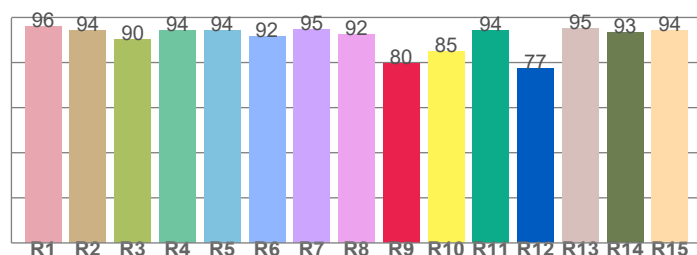
CIE 1931 ZOOM

3012 K

y: 0,404

Δuv : 0,0002

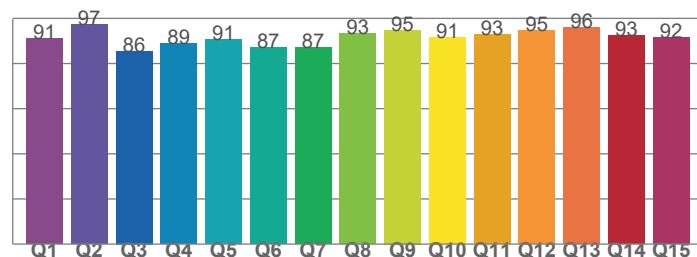
CRI: 93,5 (R1-R8)



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

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

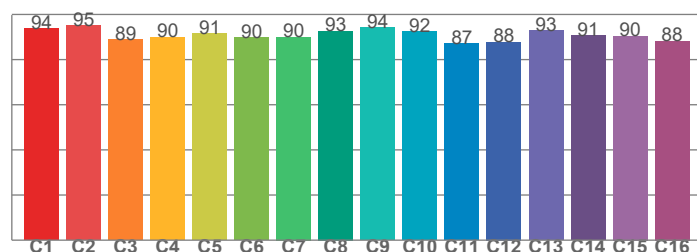
CQS: 90,9



CQS values

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

TM30: 91,1



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	89,8	90,0	92,7
C9	C10	C11	C12	C13	C14	C15	
94,2	92,5	87,1	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
3012 K	93,5	79,7	91,1	103,6	90,9	0,437	0,404	0,250	0,348	0,0002



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TM30 details

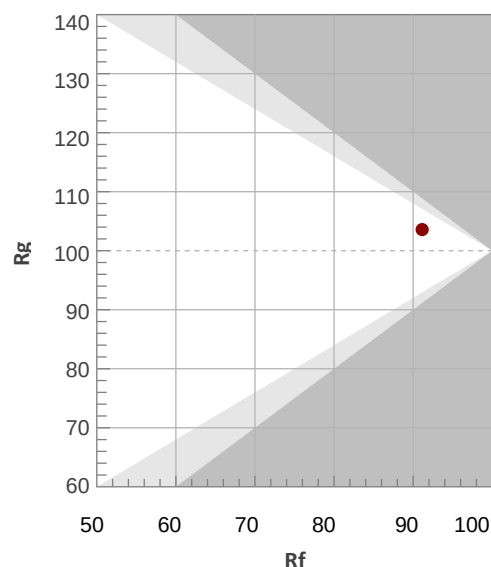
Rf 91,1

Fidelity index Rf

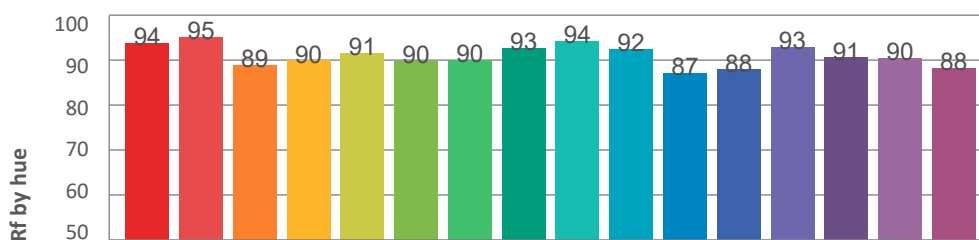
Rg 103,6

Gamut index Rg

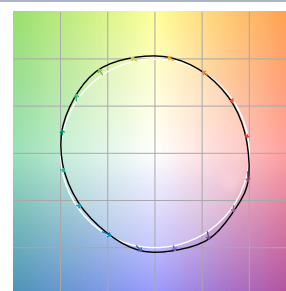
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	94	-2%	-2%
2	95	-2%	2%
3	89	0%	6%
4	90	3%	6%
5	91	4%	5%
6	90	7%	0%
7	90	4%	-5%
8	93	1%	-5%
9	94	-2%	-3%
10	92	-4%	3%
11	87	-1%	9%
12	88	4%	6%
13	93	5%	1%
14	91	7%	-3%
15	90	3%	-5%
16	88	3%	-9%



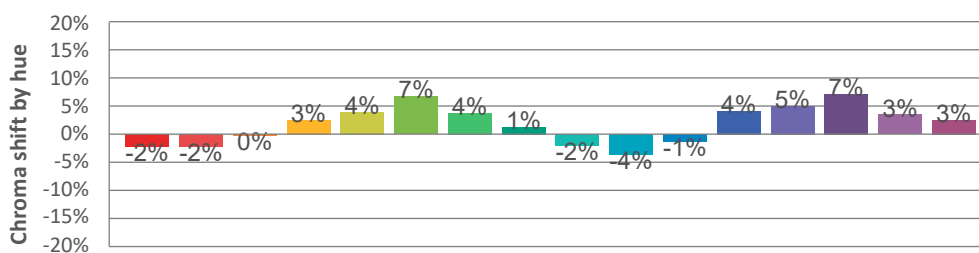
Hue binH



Color vector graphics



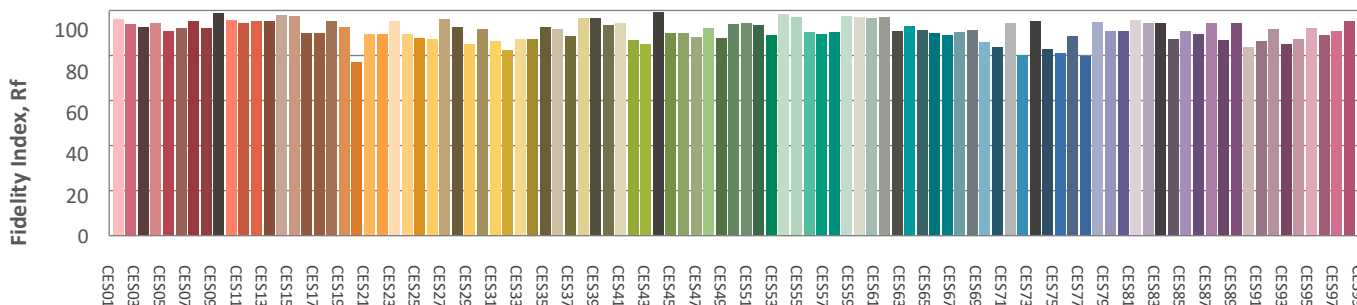
Hue bin



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	4,2	4,5	4,3	4,7	4,9	4,2	4,5	4,3	4,7	4,9
	3H	4,2	4,7	4,6	4,9	5,0	4,2	4,7	4,6	4,9	5,0
	4H	4,3	4,7	4,7	5,0	5,2	4,3	4,7	4,7	5,0	5,2
	6H	4,4	4,8	4,7	5,1	5,4	4,4	4,8	4,7	5,1	5,4
	8H	4,4	4,8	4,7	5,1	5,5	4,4	4,8	4,7	5,1	5,5
	12H	4,4	4,8	4,8	5,2	5,6	4,4	4,8	4,8	5,2	5,6
4H	2H	4,0	4,5	4,4	4,7	5,0	4,0	4,5	4,4	4,7	5,0
	3H	4,4	4,7	4,7	5,1	5,5	4,4	4,7	4,7	5,1	5,5
	4H	4,4	4,7	4,8	5,2	5,7	4,4	4,7	4,8	5,2	5,7
	6H	4,5	5,0	5,0	5,3	5,6	4,5	5,0	5,0	5,3	5,6
	8H	4,6	5,0	5,1	5,3	5,6	4,6	5,0	5,1	5,3	5,6
	12H	4,6	4,9	5,1	5,3	5,8	4,6	4,9	5,1	5,3	5,8
8H	4H	4,4	4,8	4,9	5,1	5,4	4,4	4,8	4,9	5,1	5,4
	6H	4,6	4,8	5,1	5,3	5,8	4,6	4,8	5,1	5,3	5,8
	8H	4,7	4,9	5,3	5,4	6,0	4,7	4,9	5,3	5,4	6,0
	12H	4,9	5,0	5,5	5,5	6,1	4,9	5,0	5,5	5,5	6,1
12H	4H	4,3	4,6	4,8	5,0	5,5	4,3	4,6	4,8	5,0	5,5
	6H	4,7	4,8	5,2	5,3	6,0	4,7	4,8	5,2	5,3	6,0
	8H	4,7	4,9	5,3	5,4	6,0	4,7	4,9	5,3	5,4	6,0
Variation of the observer position for the luminaire distance S											
S = 1.0H		1,8 / -1,6					1,8 / -1,6				
S = 1.5H		3,7 / -2,3					3,7 / -2,3				
S = 2.0H		5,3 / -3,0					5,3 / -3,0				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 887lm total luminous flux											