

LM-79

Test Report

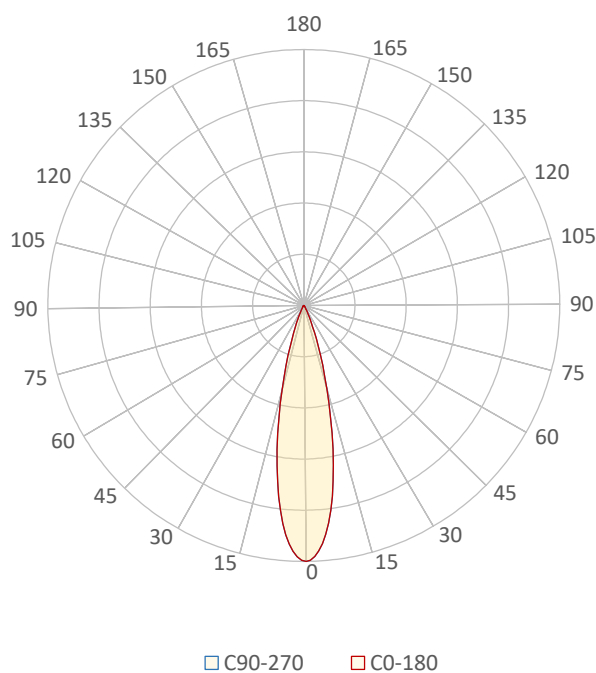
LM79-TOPAZ-EXPO-4000K-CRI90 [MEDIUM]

General Discription

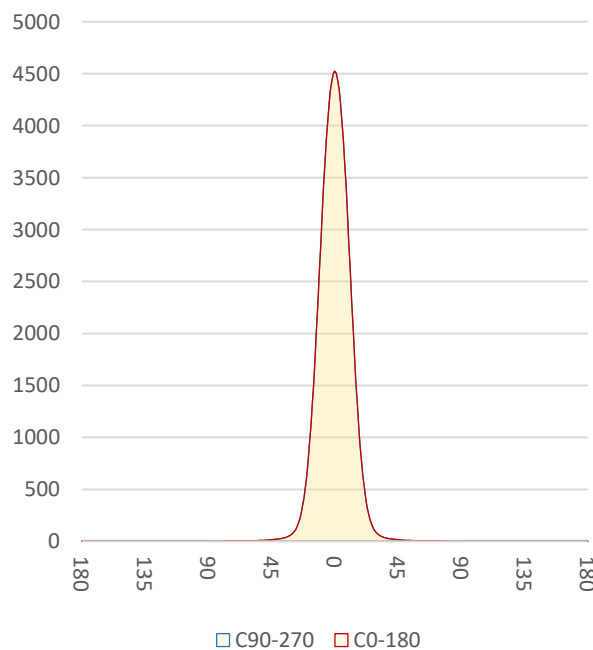
Item number	T-E-XLX-1B-4090-M
Date and time	16-2-2024 12:23:43
CCT (Kelvin)	3976 K
Beam angle	24,4°
Luminous flux	932 lm
Efficiency	88 lm/watt
Weighted energy	10,6 kWh/1000h
Power factor	0,99
CRI (RA)	95,0
Fidelity index Rf	Rf 92,0
Gammut index Rg	Rg 100,8
Peak	4524 cd



Polar diagram



Cartesian diagram



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Beam details	1m	2m	3m	4m	5m
Lux*	4524 lx	1131 lx	503 lx	283 lx	181 lx

*measured at center of beam

Footcandles*	420,3 fcd	105,1 fcd	46,7 fcd	26,3 fcd	16,8 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	4,2 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
4524lx	1131lx	503lx	283lx	181lx	126lx	92lx	71lx	56lx	45lx	37lx	31lx	27lx	23lx	20lx	18lx	16lx	14lx	13lx	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
420,3fcd	105,1fcd	46,7fcd	26,3fcd	16,8fcd	11,7fcd	8,6fcd	6,6fcd	5,2fcd	4,2fcd	3,5fcd	2,9fcd	2,5fcd	2,1fcd	1,9fcd	1,6fcd	1,5fcd	1,3fcd	1,2fcd	1,1fcd

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°
4524	4443	4223	3871	3409	2872	2311	1779	1314	931	631	413	264	169	112	76	55	42	33	28
100%	98%	93%	86%	75%	63%	51%	39%	29%	21%	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°
4524	4443	4223	3871	3409	2872	2311	1779	1314	931	631	413	264	169	112	76	55	42	33	28
100%	98%	93%	86%	75%	63%	51%	39%	29%	21%	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°
4524	4443	4223	3871	3409	2872	2311	1779	1314	931	631	413	264	169	112	76	55	42	33	28
100%	98%	93%	86%	75%	63%	51%	39%	29%	21%	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°
4524	4443	4223	3871	3409	2872	2311	1779	1314	931	631	413	264	169	112	76	55	42	33	28
100%	98%	93%	86%	75%	63%	51%	39%	29%	21%	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°	43,1°	55,9°	99,4%	98,2%



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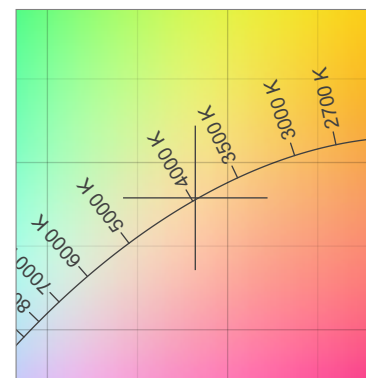
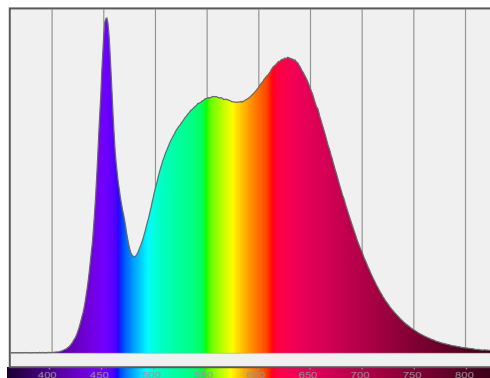
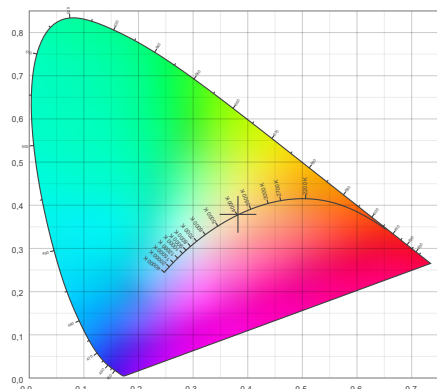
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Color details



CIE 1931

x: 0,382

3976 K

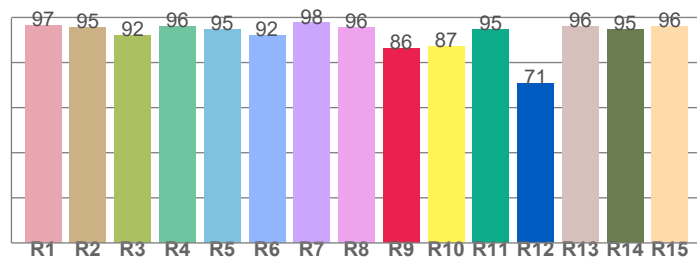
y: 0,379

Spectra

CIE 1931 ZOOM

Δuv : 0,0005

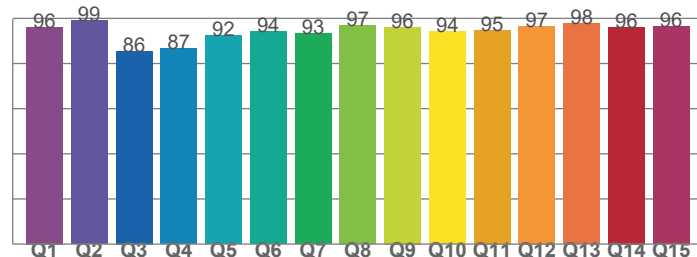
CRI: 95,0 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
96,6	95,4	91,9	96,2	94,8	91,9	97,6	95,7
R9	R10	R11	R12	R13	R14	R15	
86,1	87,2	94,9	70,6	96,2	94,8	95,9	

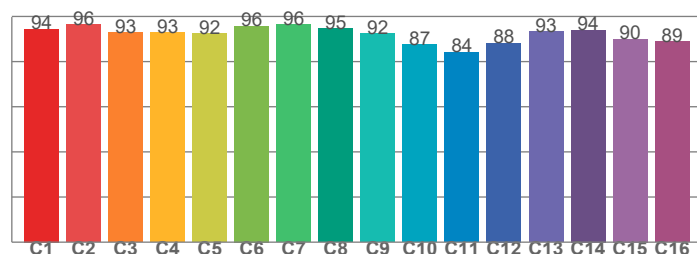
CQS: 93,3



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
96,2	99,1	85,6	86,7	92,4	94,1	93,2	96,9
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,2	94,2	94,9	96,6	97,8	96,2	96,4	

TM30: 92,0



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

C1	C2	C3	C4	C5	C6	C7	C8
94,5	96,4	92,9	93,0	92,4	95,7	96,3	94,8
C9	C10	C11	C12	C13	C14	C15	
92,4	87,5	84,1	88,2	93,3	94,0	89,9	

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
3976 K	95,0	86,1	92,0	100,8	93,3	0,382	0,379	0,225	0,335	0,0005



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TM30 details

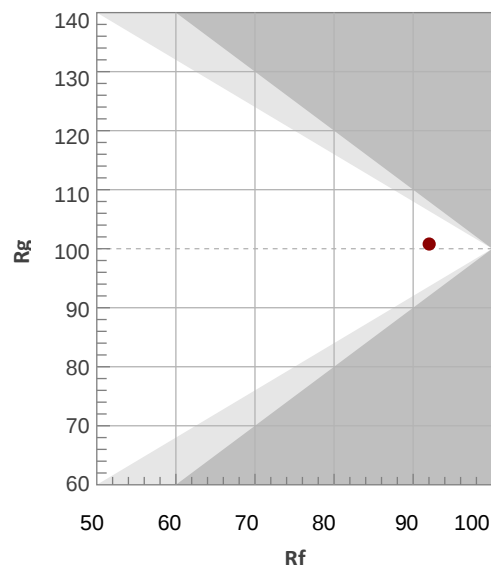
Rf 92,0

Fidelity index Rf

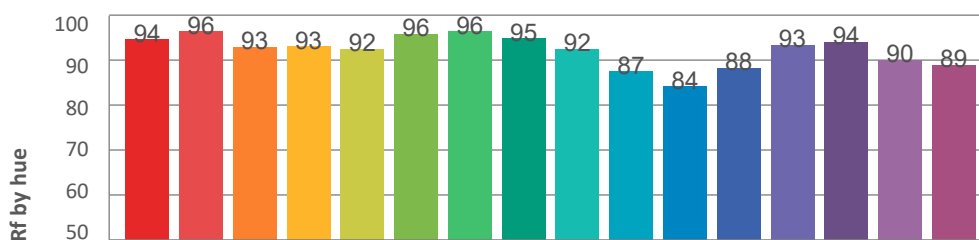
Rg 100,8

Gamut index Rg

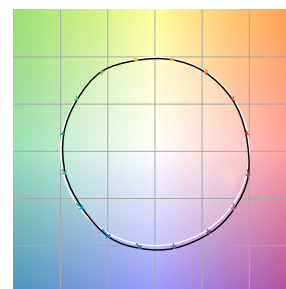
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	94	-2%	-1%
2	96	-1%	0%
3	93	-1%	3%
4	93	-1%	2%
5	92	-2%	2%
6	96	2%	1%
7	96	-1%	0%
8	95	-2%	1%
9	92	-2%	5%
10	87	-3%	7%
11	84	3%	11%
12	88	4%	5%
13	93	5%	0%
14	94	4%	0%
15	90	4%	-5%
16	89	2%	-7%



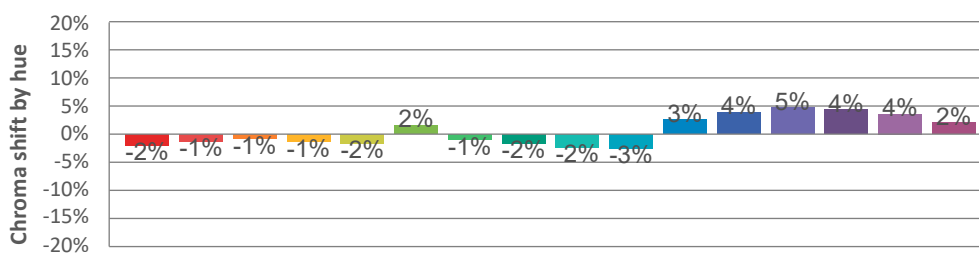
Hue binH



Color vector graphics



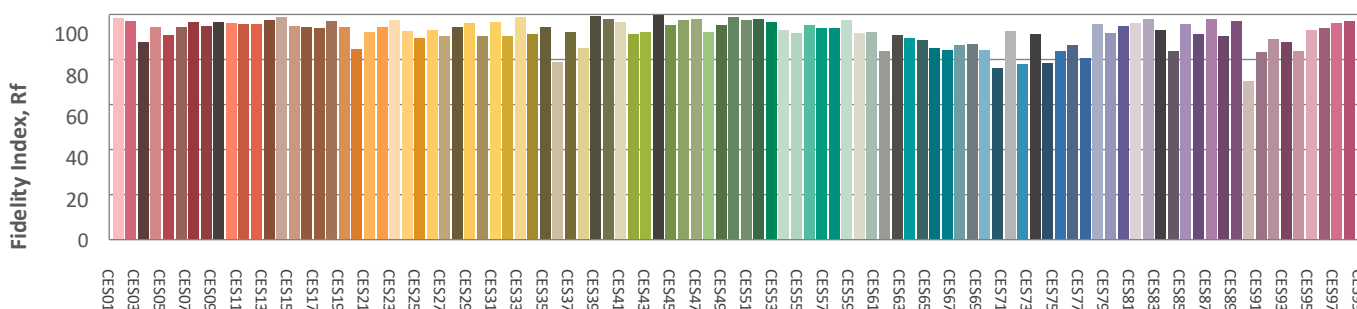
Hue bin



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	5,4	5,8	5,5	6,0	6,2	5,4	5,8	5,5	6,0	6,2
	3H	5,4	5,9	5,7	6,1	6,3	5,4	5,9	5,7	6,1	6,3
	4H	5,4	5,9	5,8	6,1	6,4	5,4	5,9	5,8	6,1	6,4
	6H	5,4	5,9	5,7	6,2	6,5	5,4	5,9	5,7	6,2	6,5
	8H	5,4	5,8	5,7	6,1	6,5	5,4	5,8	5,7	6,1	6,5
	12H	5,4	5,8	5,7	6,1	6,5	5,4	5,8	5,7	6,1	6,5
4H	2H	5,2	5,8	5,6	6,0	6,2	5,2	5,8	5,6	6,0	6,2
	3H	5,4	5,9	5,8	6,2	6,6	5,4	5,9	5,8	6,2	6,6
	4H	5,4	5,8	5,8	6,2	6,7	5,4	5,8	5,8	6,2	6,7
	6H	5,4	5,9	5,9	6,2	6,6	5,4	5,9	5,9	6,2	6,6
	8H	5,4	5,8	5,9	6,2	6,5	5,4	5,8	5,9	6,2	6,5
	12H	5,4	5,7	5,9	6,1	6,5	5,4	5,7	5,9	6,1	6,5
8H	4H	5,4	5,8	5,9	6,1	6,5	5,4	5,8	5,9	6,1	6,5
	6H	5,4	5,7	5,9	6,1	6,7	5,4	5,7	5,9	6,1	6,7
	8H	5,5	5,7	6,0	6,2	6,8	5,5	5,7	6,0	6,2	6,8
	12H	5,4	5,6	6,0	6,1	6,7	5,4	5,6	6,0	6,1	6,7
12H	4H	5,3	5,6	5,8	6,0	6,5	5,3	5,6	5,8	6,0	6,5
	6H	5,4	5,6	5,9	6,1	6,8	5,4	5,6	5,9	6,1	6,8
	8H	5,4	5,6	6,0	6,1	6,7	5,4	5,6	6,0	6,1	6,7
Variation of the observer position for the luminaire distance S											
S = 1.0H		3,1 / -2,5					3,1 / -2,5				
S = 1.5H		5,4 / -3,6					5,4 / -3,6				
S = 2.0H		7,1 / -4,5					7,1 / -4,5				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 932lm total luminous flux											