

LM-79

Test Report

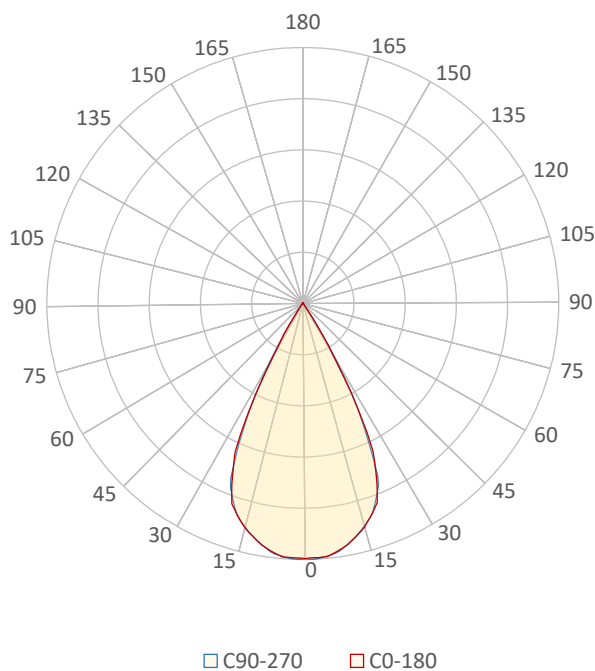
LM79-SAPPHIRE-ZOOM-3000K-CRI96-FLOOD

General Discription

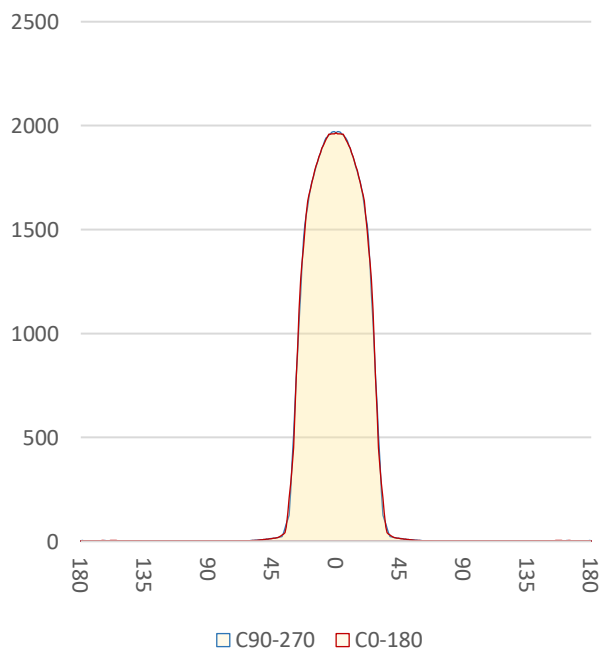
Item number	S-X-XX-22-03-Z
Date and time	24-10-2017 17:25:10
CCT (Kelvin)	3113 K
Beam angle	53,3°
Luminous flux	1309 lm
Efficiency	46 lm/watt
Weighted energy	28,4 kWh/1000h
Power factor	0,94
CRI (RA)	95,9
Fidelity index Rf	Rf 89,6
Gammut index Rg	Rg 106,0
Peak	1971 cd



Polar diagram



Cartesian diagram



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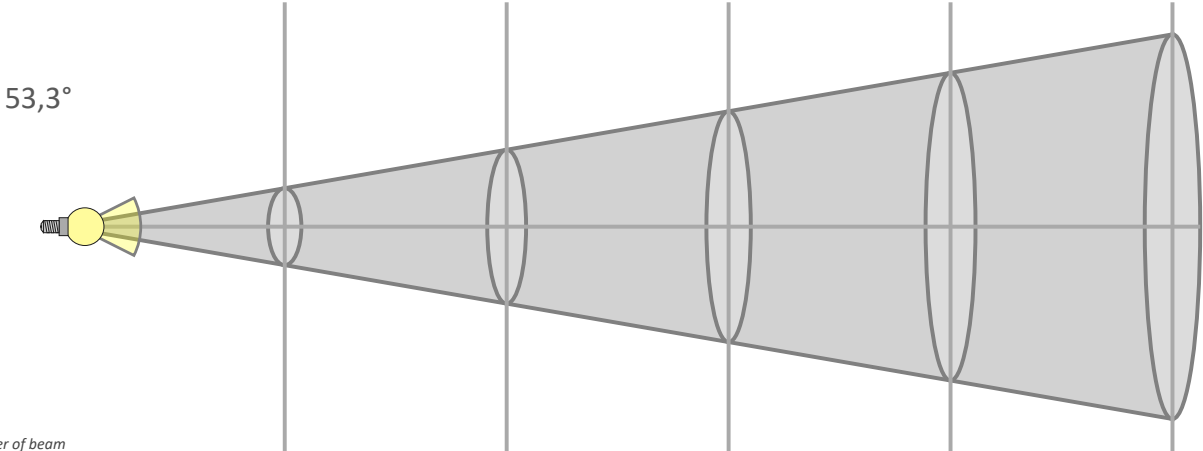
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Beam details	1m	2m	3m	4m	5m
Lux*	1966 lx	491 lx	218 lx	123 lx	79 lx



53,3°

*measured at center of beam

Footcandles*	182,6 fcd	45,7 fcd	20,3 fcd	11,4 fcd	7,3 fcd
Beam width (meter)	1 m	2 m	3 m	4 m	5 m
Beam width (Feet)	3,3 ft	6,6 ft	9,9 ft	13,2 ft	16,5 ft

Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
1966lx	491lx	218lx	123lx	79lx	55lx	40lx	31lx	24lx	20lx	16lx	14lx	12lx	10lx	9lx	8lx	7lx	6lx	5lx	5lx
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
182,6fcd	45,7fcd	20,3fcd	11,4fcd	7,3fcd	5,1fcd	3,7fcd	2,9fcd	2,3fcd	1,8fcd	1,5fcd	1,3fcd	1,1fcd	0,9fcd	0,8fcd	0,7fcd	0,6fcd	0,6fcd	0,5fcd	0,5fcd

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°
1966	1960	1960	1946	1918	1891	1849	1807	1757	1697	1638	1492	1338	1116	783	450	280	139	41	31
100%	100%	100%	99%	98%	96%	94%	92%	89%	86%	83%	76%	68%	57%	40%	23%	14%	7%	2%	2%

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°
1966	1971	1961	1947	1927	1888	1848	1802	1754	1699	1611	1523	1320	1054	787	515	242	105	63	24
100%	100%	100%	99%	98%	96%	94%	92%	89%	86%	82%	77%	67%	54%	40%	26%	12%	5%	3%	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°
1966	1960	1960	1946	1918	1891	1849	1807	1757	1697	1638	1492	1338	1116	783	450	280	139	41	31
100%	100%	100%	99%	98%	96%	94%	92%	89%	86%	83%	76%	68%	57%	40%	23%	14%	7%	2%	2%

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°
1966	1971	1961	1947	1927	1888	1848	1802	1754	1699	1611	1523	1320	1054	787	515	242	105	63	24
100%	100%	100%	99%	98%	96%	94%	92%	89%	86%	82%	77%	67%	54%	40%	26%	12%	5%	3%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
53,3°	65,5°	71,9°	98,9%	98,1%



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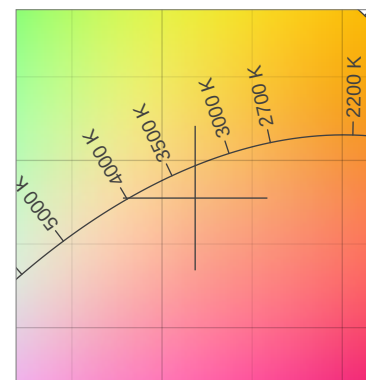
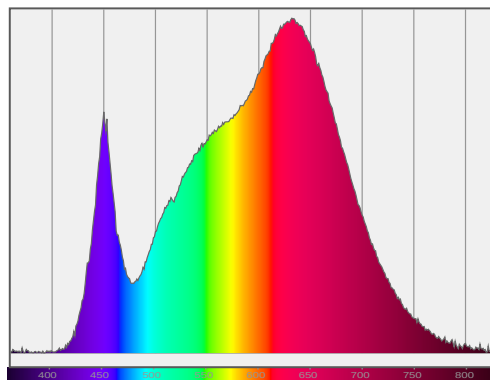
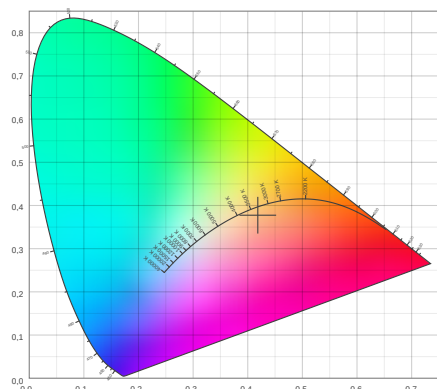
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Color details



CIE 1931

x: 0,418

3113 K

y: 0,377

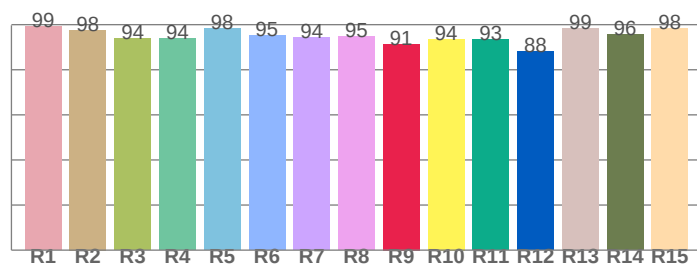
Spectra

CIE 1931 ZOOM

Δuv : 0,0083

CRI: 95,9 (R1-R8)

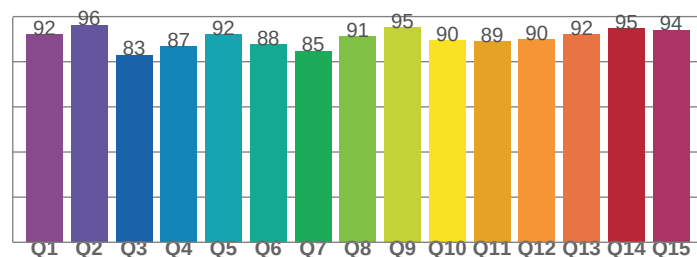
CRI values, R1-R8 are used to calculate final CRI value



R1	R2	R3	R4	R5	R6	R7	R8
99,2	97,6	93,8	93,8	98,4	95,3	94,2	94,9
R9	R10	R11	R12	R13	R14	R15	
91,4	93,7	93,4	88,0	98,6	95,6	98,4	

CQS: 89,8

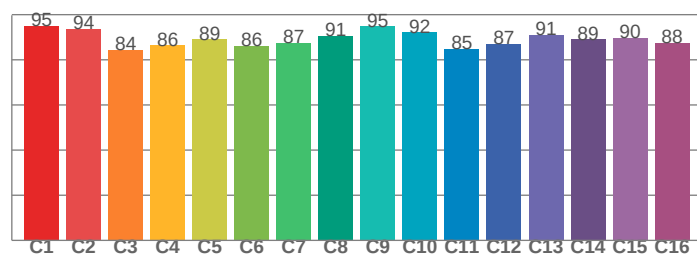
CQS values



Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
92,2	96,4	83,1	86,8	92,1	87,9	84,8	91,3
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
95,3	89,6	89,0	89,9	92,0	94,7	94,2	

TM30: 89,6

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



C1	C2	C3	C4	C5	C6	C7	C8
94,9	93,8	84,3	86,4	89,0	86,2	87,4	90,7
C9	C10	C11	C12	C13	C14	C15	
94,7	92,1	84,7	87,1	91,1	89,0	89,6	

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
3113 K	95,9	91,4	89,6	106,0	89,8	0,418	0,377	0,250	0,338	0,0083



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TM30 details

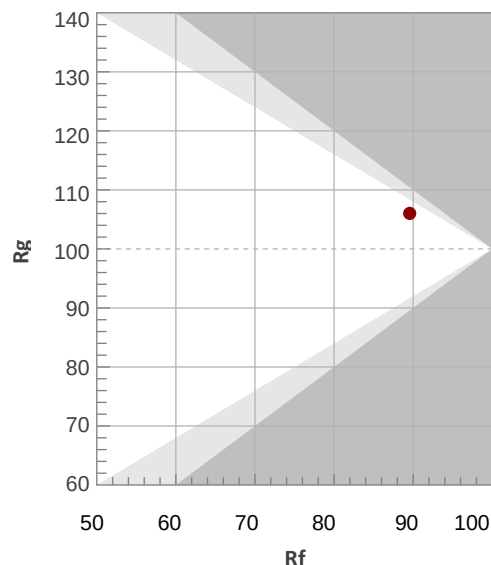
Rf 89,6

Fidelity index Rf

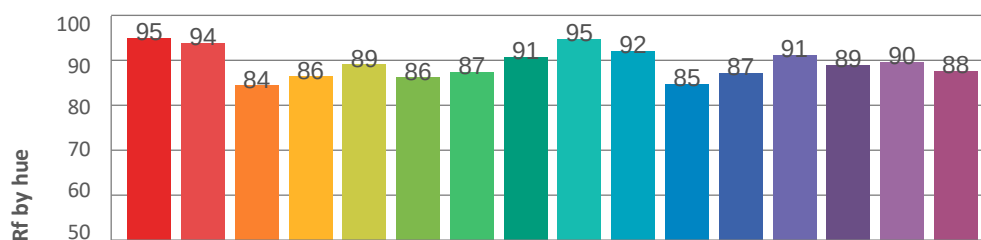
Rg 106,0

Gamut index Rg

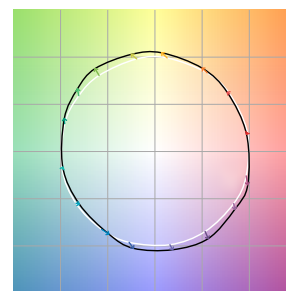
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	95	-1%	-1%
2	94	-1%	3%
3	84	1%	7%
4	86	4%	7%
5	89	6%	5%
6	86	8%	0%
7	87	5%	-5%
8	91	2%	-5%
9	95	-1%	-2%
10	92	-2%	3%
11	85	0%	9%
12	87	5%	6%
13	91	6%	2%
14	89	8%	-1%
15	90	4%	-4%
16	88	4%	-9%



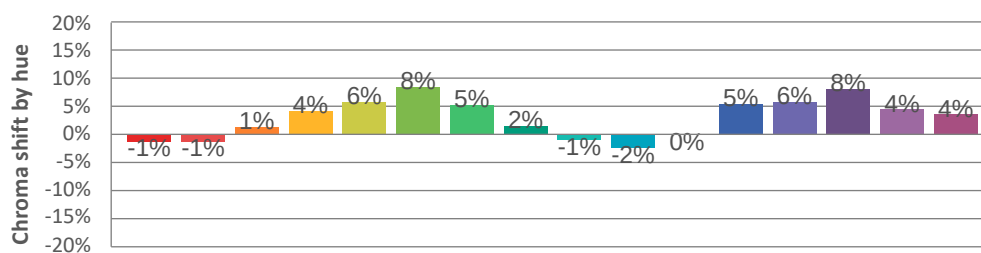
Hue binH



Color vector graphics



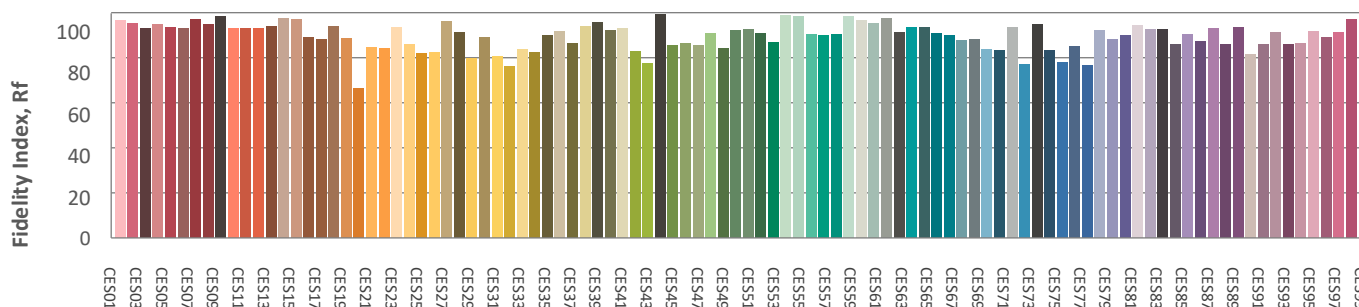
Hue bin



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	11,7	12,4	12,0	12,6	12,8	11,7	12,4	12,0	12,6	12,8
	3H	11,6	12,2	11,9	12,5	12,7	11,6	12,2	11,9	12,5	12,7
	4H	11,6	12,1	11,9	12,4	12,7	11,6	12,1	11,9	12,4	12,7
	6H	11,5	12,1	11,9	12,3	12,6	11,5	12,1	11,9	12,3	12,6
	8H	11,5	12,0	11,9	12,3	12,6	11,5	12,0	11,9	12,3	12,6
	12H	11,5	12,0	11,9	12,3	12,6	11,5	12,0	11,9	12,3	12,6
4H	2H	11,6	12,1	11,9	12,4	12,6	11,6	12,1	11,9	12,4	12,6
	3H	11,5	11,9	11,8	12,2	12,6	11,5	11,9	11,8	12,2	12,6
	4H	11,4	11,8	11,8	12,2	12,5	11,4	11,8	11,8	12,2	12,5
	6H	11,4	11,7	11,8	12,1	12,5	11,4	11,7	11,8	12,1	12,5
	8H	11,4	11,7	11,8	12,1	12,5	11,4	11,7	11,8	12,1	12,5
	12H	11,5	11,7	11,9	12,1	12,5	11,5	11,7	11,9	12,1	12,5
8H	4H	11,3	11,6	11,8	12,0	12,4	11,3	11,6	11,8	12,0	12,4
	6H	11,3	11,5	11,8	12,0	12,4	11,3	11,5	11,8	12,0	12,4
	8H	11,4	11,5	11,8	12,0	12,5	11,4	11,5	11,8	12,0	12,5
	12H	11,4	11,6	11,9	12,1	12,6	11,4	11,6	11,9	12,1	12,6
12H	4H	11,3	11,5	11,7	12,0	12,4	11,3	11,5	11,7	12,0	12,4
	6H	11,3	11,5	11,8	11,9	12,4	11,3	11,5	11,8	11,9	12,4
	8H	11,3	11,5	11,8	11,9	12,5	11,3	11,5	11,8	11,9	12,5
Variation of the observer position for the luminaire distance S											
S = 1,0H		+6,4 / -6,2					+6,4 / -6,2				
S = 1,5H		+9,2 / -7,1					+9,2 / -7,1				
S = 2,0H		+11,2 / -7,8					+11,2 / -7,8				
Standard table		BK00					BK00				
Correction summand		-6,7					-6,7				
Corrected glare indices referring to 1309lm total luminous flux											

