

LM-79

Test Report

LM79-REVO-INGROUND-3000K-CRI80-DEG12

General Discription

Item number	R-I-2-03-1
Date and time	22-4-2016 10:55:04
CCT (Kelvin)	2990 K
Beam angle	14,8°
Luminous flux	1463 lm
Efficiency	76 lm/watt
Weighted energy	19,2 kWh/1000h
Power factor	0,94
CRI (RA)	83,3
Fidelity index Rf	Rf 84,5
Gammut index Rg	Rg 96,4



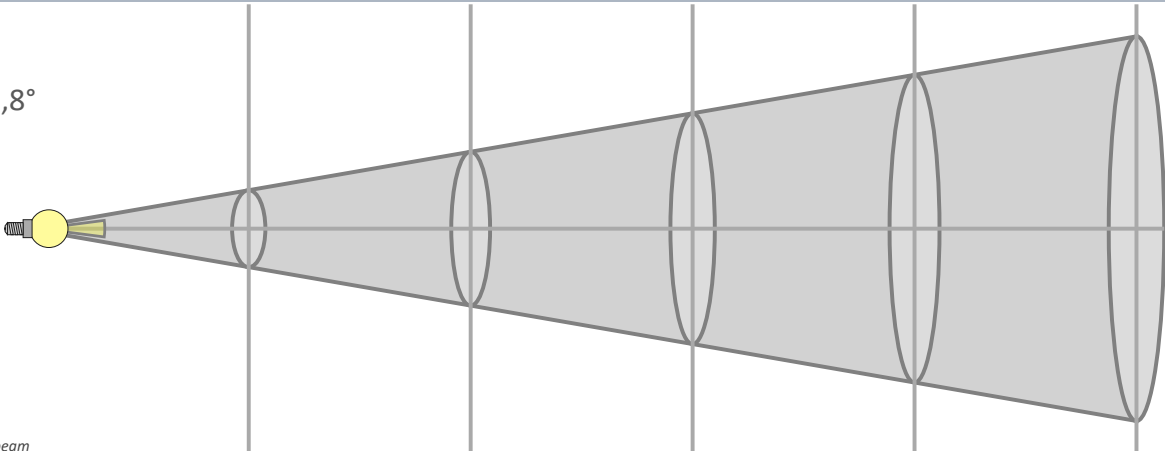
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Beam details					1m		2m		3m		4m		5m								
Lux*					16215 lx		4054 lx		1802 lx		1013 lx		649 lx								
14,8° 																					
*measured at center of beam																					
Footcandles*					1506,5 fcd		376,6 fcd		167,4 fcd		94,2 fcd		60,3 fcd								
Beam width (meter)					0,3 m		0,5 m		0,8 m		1 m		1,3 m								
Beam width (Feet)					0,9 ft		1,7 ft		2,6 ft		3,4 ft		4,3 ft								
Beam intensities																					
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m		
16215lx	4054lx	1802lx	1013lx	649lx	450lx	331lx	253lx	200lx	162lx	134lx	113lx	96lx	83lx	72lx	63lx	56lx	50lx	45lx	41lx		
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		
1506,5fcd	376,6fcd	167,4fcd	94,2fcd	60,3fcd	41,8fcd	30,7fcd	23,5fcd	18,6fcd	15,1fcd	12,5fcd	10,5fcd	8,9fcd	7,7fcd	6,7fcd	5,9fcd	5,2fcd	4,6fcd	4,2fcd	3,8fcd		
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°		
16,2K	15,9K	15,1K	14,3K	13,1K	11,6K	10,1K	8,6K	7,1K	5,9K	4,7K	3,7K	2,9K	2,3K	1,8K	1,4K	1,1K	0,9K	0,7K	0,5K		
100%	98%	93%	88%	81%	72%	62%	53%	44%	37%	29%	23%	18%	14%	11%	8%	7%	5%	4%	3%		
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°		
16,2K	16,2K	15,6K	14,5K	13,2K	11,9K	10,4K	8,9K	7,4K	6,0K	4,8K	3,9K	3,0K	2,3K	1,8K	1,4K	1,1K	0,8K	0,7K	0,5K		
100%	100%	96%	90%	82%	73%	64%	55%	45%	37%	30%	24%	18%	14%	11%	9%	7%	5%	4%	3%		
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°		
16,2K	15,9K	15,1K	14,3K	13,1K	11,6K	10,1K	8,6K	7,1K	5,9K	4,7K	3,7K	2,9K	2,3K	1,8K	1,4K	1,1K	0,9K	0,7K	0,5K		
100%	98%	93%	88%	81%	72%	62%	53%	44%	37%	29%	23%	18%	14%	11%	8%	7%	5%	4%	3%		
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°		
16,2K	16,2K	15,6K	14,5K	13,2K	11,9K	10,4K	8,9K	7,4K	6,0K	4,8K	3,9K	3,0K	2,3K	1,8K	1,4K	1,1K	0,8K	0,7K	0,5K		
100%	100%	96%	90%	82%	73%	64%	55%	45%	37%	30%	24%	18%	14%	11%	9%	7%	5%	4%	3%		
Beam angle 50%					Field angle 10%					Cutoff angle 2,5%					Intensity ratio in 120° cone					Intensity ratio in 90° cone	
14,8°					28,9°					{C_ANGLE}°					98,8%					97,8%	



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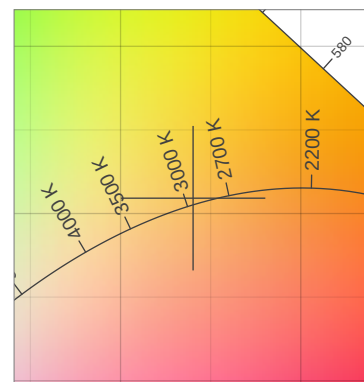
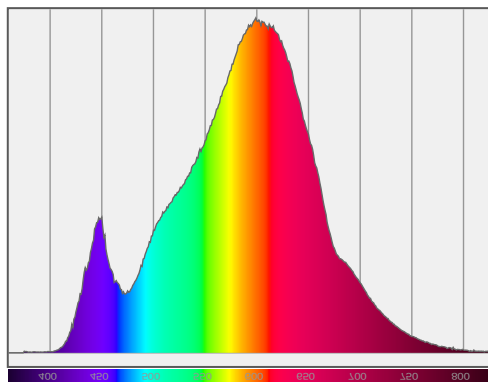
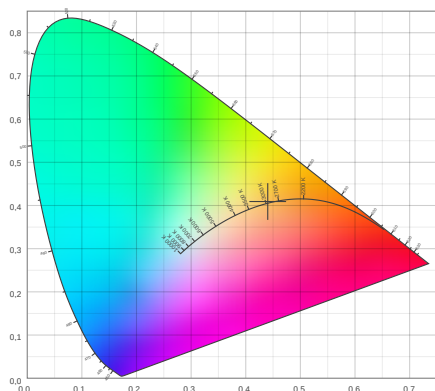
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Color details



CIE 1931

x: 0,440

2990 K

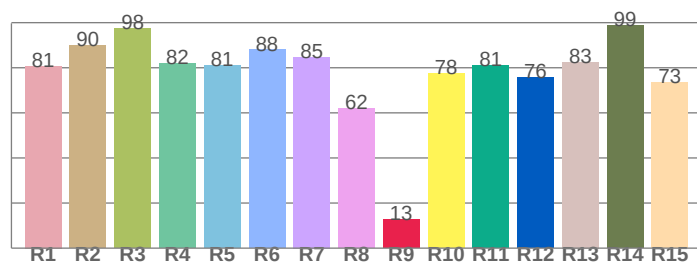
y: 0,409

Spectra

CIE 1931 ZOOM

 $\Delta uv: 0,0016$

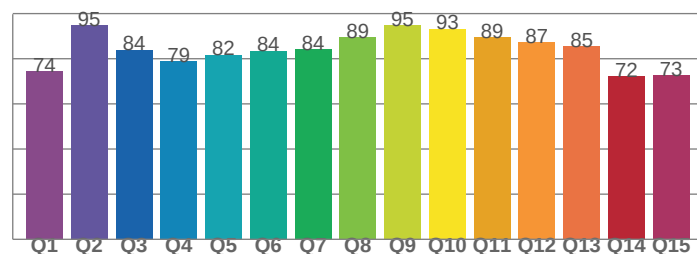
CRI: 83,3 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
80,8	89,9	97,5	81,9	81,1	88,0	84,8	62,0
R9	R10	R11	R12	R13	R14	R15	
12,6	77,6	81,0	75,7	82,6	98,8	73,3	

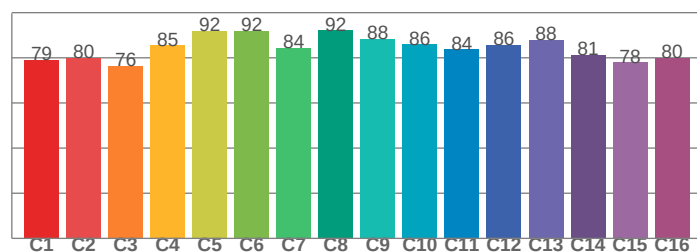
CQS: 82,6



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
74,3	95,0	84,0	78,9	81,7	83,5	84,3	89,3
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
94,9	93,2	89,4	87,2	85,4	72,1	72,6	

TM30: 84,5



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

C1	C2	C3	C4	C5	C6	C7	C8
79,0	79,9	76,4	85,5	92,0	91,9	84,3	92,1
C9	C10	C11	C12	C13	C14	C15	
88,5	86,0	83,7	85,7	88,0	81,3	78,0	

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
2990 K	83,3	12,6	84,5	96,4	82,6	0,440	0,409	0,251	0,349	0,0016



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TM30 details

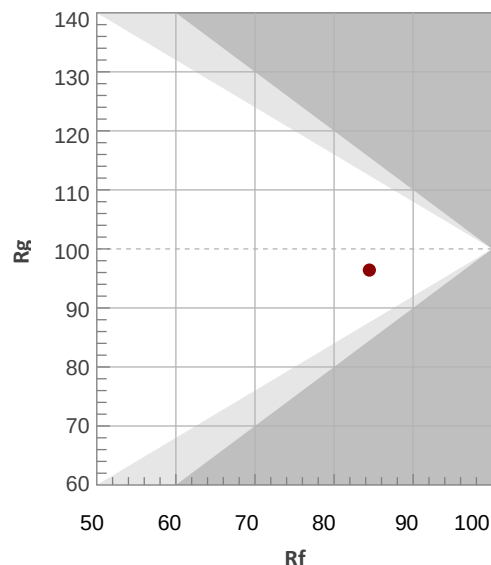
Rf 84,5

Fidelity index Rf

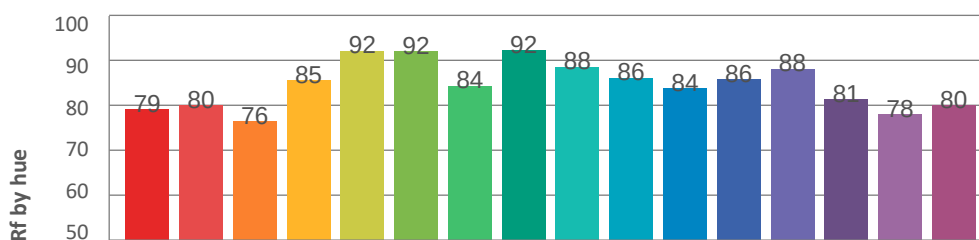
Rg 96,4

Gamut index Rg

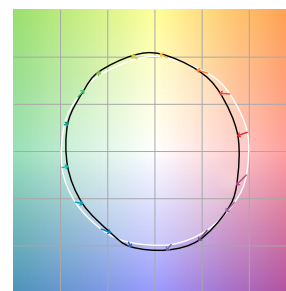
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	79	-11%	-1%
2	80	-8%	7%
3	76	-3%	11%
4	85	3%	8%
5	92	4%	4%
6	92	3%	-3%
7	84	-1%	-9%
8	92	-3%	-3%
9	88	-6%	0%
10	86	-6%	5%
11	84	-2%	10%
12	86	4%	3%
13	88	5%	-6%
14	81	4%	-13%
15	78	-2%	-13%
16	80	-8%	-12%



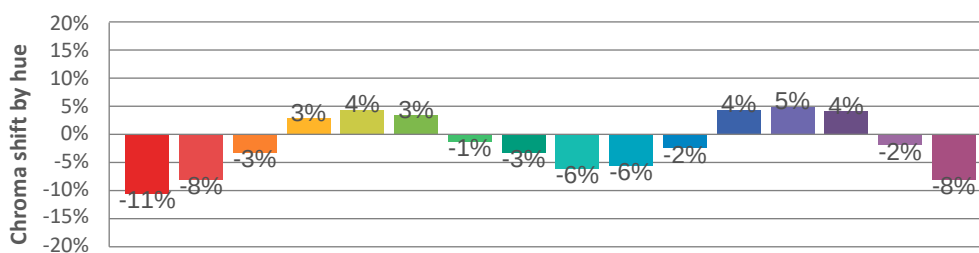
Hue binH



Color vector graphics



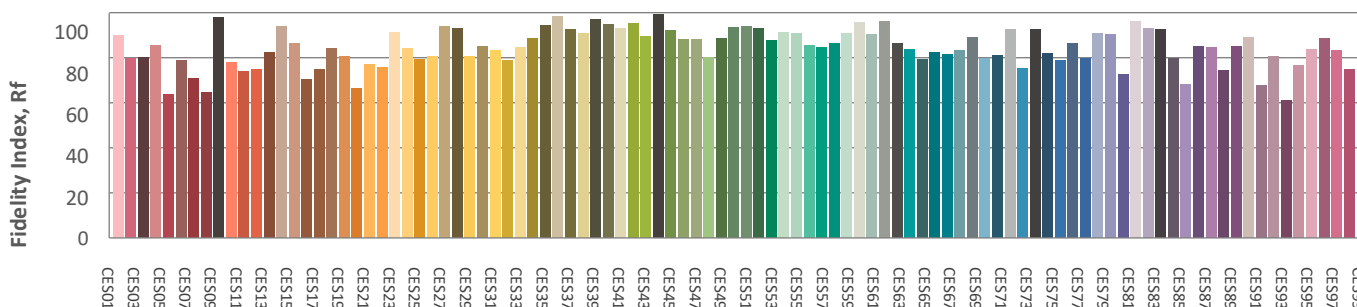
Hue bin



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	5,7	6,4	6,0	6,6	6,8	6,1	6,7	6,3	6,9	7,1
	3H	6,6	7,2	6,9	7,4	7,6	6,9	7,5	7,2	7,7	7,9
	4H	7,0	7,5	7,3	7,8	8,1	7,2	7,7	7,5	8,0	8,3
	6H	7,2	7,7	7,5	8,0	8,3	7,4	8,0	7,8	8,3	8,5
	8H	7,3	7,8	7,6	8,1	8,4	7,5	8,0	7,9	8,3	8,6
	12H	7,3	7,8	7,7	8,1	8,4	7,7	8,2	8,1	8,5	8,8
4H	2H	6,2	6,7	6,5	7,0	7,2	6,4	7,0	6,7	7,2	7,5
	3H	7,1	7,6	7,5	7,9	8,2	7,4	7,8	7,7	8,1	8,5
	4H	7,7	8,1	8,0	8,4	8,8	7,8	8,2	8,2	8,6	8,9
	6H	7,9	8,3	8,4	8,7	9,0	8,2	8,5	8,6	8,9	9,3
	8H	8,1	8,4	8,5	8,8	9,2	8,3	8,6	8,8	9,0	9,4
	12H	8,2	8,5	8,7	8,9	9,3	8,6	8,8	9,0	9,3	9,7
8H	4H	7,8	8,1	8,2	8,5	8,9	8,0	8,3	8,4	8,7	9,1
	6H	8,2	8,4	8,7	8,9	9,3	8,4	8,7	8,9	9,1	9,5
	8H	8,5	8,6	8,9	9,1	9,6	8,7	8,8	9,1	9,3	9,8
	12H	8,6	8,8	9,1	9,3	9,8	9,0	9,2	9,5	9,7	10,2
12H	4H	7,8	8,1	8,3	8,5	8,9	8,0	8,2	8,4	8,6	9,1
	6H	8,2	8,4	8,7	8,9	9,4	8,5	8,7	8,9	9,1	9,6
	8H	8,5	8,7	9,0	9,1	9,6	8,7	8,9	9,2	9,3	9,8

Variation of the observer position for the luminaire distance S

S = 1,0H	+0,6 / -0,4	+0,5 / -0,4
S = 1,5H	+1,3 / -1,0	+1,4 / -0,9
S = 2,0H	+2,3 / -1,5	+2,2 / -1,2
Standard table	BK04	BK04
Correction summand	-9,3	-9,0

Corrected glare indices referring to 1463lm total luminous flux



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