

LM-79

Test Report

LM79-HYLO-COMPACT-SINGLE-3000K-CRI80-DEG30

General Discription

Item number	HC-X-X-03-03-3-3	
Date and time	29-2-2016 16:11:47	
CCT (Kelvin)	2998 K	
Beam angle	29,7°	
Luminous flux	497 lm	
Efficiency	62 lm/watt	
Weighted energy	8,0 kWh/1000h	
Power factor	0,44	
CRI (RA)	83,0	
Fidelity index Rf	Rf 83,0	
Gammut index Rg	Rg 97,3	



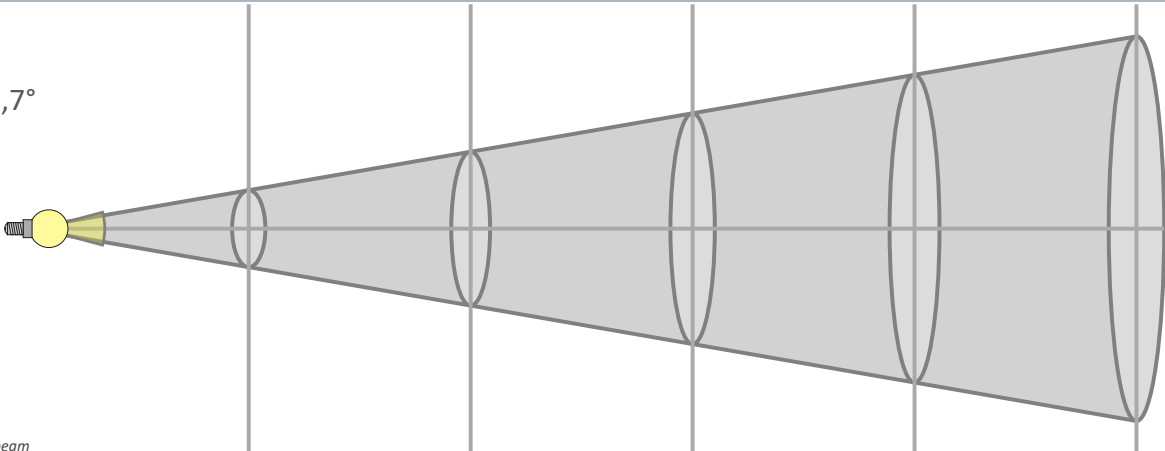
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Beam details					1m		2m		3m		4m		5m						
Lux*					1569 lx		392 lx		174 lx		98 lx		63 lx						
29,7° 																			
*measured at center of beam																			
Footcandles*					145,8 fcd		36,4 fcd		16,2 fcd		9,1 fcd		5,8 fcd						
Beam width (meter)					0,5 m		1,1 m		1,6 m		2,1 m		2,7 m						
Beam width (Feet)					1,7 ft		3,5 ft		5,2 ft		7 ft		8,7 ft						
Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
1569lx	392lx	174lx	98lx	63lx	44lx	32lx	25lx	19lx	16lx	13lx	11lx	9lx	8lx	7lx	6lx	5lx	5lx	4lx	4lx
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
145,8fcd	36,4fcd	16,2fcd	9,1fcd	5,8fcd	4fcd	3fcd	2,3fcd	1,8fcd	1,5fcd	1,2fcd	1fcd	0,9fcd	0,7fcd	0,6fcd	0,6fcd	0,5fcd	0,4fcd	0,4fcd	0,4fcd
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°
1569	1551	1491	1402	1283	1150	1006	863	720	585	458	348	256	187	134	98	70	52	39	29
100%	99%	95%	89%	82%	73%	64%	55%	46%	37%	29%	22%	16%	12%	9%	6%	4%	3%	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°
1569	1540	1493	1389	1272	1128	982	832	686	542	422	309	231	162	119	83	62	45	34	26
100%	98%	95%	89%	81%	72%	63%	53%	44%	35%	27%	20%	15%	10%	8%	5%	4%	3%	2%	2%
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°
1569	1551	1491	1402	1283	1150	1006	863	720	585	458	348	256	187	134	98	70	52	39	29
100%	99%	95%	89%	82%	73%	64%	55%	46%	37%	29%	22%	16%	12%	9%	6%	4%	3%	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°
1569	1540	1493	1389	1272	1128	982	832	686	542	422	309	231	162	119	83	62	45	34	26
100%	98%	95%	89%	81%	72%	63%	53%	44%	35%	27%	20%	15%	10%	8%	5%	4%	3%	2%	2%
Beam angle 50%				Field angle 10%				Cutoff angle 2,5%				Intensity ratio in 120° cone				Intensity ratio in 90° cone			
29,7°				53,3°				{C_ANG}°				97,0%				94,9%			



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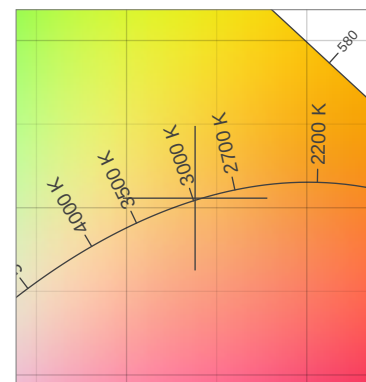
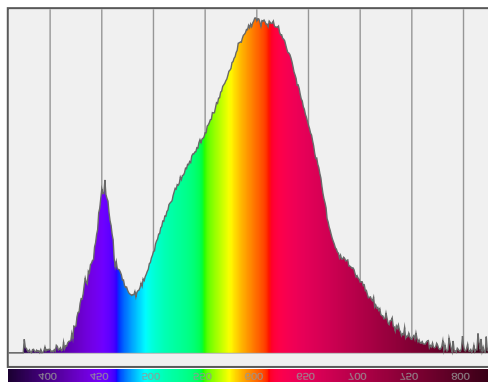
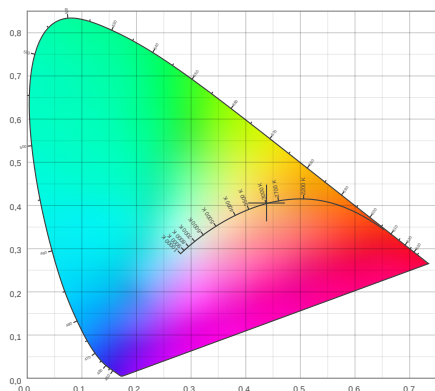
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Color details



CIE 1931

x: 0,438

2998 K

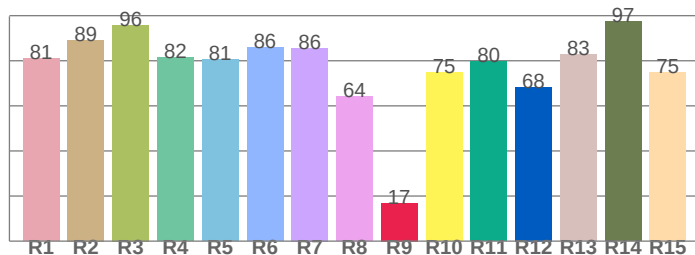
y: 0,406

Spectra

CIE 1931 ZOOM

Δuv : 0,0005

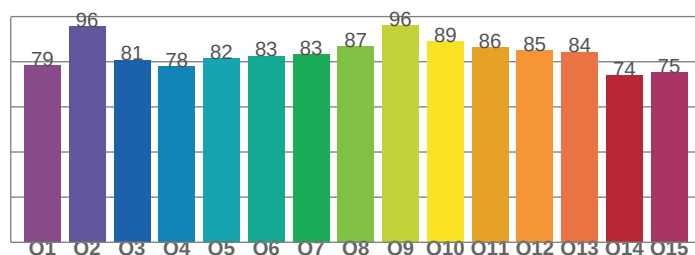
CRI: **83,0** (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
81,2	89,3	95,9	81,5	80,5	85,9	85,6	64,2
R9	R10	R11	R12	R13	R14	R15	
16,9	74,7	79,7	68,4	82,8	97,4	74,8	

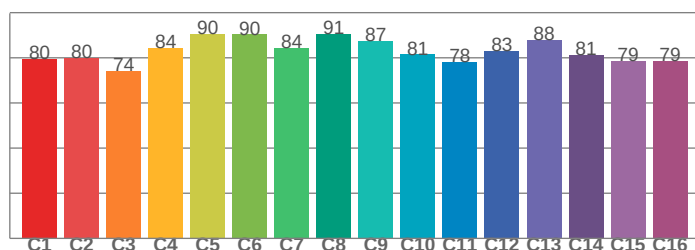
CQS: **82,6**



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
78,6	95,9	80,9	77,8	81,7	82,7	83,4	86,9
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,2	89,0	86,4	85,0	84,4	74,2	75,4	

TM30: **83,0**



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

C1	C2	C3	C4	C5	C6	C7	C8
79,6	79,9	74,3	84,2	90,5	90,4	84,5	90,7
C9	C10	C11	C12	C13	C14	C15	
87,4	81,5	78,0	82,9	88,0	81,1	78,7	

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
2998 K	83,0	16,9	83,0	97,3	82,6	0,438	0,406	0,251	0,348	0,0005



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TM30 details

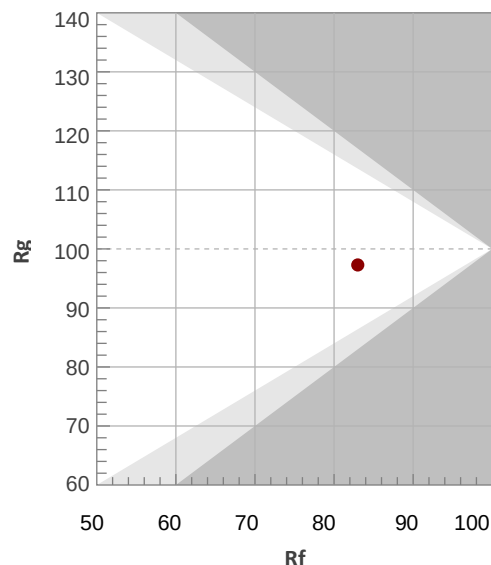
Rf 83,0

Fidelity index Rf

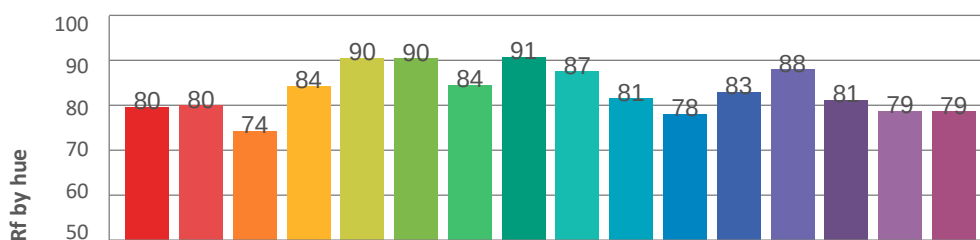
Rg 97,3

Gamut index Rg

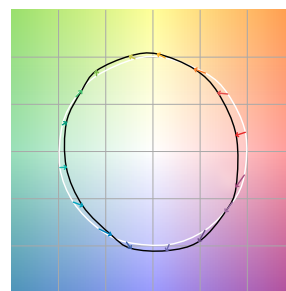
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	80	-10%	-1%
2	80	-8%	7%
3	74	-3%	12%
4	84	3%	9%
5	90	4%	5%
6	90	5%	-3%
7	84	-1%	-9%
8	91	-4%	-3%
9	87	-7%	1%
10	81	-6%	9%
11	78	-2%	14%
12	83	6%	6%
13	88	6%	-4%
14	81	6%	-12%
15	79	-1%	-12%
16	79	-6%	-14%



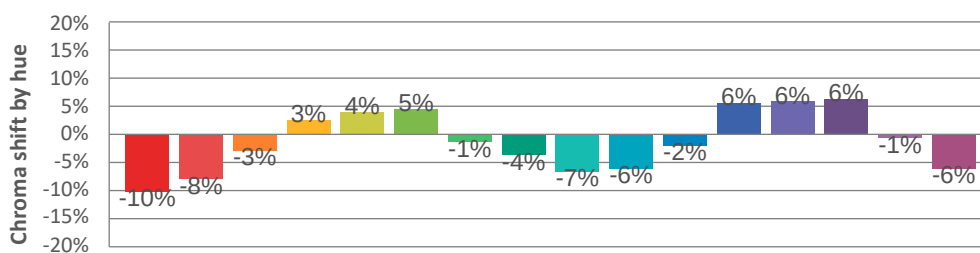
Hue binH



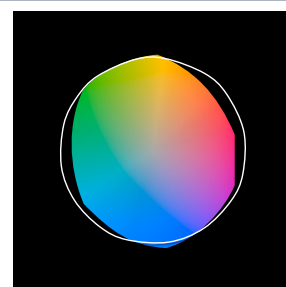
Color vector graphics



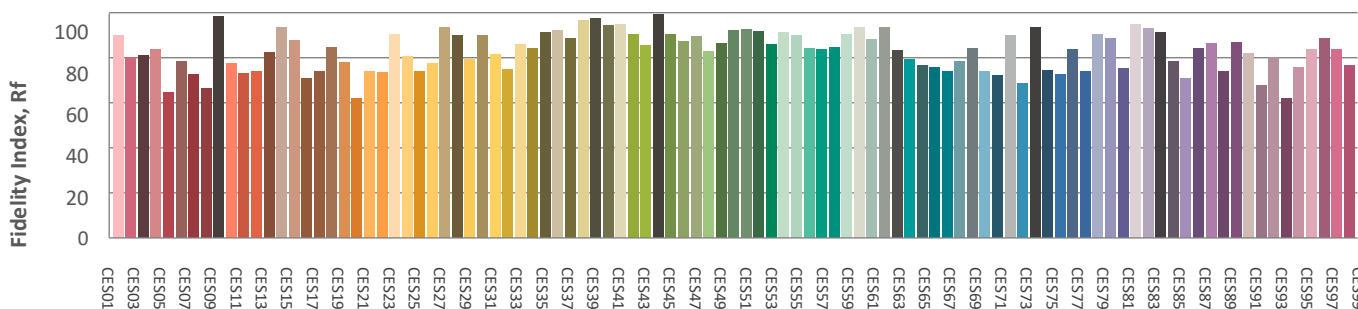
Hue bin



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	11,9	12,6	12,2	12,8	13,0	11,6	12,3	11,9	12,5	12,7
	3H	12,4	13,1	12,8	13,3	13,6	12,2	12,9	12,6	13,1	13,4
	4H	12,7	13,2	13,0	13,5	13,8	12,5	13,1	12,8	13,4	13,7
	6H	12,8	13,4	13,2	13,7	14,0	12,7	13,3	13,1	13,6	13,9
	8H	13,0	13,5	13,3	13,8	14,1	12,9	13,4	13,2	13,7	14,0
	12H	13,1	13,6	13,5	13,9	14,3	13,0	13,5	13,4	13,9	14,2
4H	2H	12,1	12,7	12,4	13,0	13,3	11,8	12,4	12,2	12,7	13,0
	3H	12,8	13,3	13,2	13,6	14,0	12,7	13,1	13,0	13,5	13,8
	4H	13,1	13,5	13,5	13,9	14,3	13,0	13,4	13,4	13,8	14,2
	6H	13,4	13,8	13,9	14,2	14,6	13,4	13,7	13,8	14,1	14,5
	8H	13,6	13,9	14,1	14,3	14,8	13,6	13,9	14,0	14,3	14,7
	12H	13,9	14,1	14,3	14,6	15,0	13,8	14,1	14,3	14,5	15,0
8H	4H	13,2	13,5	13,7	13,9	14,4	13,1	13,4	13,6	13,9	14,3
	6H	13,7	13,9	14,1	14,3	14,8	13,6	13,9	14,1	14,3	14,8
	8H	14,0	14,2	14,4	14,6	15,1	13,9	14,1	14,4	14,6	15,1
	12H	14,3	14,5	14,8	15,0	15,5	14,3	14,5	14,8	15,0	15,5
12H	4H	13,2	13,5	13,7	13,9	14,4	13,1	13,4	13,6	13,8	14,3
	6H	13,7	13,9	14,2	14,4	14,9	13,7	13,9	14,2	14,3	14,8
	8H	14,1	14,2	14,6	14,7	15,2	14,0	14,2	14,5	14,7	15,2

Variation of the observer position for the luminaire distance S

S = 1,0H	+1,9 / -1,0	+1,6 / -0,8
S = 1,5H	+3,7 / -1,3	+3,2 / -1,1
S = 2,0H	+5,3 / -1,9	+4,8 / -1,6
Standard table	BK03	BK04
Correction summand	-3,9	-3,6

Corrected glare indices referring to 497lm total luminous flux



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