

LM-79

Test Report

LM79-HYLO-COMPACT-SINGLE-3000K-CRI80- DEG48x13

General Discription

Item number	HC-X-X-03-03-2-2
Date and time	29-2-2016 16:11:20
CCT (Kelvin)	2999 K
Beam angle	30,5°
Luminous flux	780 lm
Efficiency	98 lm/watt
Weighted energy	8,0 kWh/1000h
Power factor	0,44
CRI (RA)	82,8
Fidelity index Rf	Rf 82,9
Gammut index Rg	Rg 97,1



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Beam details		1m	2m	3m	4m	5m
Lux*		2141 lx	535 lx	238 lx	134 lx	86 lx

30,5°

*measured at center of beam

Footcandles*	198,9 fcd	49,7 fcd	22,1 fcd	12,4 fcd	8,0 fcd
Beam width (meter)	0,5 m	1,1 m	1,6 m	2,2 m	2,7 m
Beam width (Feet)	1,8 ft	3,6 ft	5,4 ft	7,1 ft	8,9 ft

Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
2141lx	535lx	238lx	134lx	86lx	59lx	44lx	33lx	26lx	21lx	18lx	15lx	13lx	11lx	10lx	8lx	7lx	7lx	6lx	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
198,9fcd	49,7fcd	22,1fcd	12,4fcd	8fcd	5,5fcd	4,1fcd	3,1fcd	2,5fcd	2fcd	1,6fcd	1,4fcd	1,2fcd	1fcd	0,9fcd	0,8fcd	0,7fcd	0,6fcd	0,6fcd	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°
2141	1977	1624	1184	792	514	323	193	124	77	52	37	28	23	20	18	15	13	11	10
100%	92%	76%	55%	37%	24%	15%	9%	6%	4%	2%	2%	1%	1%	1%	1%	1%	1%	1%	0%

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°
2141	2132	2117	2060	1998	1918	1835	1748	1642	1524	1381	1231	1063	894	729	574	444	333	247	182
100%	100%	99%	96%	93%	90%	86%	82%	77%	71%	64%	57%	50%	42%	34%	27%	21%	16%	12%	8%

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°
2141	1977	1624	1184	792	514	323	193	124	77	52	37	28	23	20	18	15	13	11	10
100%	92%	76%	55%	37%	24%	15%	9%	6%	4%	2%	2%	1%	1%	1%	1%	1%	1%	1%	0%

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°
2141	2132	2117	2060	1998	1918	1835	1748	1642	1524	1381	1231	1063	894	729	574	444	333	247	182
100%	100%	99%	96%	93%	90%	86%	82%	77%	71%	64%	57%	50%	42%	34%	27%	21%	16%	12%	8%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
30,5°	50,5°	{C_ANG}°	98,0%	95,6%



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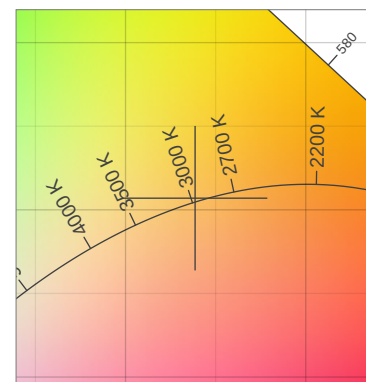
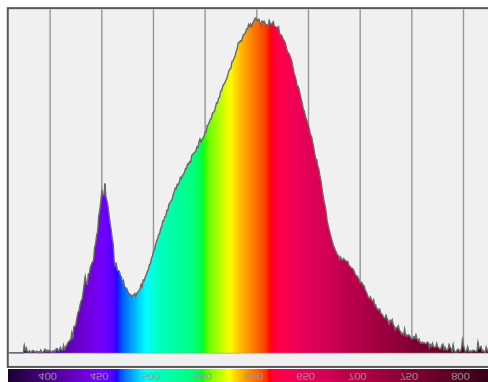
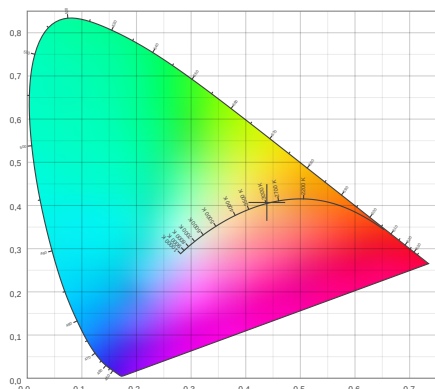
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Color details



CIE 1931

x: 0,439



Spectra

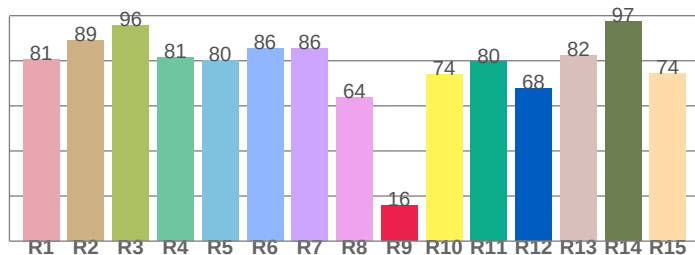
CIE 1931 ZOOM

2999 K

y: 0,407

Δuv : 0,0009

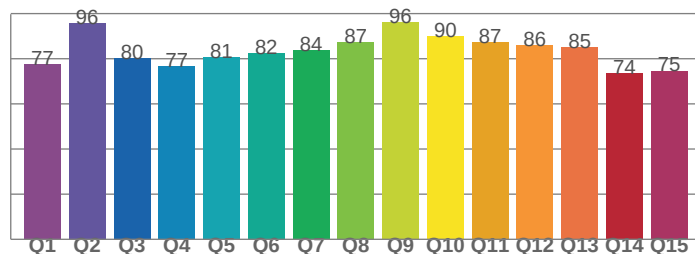
CRI: 82,8 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
80,8	89,0	95,8	81,3	80,2	85,6	85,6	63,8
R9	R10	R11	R12	R13	R14	R15	
15,8	74,1	79,5	67,7	82,4	97,3	74,4	

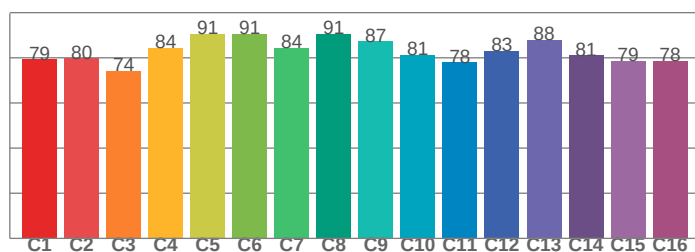
CQS: 82,3



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
77,4	95,7	80,4	76,6	80,8	82,4	83,7	87,4
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,1	89,8	87,3	85,8	84,9	73,6	74,7	

TM30: 82,9



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

C1	C2	C3	C4	C5	C6	C7	C8
79,3	79,7	74,3	84,3	90,5	90,5	84,4	90,6
C9	C10	C11	C12	C13	C14	C15	
87,3	81,3	77,9	82,9	88,0	81,1	78,6	

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
2999 K	82,8	15,8	82,9	97,1	82,3	0,439	0,407	0,250	0,349	0,0009



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TM30 details

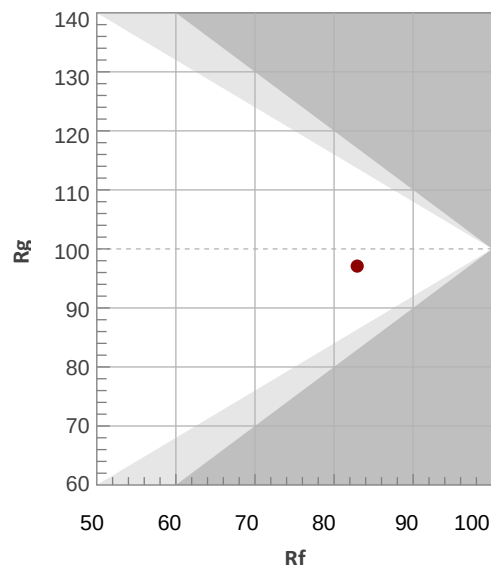
Rf 82,9

Fidelity index Rf

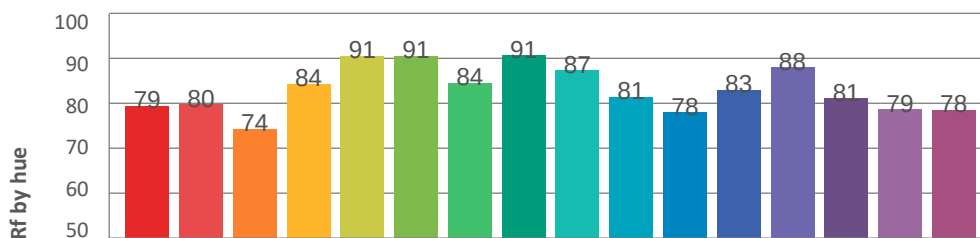
Rg 97,1

Gamut index Rg

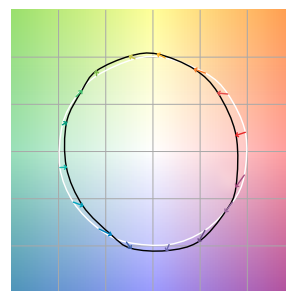
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	79	-10%	-1%
2	80	-8%	7%
3	74	-3%	12%
4	84	2%	9%
5	91	4%	5%
6	91	4%	-3%
7	84	-1%	-9%
8	91	-4%	-3%
9	87	-7%	1%
10	81	-6%	9%
11	78	-2%	14%
12	83	5%	6%
13	88	6%	-4%
14	81	6%	-12%
15	79	-1%	-12%
16	78	-6%	-14%



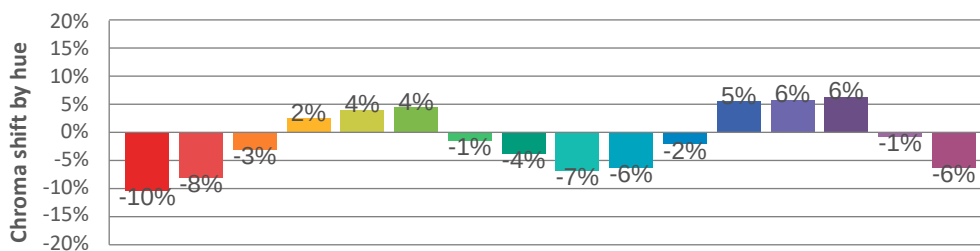
Hue binH



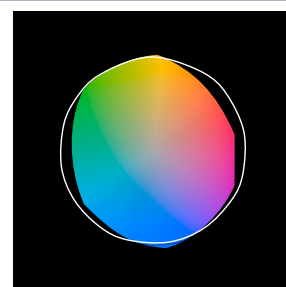
Color vector graphics



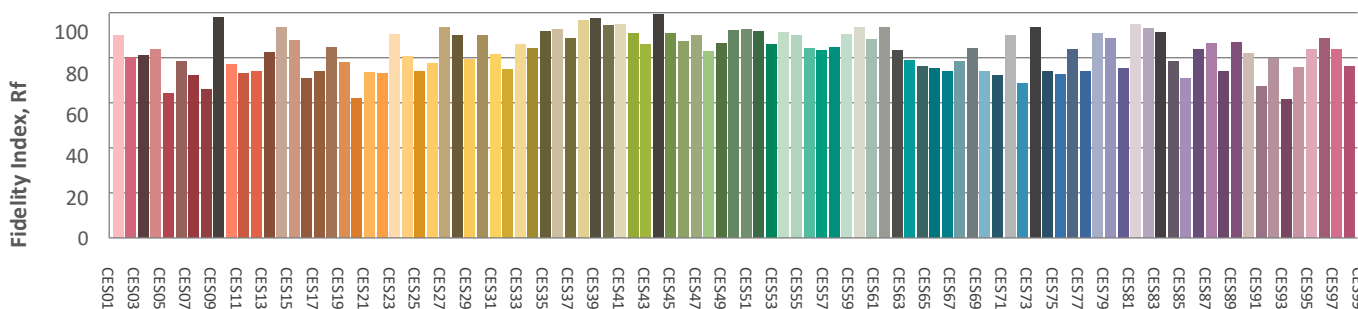
Hue bin



Color distortion graphics



Color Evaluation Sample



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DEG48x13

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	12,8	13,4	13,0	13,7	13,9	20,0	20,7	20,3	20,9	21,1
	3H	13,0	13,6	13,3	13,8	14,1	20,0	20,6	20,3	20,9	21,1
	4H	13,0	13,6	13,3	13,9	14,2	20,0	20,6	20,3	20,8	21,1
	6H	13,1	13,6	13,4	13,9	14,2	19,9	20,5	20,3	20,8	21,1
	8H	13,2	13,7	13,5	14,0	14,3	19,9	20,4	20,3	20,7	21,0
	12H	13,3	13,8	13,6	14,1	14,4	19,9	20,4	20,3	20,7	21,0
4H	2H	12,8	13,4	13,2	13,7	14,0	19,9	20,5	20,2	20,7	21,0
	3H	13,2	13,7	13,5	14,0	14,3	19,8	20,3	20,2	20,6	21,0
	4H	13,3	13,7	13,7	14,1	14,5	19,8	20,3	20,2	20,6	21,0
	6H	13,5	13,8	13,9	14,2	14,6	19,8	20,2	20,2	20,5	20,9
	8H	13,6	13,9	14,0	14,3	14,7	19,8	20,1	20,2	20,5	20,9
	12H	13,8	14,1	14,2	14,5	14,9	19,8	20,1	20,3	20,5	20,9
8H	4H	13,4	13,7	13,8	14,1	14,5	19,7	20,1	20,2	20,5	20,9
	6H	13,6	13,9	14,1	14,3	14,8	19,7	20,0	20,2	20,4	20,9
	8H	13,8	14,0	14,3	14,5	15,0	19,8	20,0	20,2	20,4	20,9
	12H	14,2	14,3	14,7	14,8	15,3	19,8	19,9	20,3	20,4	20,9
12H	4H	13,4	13,7	13,8	14,1	14,5	19,7	20,0	20,2	20,4	20,8
	6H	13,7	13,9	14,2	14,3	14,8	19,7	19,9	20,2	20,4	20,8
	8H	13,9	14,1	14,4	14,6	15,1	19,7	19,9	20,2	20,4	20,9
Variation of the observer position for the luminaire distance S											
S = 1,0H		+3,3 / -2,0					+5,1 / -5,8				
S = 1,5H		+4,8 / -2,6					+7,9 / -6,4				
S = 2,0H		+6,6 / -2,9					+9,8 / -7,2				
Standard table		BK02					BK00				
Correction summand		-4,1					1,6				
Corrected glare indices referring to 780lm total luminous flux											



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