

LM-79

Test Report

LM79-HYLO-COMPACT-UPANDDOWN-3000K-CRI80-DEG11

General Discription

Item number	HC-1-X-03-03-5-5
Date and time	29-2-2016 16:06:07
CCT (Kelvin)	2972 K
Beam angle	11,3°
Luminous flux	527 lm
Efficiency	66 lm/watt
Weighted energy	8,0 kWh/1000h
Power factor	0,44
CRI (RA)	82,6
Fidelity index Rf	Rf 82,8
Gammut index Rg	Rg 96,9



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Beam details	1m	2m	3m	4m	5m
Lux*	9761 lx	2440 lx	1085 lx	610 lx	390 lx

11,3°

*measured at center of beam

Footcandles*	906,8 fcd	226,7 fcd	100,8 fcd	56,7 fcd	36,3 fcd
Beam width (meter)	0,2 m	0,4 m	0,6 m	0,8 m	1 m
Beam width (Feet)	0,6 ft	1,3 ft	1,9 ft	2,6 ft	3,2 ft

Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
9761lx	2440lx	1085lx	610lx	390lx	271lx	199lx	153lx	121lx	98lx	81lx	68lx	58lx	50lx	43lx	38lx	34lx	30lx	27lx	24lx
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
906,8fcd	226,7fcd	100,8fcd	56,7fcd	36,3fcd	25,2fcd	18,5fcd	14,2fcd	11,2fcd	9,1fcd	7,5fcd	6,3fcd	5,4fcd	4,6fcd	4fcd	3,5fcd	3,1fcd	2,8fcd	2,5fcd	2,3fcd

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°
9761	9499	8780	8061	6825	5598	4389	3268	2394	1861	1329	931	675	512	348	250	186	137	96	81
100%	97%	90%	83%	70%	57%	45%	33%	25%	19%	14%	10%	7%	5%	4%	3%	2%	1%	1%	1%

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°
9761	9706	8931	8070	6948	5764	4479	3421	2544	1921	1408	1035	684	531	389	288	204	154	119	99
100%	99%	92%	83%	71%	59%	46%	35%	26%	20%	14%	11%	7%	5%	4%	3%	2%	2%	1%	1%

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°
9761	9499	8780	8061	6825	5598	4389	3268	2394	1861	1329	931	675	512	348	250	186	137	96	81
100%	97%	90%	83%	70%	57%	45%	33%	25%	19%	14%	10%	7%	5%	4%	3%	2%	1%	1%	1%

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°
9761	9706	8931	8070	6948	5764	4479	3421	2544	1921	1408	1035	684	531	389	288	204	154	119	99
100%	99%	92%	83%	71%	59%	46%	35%	26%	20%	14%	11%	7%	5%	4%	3%	2%	2%	1%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
11,3°	22,1°	{C_ANG}°	97,8%	97,0%



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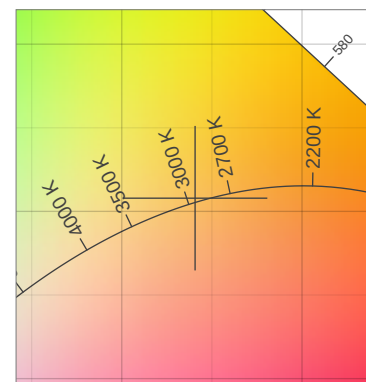
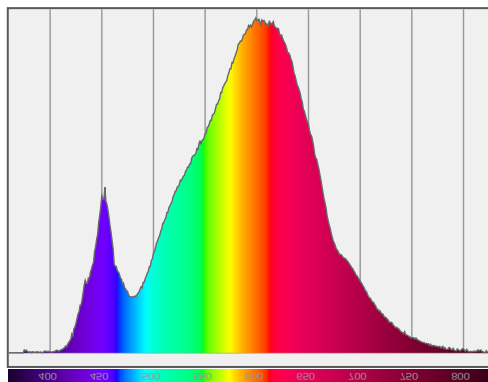
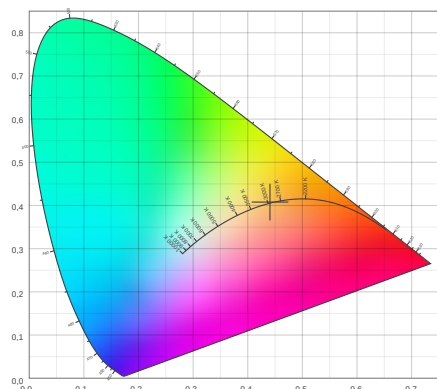
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Color details



CIE 1931

x: 0,441

2972 K

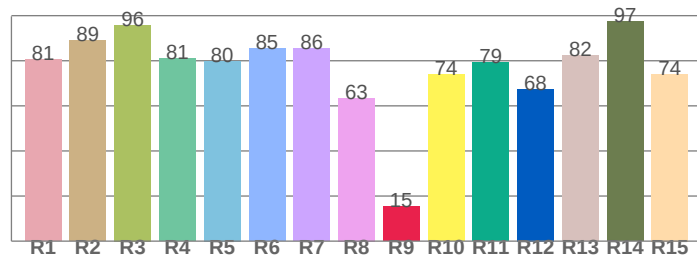
y: 0,408

Spectra

CIE 1931 ZOOM

Δuv : 0,0010

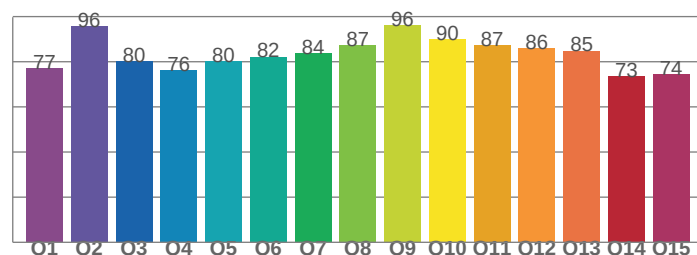
CRI: 82,6 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
80,6	88,9	95,8	81,1	79,9	85,4	85,5	63,5
R9	R10	R11	R12	R13	R14	R15	
15,2	73,9	79,2	67,5	82,2	97,4	74,1	

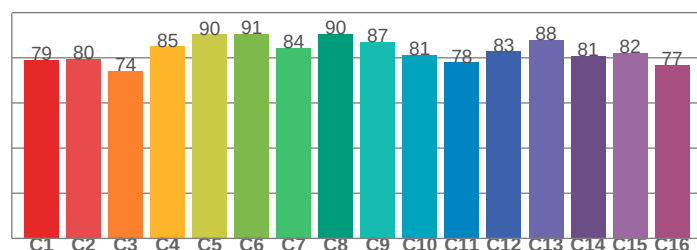
CQS: 82,1



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
77,0	95,6	80,3	76,1	80,4	82,2	83,6	87,4
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,0	90,0	87,4	85,9	84,9	73,4	74,3	

TM30: 82,8



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

C1	C2	C3	C4	C5	C6	C7	C8
79,2	79,6	74,1	85,0	90,3	90,5	84,2	90,5
C9	C10	C11	C12	C13	C14	C15	
87,1	81,2	77,9	82,9	87,9	81,0	82,2	

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
2972 K	82,6	15,2	82,8	96,9	82,1	0,441	0,408	0,251	0,349	0,0010



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TM30 details

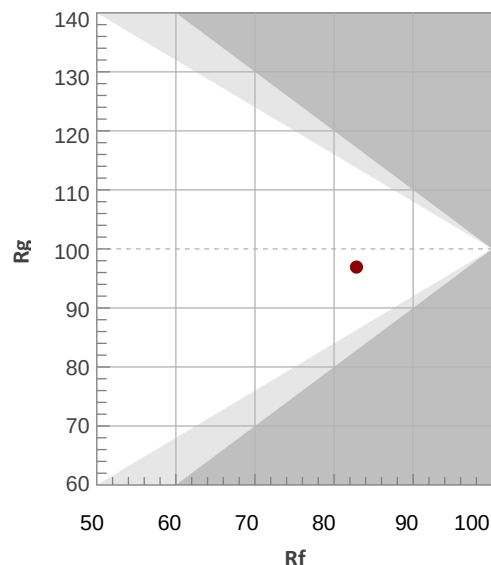
Rf 82,8

Fidelity index Rf

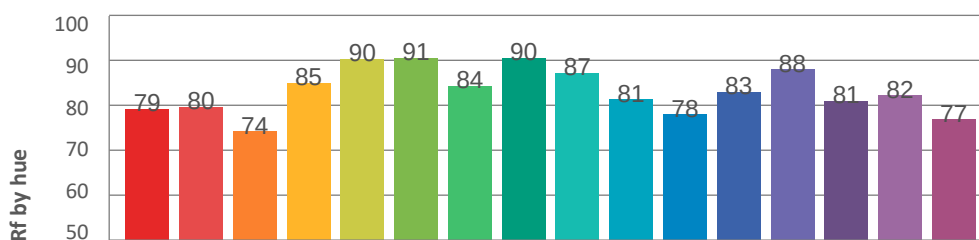
Rg 96,9

Gamut index Rg

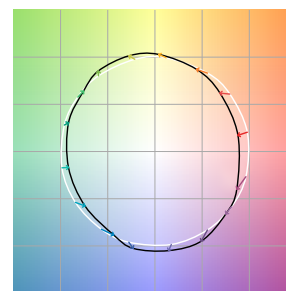
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	79	-10%	-1%
2	80	-8%	7%
3	74	-3%	12%
4	85	2%	8%
5	90	5%	5%
6	91	4%	-3%
7	84	-2%	-9%
8	90	-4%	-3%
9	87	-7%	1%
10	81	-6%	9%
11	78	-2%	14%
12	83	5%	6%
13	88	6%	-4%
14	81	6%	-12%
15	82	-1%	-10%
16	77	-7%	-15%



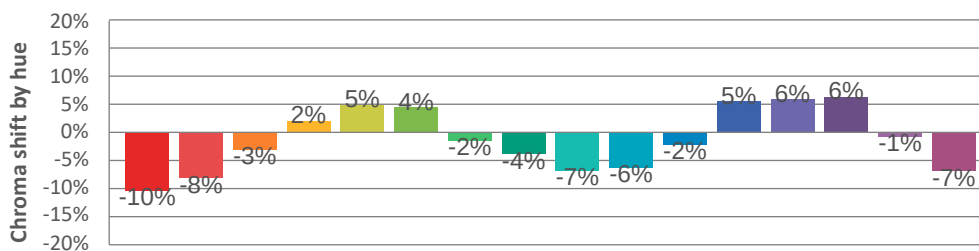
Hue binH



Color vector graphics



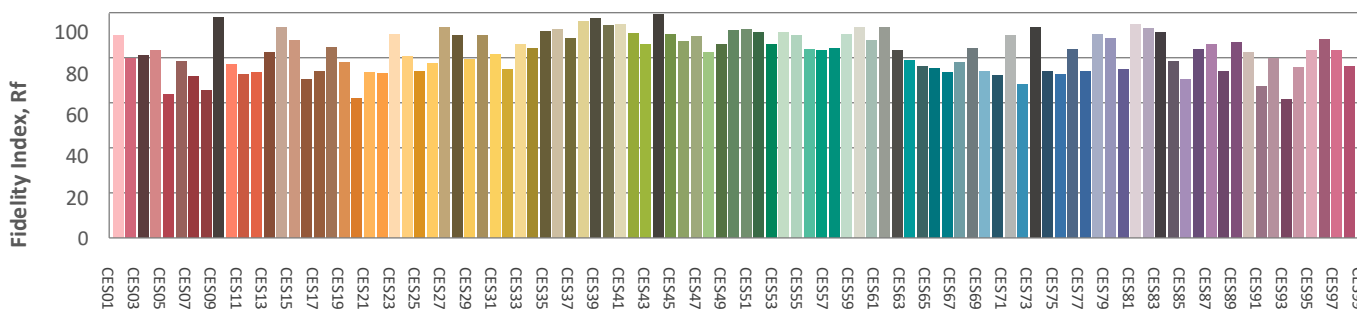
Hue bin



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	4,3	4,9	4,6	5,2	5,4	4,0	4,6	4,2	4,8	5,0
	3H	5,9	6,5	6,2	6,7	7,0	5,1	5,7	5,4	5,9	6,2
	4H	6,4	7,0	6,8	7,3	7,6	5,9	6,4	6,2	6,7	7,0
	6H	7,6	8,2	8,0	8,5	8,8	7,3	7,8	7,6	8,1	8,4
	8H	8,3	8,8	8,7	9,1	9,4	7,8	8,3	8,1	8,6	8,9
	12H	8,7	9,2	9,1	9,5	9,8	8,5	9,0	8,9	9,3	9,7
4H	2H	4,8	5,3	5,1	5,6	5,9	4,5	5,1	4,8	5,3	5,6
	3H	6,6	7,0	6,9	7,4	7,7	5,9	6,4	6,3	6,7	7,0
	4H	7,3	7,7	7,7	8,1	8,5	6,9	7,3	7,3	7,7	8,0
	6H	8,9	9,2	9,3	9,6	10,0	8,6	8,9	9,0	9,3	9,7
	8H	9,7	10,0	10,1	10,4	10,8	9,2	9,5	9,7	9,9	10,4
	12H	10,2	10,4	10,6	10,8	11,3	10,1	10,4	10,6	10,8	11,2
8H	4H	7,8	8,1	8,3	8,5	8,9	7,5	7,8	7,9	8,2	8,6
	6H	9,7	9,9	10,2	10,3	10,8	9,4	9,7	9,9	10,1	10,6
	8H	10,6	10,8	11,1	11,3	11,8	10,2	10,4	10,7	10,9	11,4
	12H	11,2	11,4	11,7	11,9	12,4	11,3	11,4	11,8	11,9	12,4
12H	4H	8,0	8,2	8,4	8,6	9,1	7,7	7,9	8,1	8,3	8,8
	6H	9,9	10,1	10,4	10,5	11,0	9,7	9,8	10,2	10,3	10,8
	8H	10,9	11,0	11,4	11,5	12,0	10,6	10,7	11,1	11,2	11,7

Variation of the observer position for the luminaire distance S

S = 1,0H	+0,1 / -0,1	+0,2 / -0,2
S = 1,5H	+0,3 / -0,4	+0,4 / -0,4
S = 2,0H	+0,7 / -0,4	+0,8 / -0,6
Standard table	BK08	BK09
Correction summand	-7,0	-6,7

Corrected glare indices referring to 527lm total luminous flux



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