

LM-79

Test Report

LM79_ULTIMA_3000K_CRI80_12x46DEG

General Discription

Item number	U-X-X-X-02-2
Date and time	17-2-2017 14:33:14
CCT (Kelvin)	2936 K
Beam angle	30,5°
Luminous flux	2600 lm
Efficiency	144 lm/watt
Weighted energy	18,0 kWh/1000h
Power factor	0,9
CRI (RA)	83,8
Fidelity index Rf	Rf 84,3
Gammut index Rg	Rg 97,3



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Beam details	1m	2m	3m	4m	5m
Lux*	7384 lx	1846 lx	820 lx	461 lx	295 lx

30,5°

*measured at center of beam

Footcandles*	686,0 fcd	171,5 fcd	76,2 fcd	42,9 fcd	27,4 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
7384lx	1846lx	820lx	461lx	295lx	205lx	151lx	115lx	91lx	74lx	61lx	51lx	44lx	38lx	33lx	29lx	26lx	23lx	20lx	18lx
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
686fcd	171,5fcd	76,2fcd	42,9fcd	27,4fcd	19,1fcd	14fcd	10,7fcd	8,5fcd	6,9fcd	5,7fcd	4,8fcd	4,1fcd	3,5fcd	3fcd	2,7fcd	2,4fcd	2,1fcd	1,9fcd	1,7fcd

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°
7384	7384	6197	4697	3327	2379	1431	950	592	317	232	147	113	92	75	66	56	49	42	37
100%	100%	84%	64%	45%	32%	19%	13%	8%	4%	3%	2%	2%	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°
7384	7382	7341	7175	6988	6720	6391	5967	5489	4999	4487	3972	3416	2830	2252	1790	1342	986	738	497
100%	100%	99%	97%	95%	91%	87%	81%	74%	68%	61%	54%	46%	38%	30%	24%	18%	13%	10%	7%

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°
7384	7384	6197	4697	3327	2379	1431	950	592	317	232	147	113	92	75	66	56	49	42	37
100%	100%	84%	64%	45%	32%	19%	13%	8%	4%	3%	2%	2%	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°
7384	7382	7341	7175	6988	6720	6391	5967	5489	4999	4487	3972	3416	2830	2252	1790	1342	986	738	497
100%	100%	99%	97%	95%	91%	87%	81%	74%	68%	61%	54%	46%	38%	30%	24%	18%	13%	10%	7%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
30,5°	51,2°	{C_ANG}°	96,7%	95,1%



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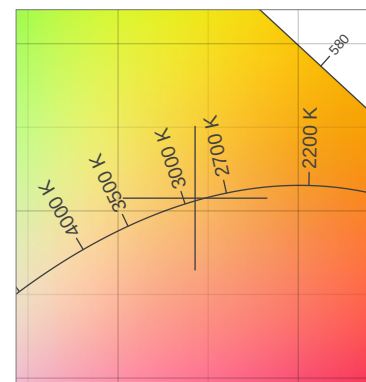
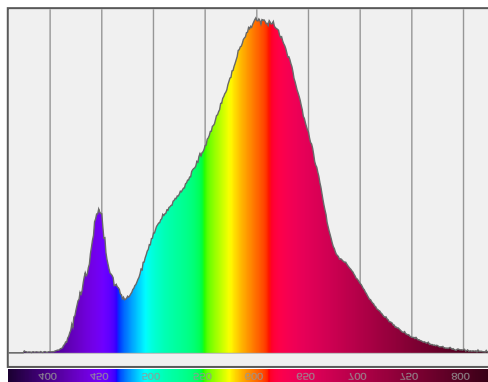
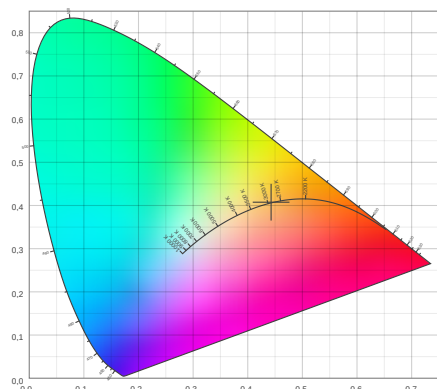
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Color details



CIE 1931

x: 0,443

2936 K

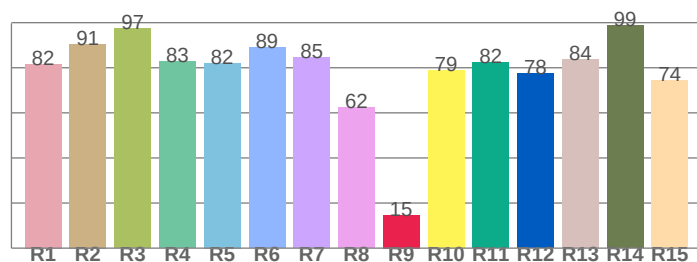
y: 0,408

Spectra

CIE 1931 ZOOM

Δuv : 0,0006

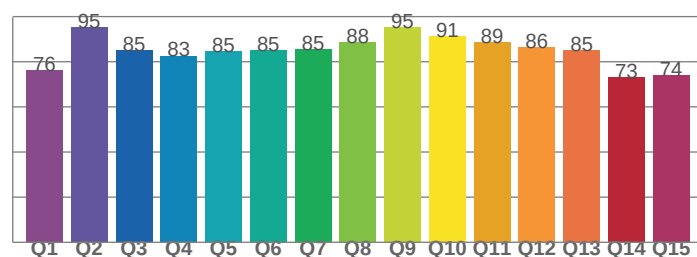
CRI: 83,8 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8
81,7	90,5	97,5	82,8	82,1	89,0	84,6	62,5
R9	R10	R11	R12	R13	R14	R15	
14,7	79,0	82,4	77,6	83,5	98,8	74,3	

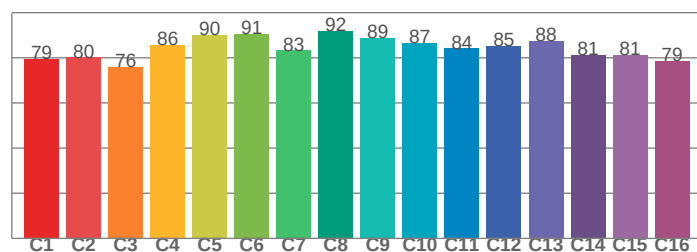
CQS: 83,7



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
76,3	95,3	85,2	82,6	84,8	85,1	85,4	88,5
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
95,4	91,2	88,6	86,3	84,9	73,3	74,1	

TM30: 84,3



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

C1	C2	C3	C4	C5	C6	C7	C8
79,5	80,2	76,0	85,7	90,1	90,7	83,3	92,0
C9	C10	C11	C12	C13	C14	C15	
88,7	86,6	84,2	85,4	87,6	81,3	81,2	

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
2936 K	83,8	14,7	84,3	97,3	83,7	0,443	0,408	0,253	0,349	0,0006



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TM30 details

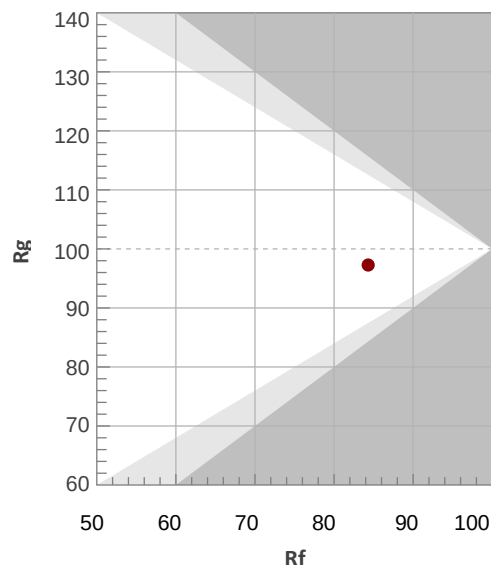
Rf 84,3

Fidelity index Rf

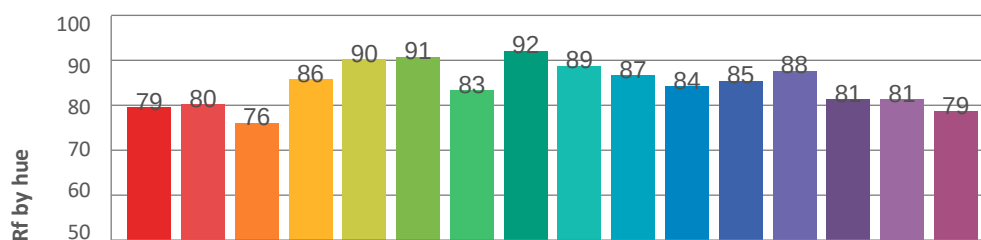
Rg 97,3

Gamut index Rg

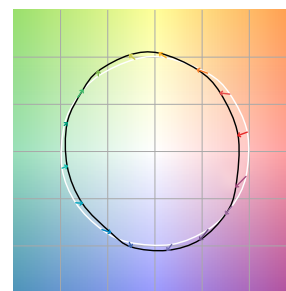
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	79	-10%	-2%
2	80	-8%	7%
3	76	-3%	11%
4	86	3%	8%
5	90	6%	5%
6	91	4%	-3%
7	83	0%	-10%
8	92	-3%	-3%
9	89	-6%	-1%
10	87	-6%	4%
11	84	-3%	9%
12	85	4%	3%
13	88	5%	-6%
14	81	4%	-13%
15	81	-1%	-10%
16	79	-8%	-13%



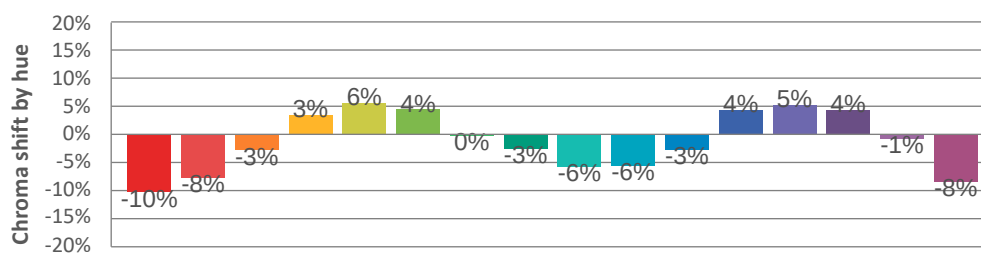
Hue binH



Color vector graphics



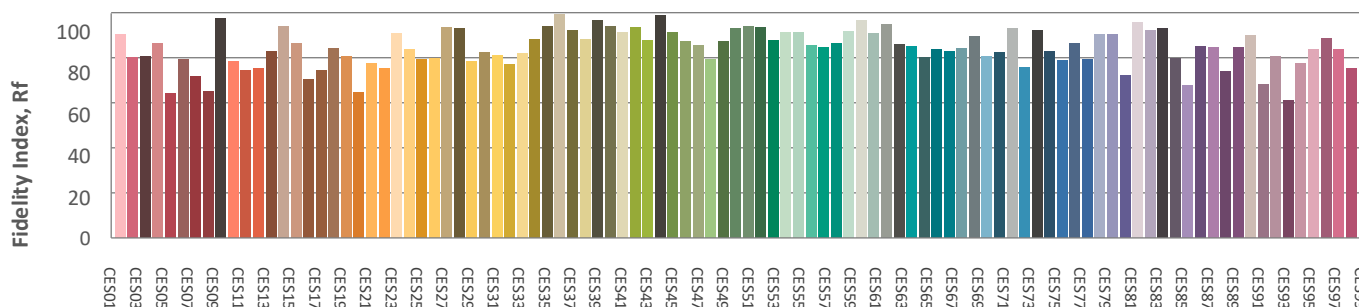
Hue bin



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	9,6	10,3	9,9	10,5	10,8	17,0	17,7	17,3	17,9	18,2
	3H	9,6	10,2	9,9	10,5	10,8	16,9	17,5	17,2	17,8	18,1
	4H	9,6	10,2	9,9	10,5	10,8	16,8	17,4	17,2	17,7	18,0
	6H	9,7	10,3	10,1	10,6	10,9	16,8	17,3	17,2	17,7	18,0
	8H	10,1	10,6	10,5	10,9	11,3	16,8	17,3	17,2	17,7	18,0
	12H	10,7	11,2	11,1	11,5	11,9	16,9	17,4	17,3	17,8	18,1
4H	2H	9,5	10,1	9,9	10,4	10,7	16,8	17,4	17,2	17,7	18,0
	3H	9,6	10,0	10,0	10,4	10,7	16,7	17,2	17,1	17,5	17,9
	4H	9,6	10,0	10,0	10,4	10,8	16,6	17,0	17,0	17,4	17,8
	6H	9,9	10,3	10,4	10,7	11,1	16,6	17,0	17,1	17,4	17,8
	8H	10,5	10,8	11,0	11,3	11,7	16,7	17,0	17,2	17,5	17,9
	12H	11,5	11,7	11,9	12,2	12,6	17,0	17,2	17,4	17,7	18,1
8H	4H	9,6	9,9	10,1	10,3	10,8	16,5	16,8	17,0	17,3	17,7
	6H	10,2	10,4	10,7	10,9	11,4	16,6	16,8	17,1	17,3	17,8
	8H	11,1	11,3	11,6	11,8	12,3	16,7	16,9	17,3	17,4	17,9
	12H	12,4	12,6	13,0	13,1	13,6	17,1	17,3	17,7	17,8	18,3
12H	4H	9,7	9,9	10,1	10,4	10,8	16,5	16,8	17,0	17,2	17,7
	6H	10,4	10,6	10,9	11,1	11,6	16,6	16,8	17,1	17,2	17,8
	8H	11,5	11,6	12,0	12,1	12,7	16,8	16,9	17,3	17,4	18,0

Variation of the observer position for the luminaire distance S

S = 1,0H	+2,6 / -1,3	+5,1 / -4,8
S = 1,5H	+4,1 / -1,8	+7,8 / -5,5
S = 2,0H	+6,0 / -2,3	+9,9 / -6,2
Standard table	---	BK01
Correction summand	---	-1,0

Corrected glare indices referring to 2600lm total luminous flux

