

Lightsource Test Report

Product Information

Product Category: LED-Lampen
 Product Spec: LED-AR111-12-NW-M-160
 Manufacturer: METOLIGHT
 Buyer: 2320

Product Type: LED-Lampen-AR111
 Product Number: 1
 Submitted Unit: 102003

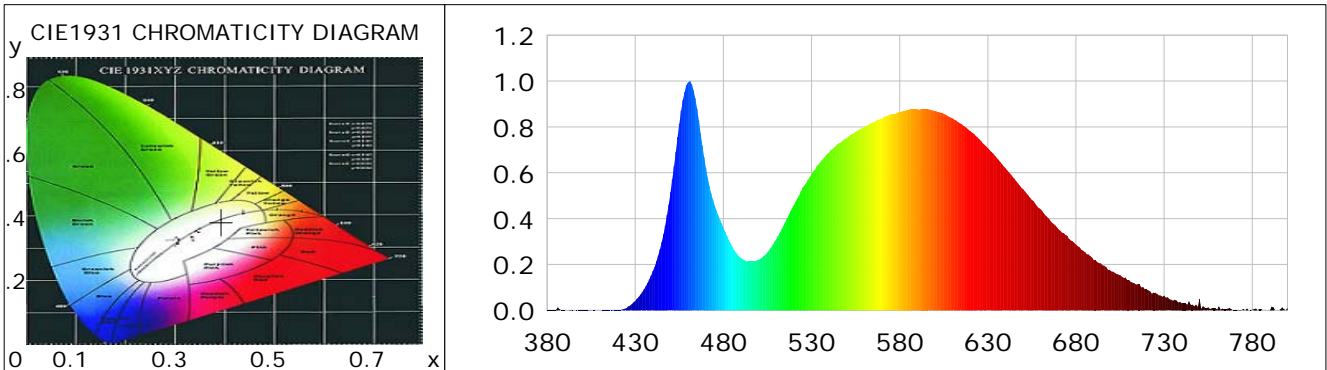
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3933$ $y=0.3822$ $u(u')=0.2313$ $v=0.3373$ $v'=0.5059$
 CCT: $T_c=3710K$ ($duv=-0.00097$) Color Ratio: $R=0.191$ $G=0.773$ $B=0.036$
 Peak Wavelength: 460.8nm Half Bandwidth: 23.7nm
 Dominant Wavelength: 580.6nm Color Purity: 0.328
 CRI: $R_a=80.2$, $avgR(1\sim14)=72.8$, $avgR(1\sim15)=73.0$ TM30: $R_f=78$, $R_g=91$
 GAI: $GAI_BB_8=90.8$, $GAI_BB_15=100.7$, $GAI_EES=67.0$

R1 = 79	R2 = 90	R3 = 94	R4 = 73	R5 = 76	R6 = 82	R7 = 84	R8 = 64
R9 = 12	R10 = 71	R11 = 66	R12 = 51	R13 = 82	R14 = 96	R15 = 76	

Color Quality Scale: $Q_a=77.8$, $Q_f=78.1$, $Q_p=77.3$, $Q_g=90.2$

Q1 = 81	Q2 = 97	Q3 = 75	Q4 = 63	Q5 = 68	Q6 = 71	Q7 = 78	Q8 = 85
Q9 = 96	Q10 = 86	Q11 = 80	Q12 = 80	Q13 = 81	Q14 = 74	Q15 = 77	



Photometric Parameters

Luminous Flux: 769.52 lm	Efficiency: 59.70 lm/W	Radiant Power: 2.367 W
Total mains efficacy: 65.01 lm/W	Energy Efficiency Class: G (EU 2019/2015)	
Pupil Flux: 1097.10 Plm	Pupil Lumens Per Watt: 85.11 Plm/W	Pupil Factor (Kp): 1.426
Cirtpic Flux: 2199.24 lm		

Electric Parameters

Voltage: 10.150V	Current: 1.3700A	Power: 12.89W
Power Factor: 0.8440	Frequency: 49.99Hz	

Test Information

Scan Range: 380~800:1nm	Photometric Method: sphere-spectroradiometer
Stabilization Time: 0 ms ALC.: 1.0000	Photometric Condition: Sphere diameter: 2.00m, 4PI
Max of Signal: 46217 (3034)	CCD Integration Time: 531.05 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0007	0.0112	525	0.5363	8.1743	670	0.3541	5.3983
385	0.0025	0.0378	530	0.5939	9.0536	675	0.3254	4.9604
390	0.0012	0.0185	535	0.6465	9.8549	680	0.2872	4.3779
395	0.0003	0.0049	540	0.6889	10.5003	685	0.2547	3.8819
400	0.0017	0.0255	545	0.7260	11.0670	690	0.2197	3.3489
405	0.0003	0.0041	550	0.7518	11.4603	695	0.1965	2.9958
410	0.0004	0.0057	555	0.7787	11.8706	700	0.1700	2.5911
415	0.0015	0.0224	560	0.8012	12.2126	705	0.1536	2.3407
420	0.0031	0.0479	565	0.8210	12.5140	710	0.1321	2.0137
425	0.0096	0.1463	570	0.8369	12.7564	715	0.1140	1.7371
430	0.0410	0.6255	575	0.8550	13.0323	720	0.0921	1.4032
435	0.0921	1.4035	580	0.8669	13.2137	725	0.0768	1.1714
440	0.1711	2.6080	585	0.8731	13.3093	730	0.0640	0.9754
445	0.2982	4.5453	590	0.8771	13.3703	735	0.0426	0.6486
450	0.5155	7.8571	595	0.8776	13.3769	740	0.0310	0.4725
455	0.8143	12.4124	600	0.8692	13.2499	745	0.0255	0.3893
460	0.9942	15.1550	605	0.8569	13.0625	750	0.0497	0.7569
465	0.8808	13.4260	610	0.8374	12.7640	755	0.0128	0.1954
470	0.6227	9.4920	615	0.8130	12.3929	760	0.0037	0.0567
475	0.4577	6.9763	620	0.7820	11.9197	765	0.0060	0.0910
480	0.3599	5.4857	625	0.7471	11.3889	770	0.0016	0.0245
485	0.2785	4.2450	630	0.7068	10.7742	775	0.0054	0.0822
490	0.2287	3.4858	635	0.6647	10.1329	780	0.0040	0.0613
495	0.2132	3.2496	640	0.6196	9.4450	785	0.0052	0.0798
500	0.2205	3.3607	645	0.5748	8.7614	790	0.0000	0.0001
505	0.2538	3.8686	650	0.5282	8.0522	795	0.0005	0.0080
510	0.3107	4.7355	655	0.4813	7.3359	800	0.0125	0.1907
515	0.3843	5.8581	660	0.4410	6.7223			
520	0.4600	7.0114	665	0.3961	6.0379			

Condition: Tx:0.0°C, Ti:0.0°C, R.H.:60%
 Test Lab:
 Operator: CRE

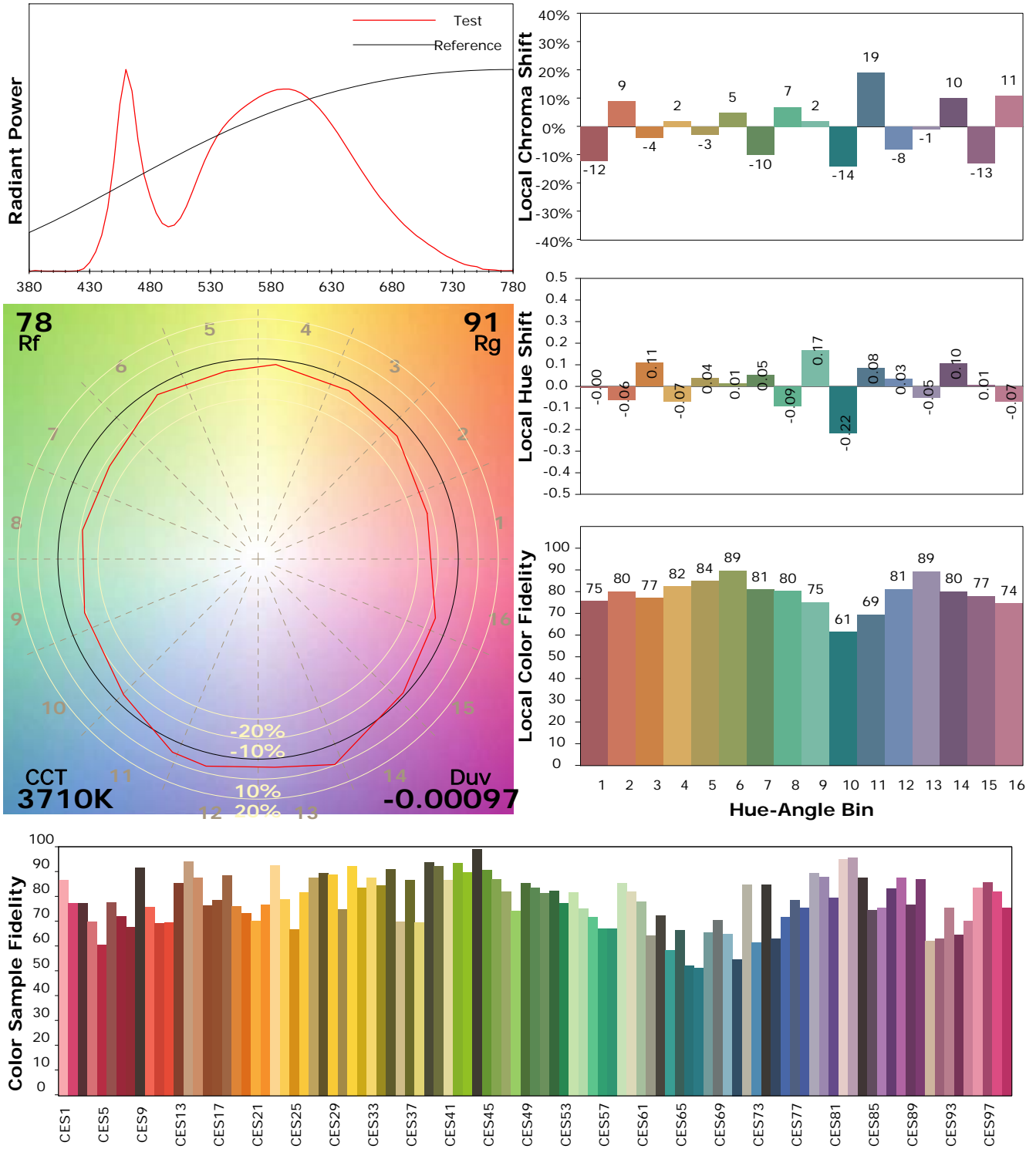
Test Device: Lisun LMS-9000B
 Test Time: 2021-08-17 11:00:51
 Inspector:

IES TM-30-18 Color Rendition Report

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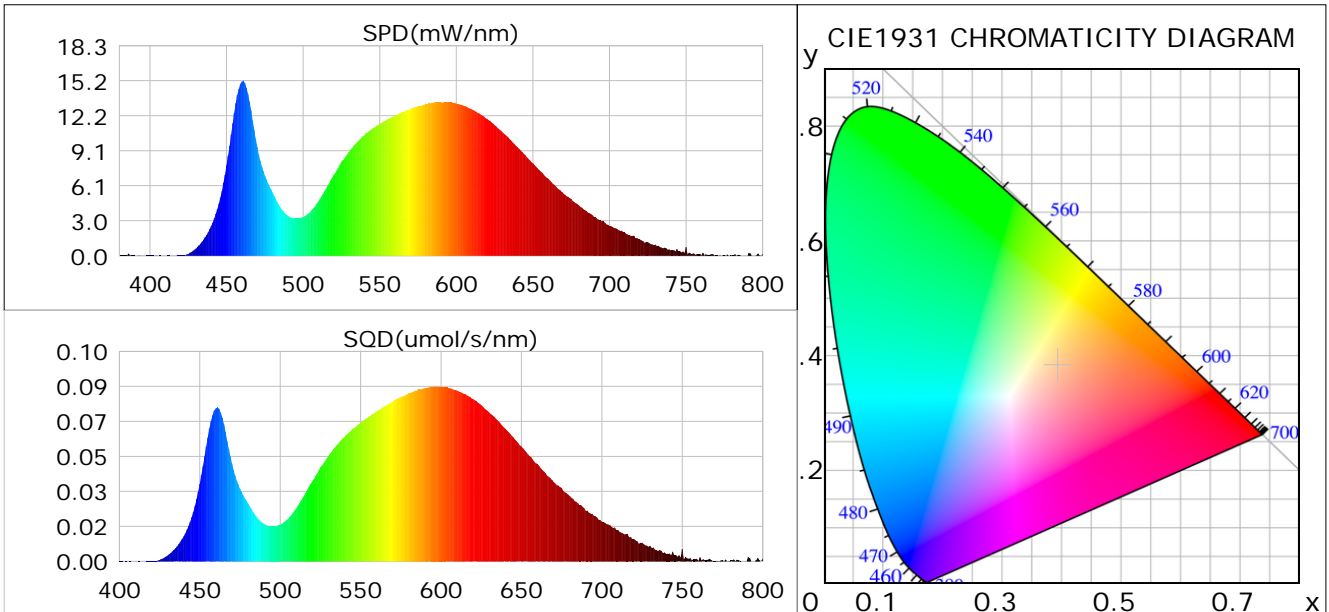
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%
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 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-08-17 11:00:51
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Plant optical param data

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 Dominant Wavelength: 580.6nm Color Purity: 0.328
 CRI: $R_a=80.2$



Plant Optical Param

$ \mu_v(lm): 769.52$	$Q_v(lm.s): 769.52$
$ \mu_e, \dot{E}(W/nm): 2.37$	$Q_e(J): 2.37$
$ \mu_e(W): 2.30$	$ \mu_{fr}(W): 0.07$
$ \dot{C}_e: 0.18$	$ \dot{C}_{fr}: 0.01$
$PPE(\mu mol/s/w): 0.85$	$K_{fr}: 0.03$
$Erb_Ratio: 1.72$	$PPF(\mu mol/s): 10.92$
$PF_{uv}(360-400)(\mu mol/s): 0.00$	$PPF(400-500)(\mu mol/s): 1.81$
$PPF(500-600)(\mu mol/s): 4.82$	$PPF(600-700)(\mu mol/s): 4.28$
$PPF_{fr}(700-800)(\mu mol/s): 0.40$	$PPF.t(\mu mol): 10.92$
$ \mu_{ch-A.t}(J): 0.18$	$ \mu_{ch-A}(W): 0.18$
$ \mu_{ch-B.t}(J): 0.11$	$ \mu_{ch-B}(W): 0.11$
$ \mu_b.t(J): 0.47$	$ \mu_b(W): 0.47$
$ \mu_y.t(J): 1.04$	$ \mu_y(W): 1.04$
$ \mu_r.t(J): 0.82$	$ \mu_r(W): 0.82$

Electric Parameters

Voltage: 10.150V	Current: 1.3700A	Power: 12.89W
Power Factor: 0.8440	Frequency: 49.99Hz	

Condition: $T_x:0.0^\circ C$, $T_i:0.0^\circ C$, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-08-17 11:00:51
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