

Lightsource Test Report

Product Information

Product Category: LED-Lampen
 Product Spec: LED-AR111-12-NW-C-60
 Manufacturer: METOLIGHT
 Buyer: 2320

Product Type: LED-Lampen-AR111
 Product Number: 1
 Submitted Unit: 102000

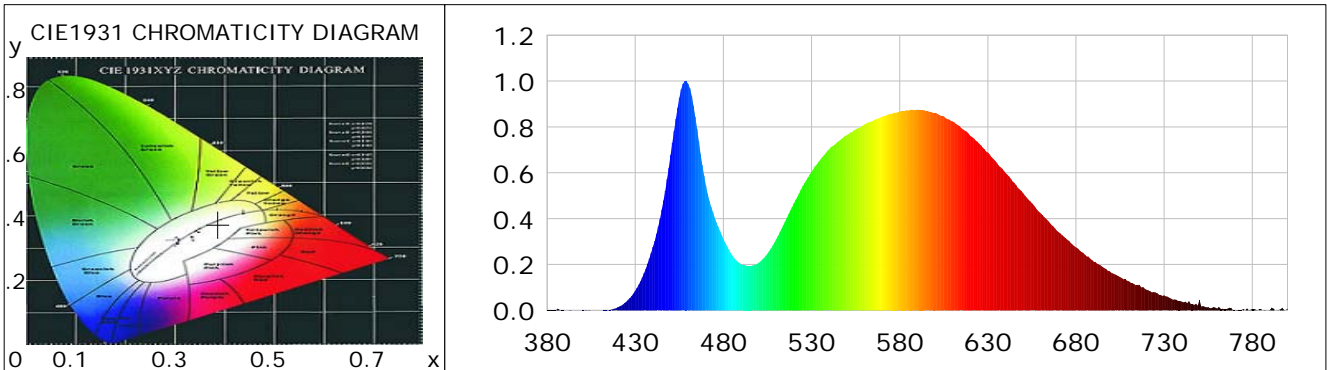
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3867$ $y=0.3745$ $u(u')=0.2302$ $v=0.3344$ $v'=0.5015$
 CCT: $T_c=3814K$ ($duv=-0.00282$) Color Ratio: $R=0.187$ $G=0.779$ $B=0.034$
 Peak Wavelength: 458.5nm Half Bandwidth: 24.8nm
 Dominant Wavelength: 581.3nm Color Purity: 0.285
 CRI: $R_a=79.3$, $avgR(1\sim14)=71.6$, $avgR(1\sim15)=71.9$ TM30: $R_f=78$, $R_g=93$
 GAI: $GAI_BB_8=94.3$, $GAI_BB_15=103.3$, $GAI_EES=71.4$

R1 =78	R2 =88	R3 =91	R4 =73	R5 =76	R6 =80	R7 =85	R8 =64
R9 =10	R10=67	R11=66	R12=50	R13=80	R14=95	R15=76	

Color Quality Scale: $Q_a=76.4$, $Q_f=76.4$, $Q_p=77.2$, $Q_g=91.6$

Q1 =83	Q2 =98	Q3 =71	Q4 =61	Q5 =68	Q6 =72	Q7 =78	Q8 =84
Q9 =95	Q10=83	Q11=77	Q12=77	Q13=79	Q14=73	Q15=76	



Photometric Parameters

Luminous Flux: 680.60 lm	Efficiency: 69.24 lm/W	Radiant Power: 2.100 W
Total mains efficacy: 75.40 lm/W	Energy Efficiency Class: G (EU 2019/2015)	
Pupil Flux: 973.08 Plm	Pupil Lumens Per Watt: 98.99 Plm/W	Pupil Factor (Kp): 1.430
Cirtopic Flux: 1946.01 lm		

Electric Parameters

Voltage: 9.0000V	Current: 1.0900A	Power: 9.83W
Power Factor: 0.8710	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: 46764 (2883)	CCD Integration Time: 358.70 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0009	0.0118	525	0.5417	7.3022	670	0.3425	4.6170
385	0.0017	0.0233	530	0.6037	8.1371	675	0.3088	4.1624
390	0.0006	0.0081	535	0.6574	8.8615	680	0.2750	3.7065
395	0.0001	0.0020	540	0.7024	9.4675	685	0.2434	3.2804
400	0.0011	0.0146	545	0.7364	9.9260	690	0.2124	2.8636
405	0.0002	0.0026	550	0.7639	10.2971	695	0.1896	2.5560
410	0.0004	0.0060	555	0.7886	10.6305	700	0.1644	2.2161
415	0.0034	0.0462	560	0.8109	10.9306	705	0.1448	1.9515
420	0.0133	0.1797	565	0.8282	11.1633	710	0.1264	1.7035
425	0.0380	0.5127	570	0.8442	11.3789	715	0.1102	1.4859
430	0.0855	1.1526	575	0.8582	11.5677	720	0.0898	1.2100
435	0.1625	2.1900	580	0.8667	11.6833	725	0.0783	1.0553
440	0.2762	3.7233	585	0.8710	11.7410	730	0.0655	0.8831
445	0.4395	5.9240	590	0.8755	11.8010	735	0.0466	0.6280
450	0.6775	9.1322	595	0.8679	11.6996	740	0.0384	0.5174
455	0.9277	12.5050	600	0.8617	11.6153	745	0.0281	0.3794
460	0.9877	13.3143	605	0.8462	11.4067	750	0.0461	0.6209
465	0.7924	10.6810	610	0.8241	11.1090	755	0.0140	0.1893
470	0.5453	7.3502	615	0.7947	10.7124	760	0.0080	0.1078
475	0.4050	5.4587	620	0.7622	10.2739	765	0.0060	0.0803
480	0.3112	4.1943	625	0.7272	9.8019	770	0.0014	0.0187
485	0.2396	3.2297	630	0.6881	9.2758	775	0.0056	0.0751
490	0.2012	2.7127	635	0.6438	8.6789	780	0.0056	0.0759
495	0.1937	2.6108	640	0.5995	8.0816	785	0.0042	0.0566
500	0.2078	2.8015	645	0.5564	7.4995	790	0.0027	0.0370
505	0.2475	3.3367	650	0.5110	6.8878	795	0.0027	0.0358
510	0.3107	4.1887	655	0.4672	6.2980	800	0.0096	0.1290
515	0.3874	5.2226	660	0.4235	5.7089			
520	0.4671	6.2958	665	0.3827	5.1588			

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

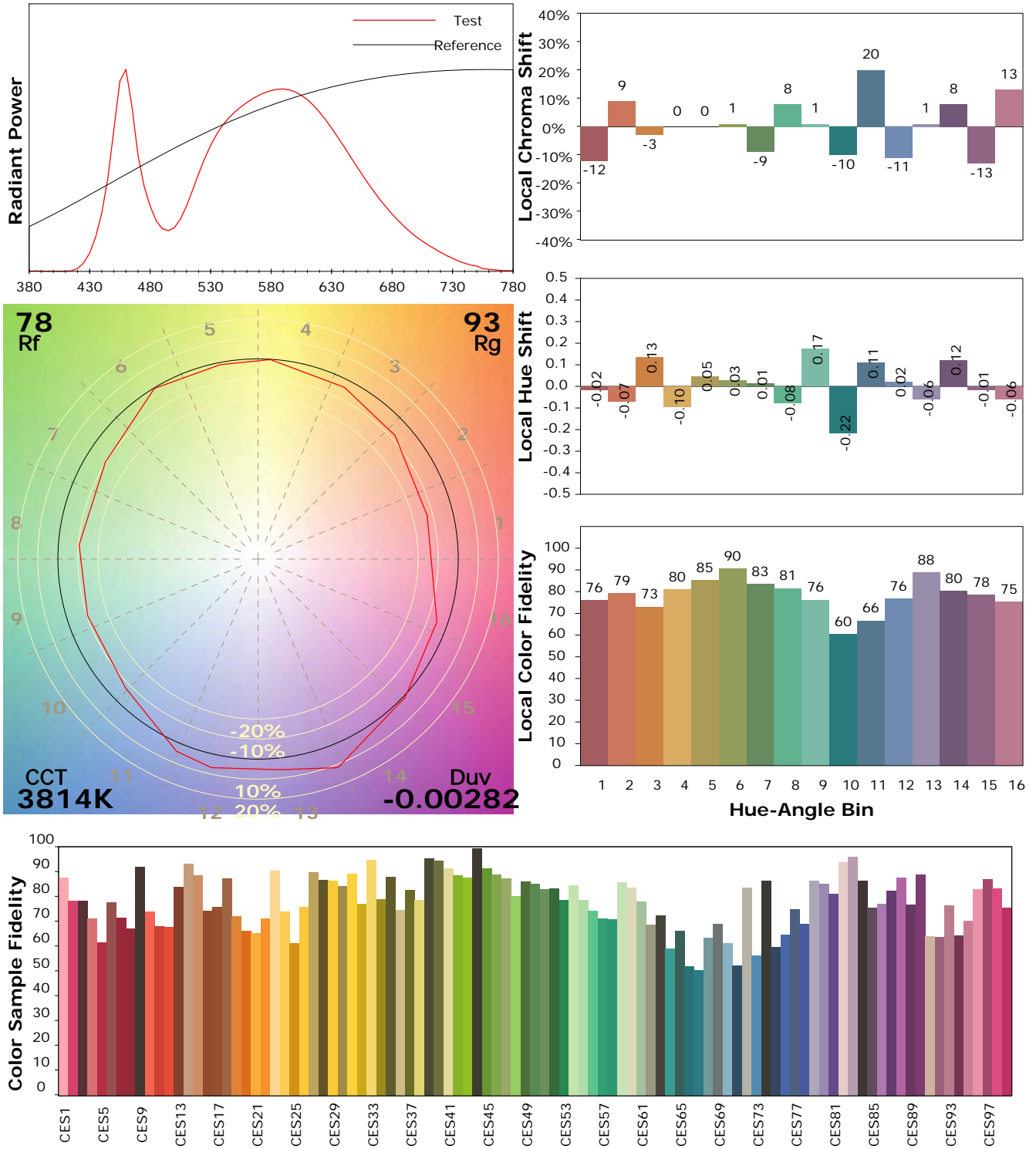
Test Device: Lisun LMS-9000B
 Test Time: 2021-08-17 10:43:42
 Inspector:

IES TM-30-18 Color Rendition Report

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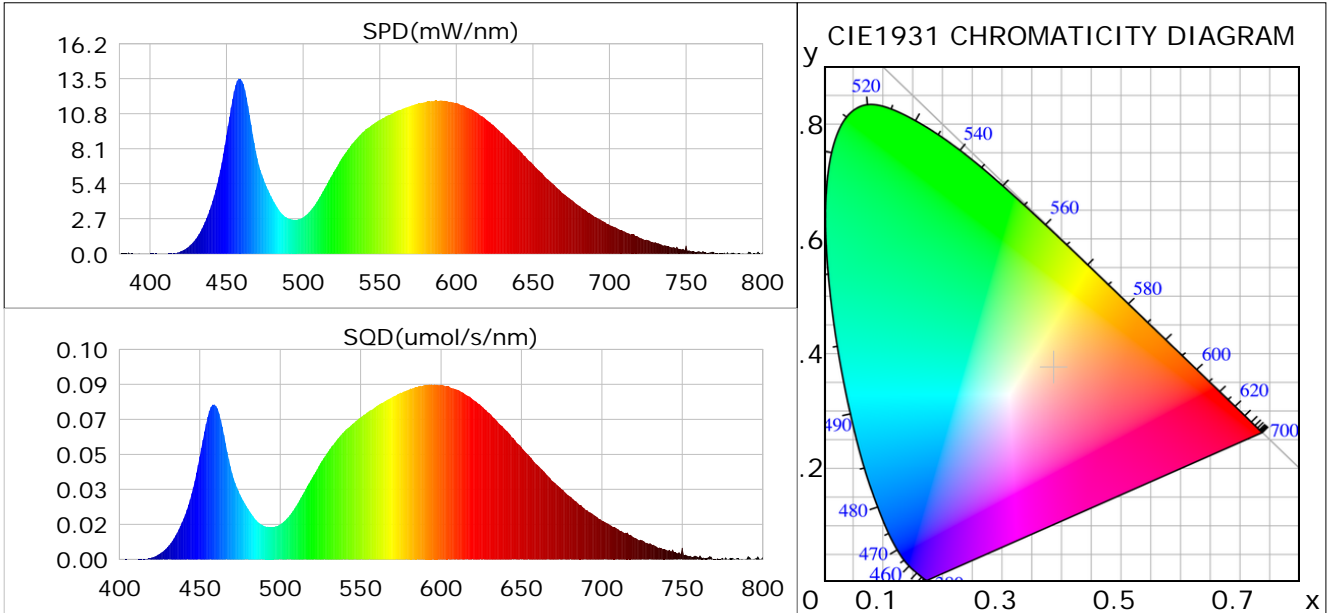
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-08-17 10:43:42
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Plant optical param data

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 CCT: $T_c=3814K$ ($duv=-0.00282$) Color Ratio: $R=0.187$ $G=0.779$ $B=0.034$
 Peak Wavelength: 458.5nm Half Bandwidth: 24.8nm
 Dominant Wavelength: 581.3nm Color Purity: 0.285
 CRI: $R_a=79.3$



Plant Optical Param

$ \mu_v(lm): 680.60$	$Q_v(lm.s): 680.60$
$ \mu_e, \dot{E}(W/nm): 2.10$	$Q_e(J): 2.10$
$ \mu_e(W): 2.04$	$ \mu_{fr}(W): 0.06$
$ \zeta_e: 0.21$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 0.98$	$K_{fr}: 0.04$
$Erb_Ratio: 1.59$	$PPF(umol/s): 9.64$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 1.67$
$PPF(500-600)(umol/s): 4.29$	$PPF(600-700)(umol/s): 3.68$
$PPF_{fr}(700-800)(umol/s): 0.36$	$PPF.t(umol): 9.64$
$ \mu_{ch-A.t}(J): 0.16$	$ \mu_{ch-A}(W): 0.16$
$ \mu_{ch-B.t}(J): 0.10$	$ \mu_{ch-B}(W): 0.10$
$ \mu_b.t(J): 0.43$	$ \mu_b(W): 0.43$
$ \mu_y.t(J): 0.92$	$ \mu_y(W): 0.92$
$ \mu_r.t(J): 0.70$	$ \mu_r(W): 0.70$

Electric Parameters

Voltage: 9.0000V	Current: 1.0900A	Power: 9.83W
Power Factor: 0.8710	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 10:43:42
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