

Lightsource Test Report

Product Information

Product Category: LED-PL-Röhren
 Product Spec: LED-PL-G23-08-CW
 Manufacturer: METOLIGHT
 Buyer: 2320

Product Type: LED-PL-Röhren-G23
 Product Number: 1
 Submitted Unit: 101988

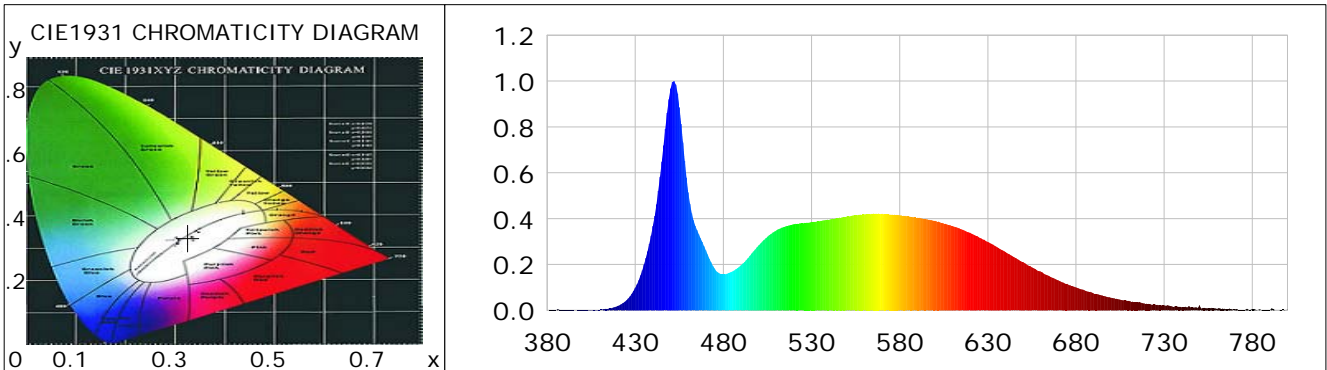
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3258$ $y=0.3326$ $u(u')=0.2056$ $v=0.3148$ $v'=0.4722$
 CCT: $T_c=5812K$ ($duv=-0.00136$) Color Ratio: $R=0.151$ $G=0.799$ $B=0.050$
 Peak Wavelength: 451.7nm Half Bandwidth: 17.7nm
 Dominant Wavelength: 490.5nm Color Purity: 0.026
 CRI: $R_a=85.9$, $avgR(1\sim14)=80.0$, $avgR(1\sim15)=80.2$ TM30: $R_f=84$, $R_g=98$
 GAI: $GAI_BB_8=97.3$, $GAI_BB_15=102.2$, $GAI_EES=91.5$

R1 =86	R2 =89	R3 =90	R4 =87	R5 =86	R6 =83	R7 =89	R8 =77
R9 =31	R10=73	R11=87	R12=60	R13=87	R14=94	R15=84	

Color Quality Scale: $Q_a=82.7$, $Q_f=81.8$, $Q_p=84.8$, $Q_g=95.8$

Q1 =88	Q2 =97	Q3 =74	Q4 =72	Q5 =81	Q6 =85	Q7 =88	Q8 =92
Q9 =94	Q10=85	Q11=81	Q12=81	Q13=83	Q14=77	Q15=82	



Photometric Parameters

Luminous Flux: 673.36 lm Efficiency: 88.25 lm/W Radiant Power: 2.199 W
 Total mains efficacy: 103.78 lm/W Energy Efficiency Class: F (EU 2019/2015)
 Pupil Flux: 1210.41 Plm Pupil Lumens Per Watt: 158.64 Plm/W Pupil Factor (Kp): 1.798
 Circopic Flux: 2709.88 lm

Electric Parameters

Voltage: 231.10V Current: 0.0340A Power: 7.63W
 Power Factor: 0.9470 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: 45890 (2564) CCD Integration Time: 197.47 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	0.0163	525	0.3794	9.3038	670	0.1306	3.2036
385	0.0010	0.0236	530	0.3855	9.4541	675	0.1155	2.8328
390	0.0016	0.0389	535	0.3896	9.5553	680	0.0999	2.4508
395	0.0009	0.0233	540	0.3945	9.6743	685	0.0870	2.1344
400	0.0016	0.0404	545	0.4014	9.8443	690	0.0740	1.8137
405	0.0018	0.0442	550	0.4092	10.0343	695	0.0642	1.5754
410	0.0038	0.0933	555	0.4148	10.1723	700	0.0545	1.3366
415	0.0080	0.1954	560	0.4185	10.2643	705	0.0470	1.1533
420	0.0189	0.4628	565	0.4218	10.3438	710	0.0413	1.0125
425	0.0435	1.0666	570	0.4210	10.3244	715	0.0354	0.8679
430	0.0987	2.4205	575	0.4178	10.2467	720	0.0289	0.7084
435	0.1997	4.8983	580	0.4150	10.1770	725	0.0257	0.6294
440	0.3677	9.0165	585	0.4104	10.0650	730	0.0219	0.5369
445	0.6488	15.9108	590	0.4038	9.9038	735	0.0160	0.3924
450	0.9671	23.7176	595	0.3976	9.7521	740	0.0135	0.3307
455	0.8856	21.7188	600	0.3905	9.5759	745	0.0130	0.3198
460	0.5150	12.6303	605	0.3788	9.2900	750	0.0220	0.5389
465	0.3499	8.5813	610	0.3677	9.0172	755	0.0101	0.2481
470	0.2620	6.4265	615	0.3535	8.6685	760	0.0068	0.1660
475	0.1823	4.4717	620	0.3381	8.2912	765	0.0050	0.1233
480	0.1568	3.8459	625	0.3180	7.7980	770	0.0044	0.1080
485	0.1695	4.1576	630	0.2982	7.3130	775	0.0040	0.0971
490	0.1962	4.8112	635	0.2766	6.7838	780	0.0051	0.1241
495	0.2379	5.8341	640	0.2546	6.2447	785	0.0030	0.0738
500	0.2837	6.9583	645	0.2318	5.6838	790	0.0017	0.0418
505	0.3218	7.8907	650	0.2108	5.1687	795	0.0012	0.0304
510	0.3489	8.5570	655	0.1878	4.6045	800	0.0045	0.1100
515	0.3654	8.9614	660	0.1694	4.1536			
520	0.3759	9.2181	665	0.1480	3.6308			

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

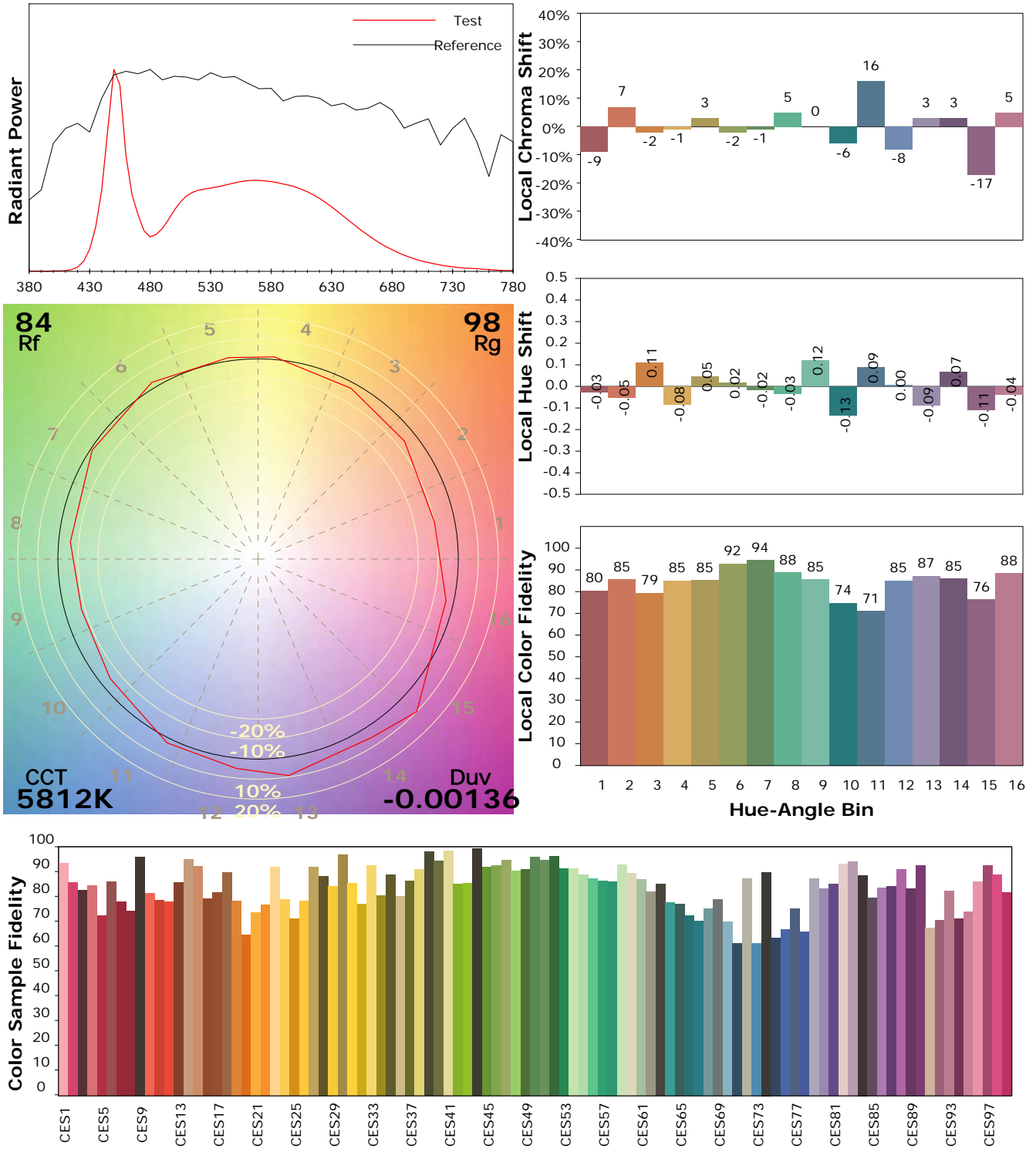
Test Device: Lisun LMS-9000B
 Test Time: 2021-03-03 14:57:17
 Inspector:

IES TM-30-18 Color Rendition Report

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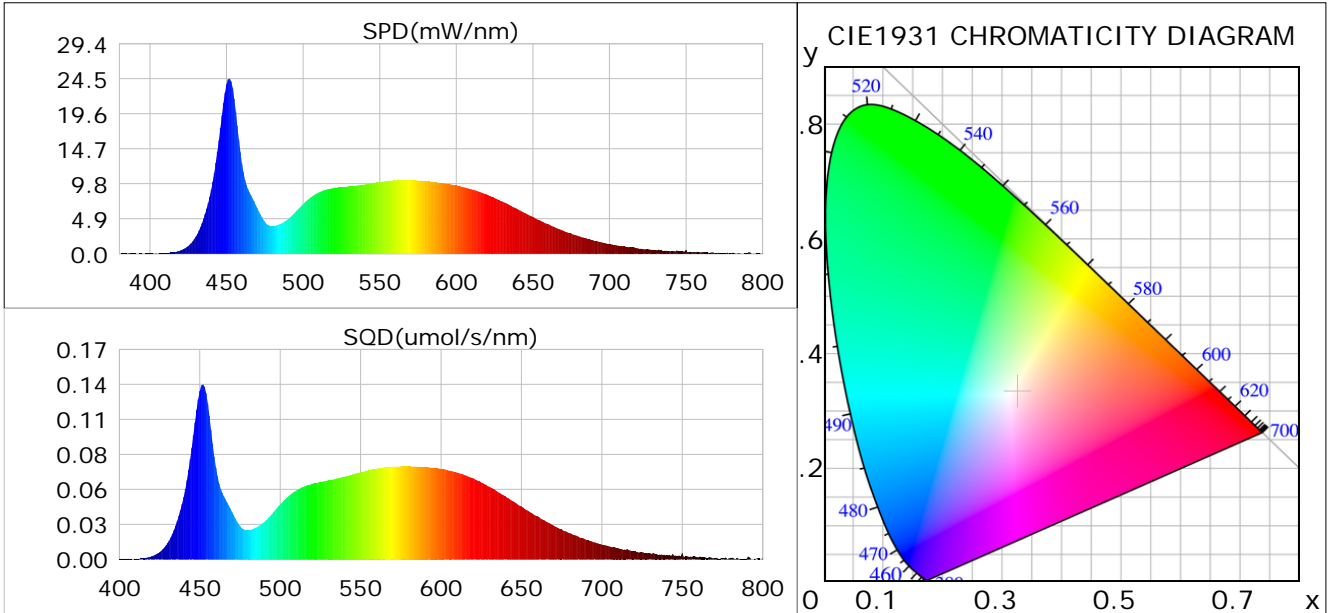
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-03-03 14:57:17
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

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 Peak Wavelength: 451.7nm Half Bandwidth: 17.7nm
 Dominant Wavelength: 490.5nm Color Purity: 0.026
 CRI: $R_a=85.9$



Plant Optical Param

$ \mu_v(lm): 673.36$	$Q_v(lm.s): 673.36$
$ \mu_e, \dot{E}(W/nm): 2.20$	$Q_e(J): 2.20$
$ \mu_e(W): 2.16$	$ \mu_{fr}(W): 0.04$
$ \zeta_e: 0.28$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.29$	$K_{fr}: 0.03$
$Erb_Ratio: 0.78$	$PPF(umol/s): 9.81$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 2.58$
$PPF(500-600)(umol/s): 4.44$	$PPF(600-700)(umol/s): 2.80$
$PPF_r(700-800)(umol/s): 0.24$	$PPF.t(umol): 9.81$
$ \mu_{ch-A.t}(J): 0.19$	$ \mu_{ch-A}(W): 0.19$
$ \mu_{ch-B.t}(J): 0.12$	$ \mu_{ch-B}(W): 0.12$
$ \mu_b.t(J): 0.67$	$ \mu_b(W): 0.67$
$ \mu_y.t(J): 0.97$	$ \mu_y(W): 0.97$
$ \mu_r.t(J): 0.54$	$ \mu_r(W): 0.54$

Electric Parameters

Voltage: 231.10V	Current: 0.0340A	Power: 7.63W
Power Factor: 0.9470	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: 2021-03-03 14:57:17
 Inspector: