

Lightsource Test Report

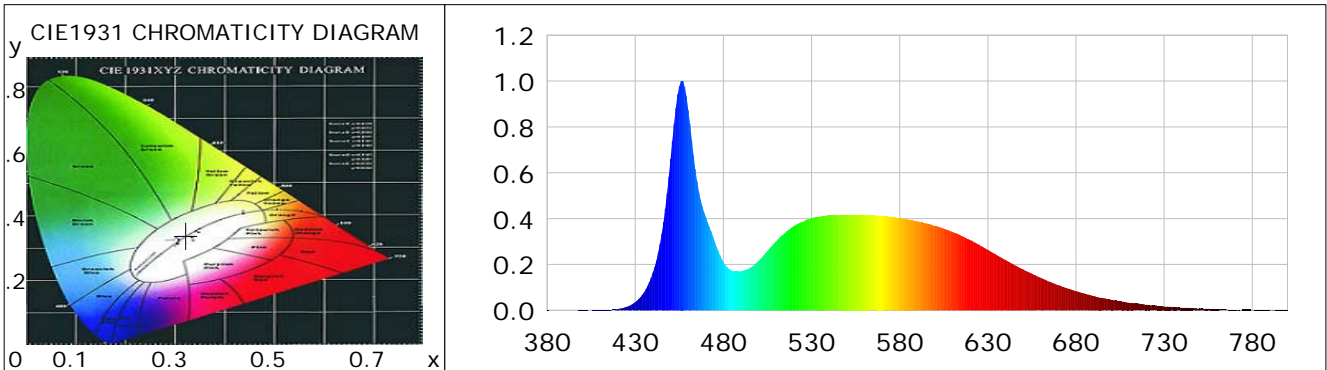
Product Information

Product Category: LED-PL-Röhre
 Product Spec: LED-PL-2G11-I-23-CWM-360
 Manufacturer: METOLIGHT
 Buyer: 4493

Product Type: LED-PL-Röhre-2G11
 Product Number: 1
 Submitted Unit: 104615

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3217$ $y=0.3394$ $u(u')=0.2002$ $v=0.3167$ $v'=0.4751$
 CCT: $T_c=5992K$ ($duv=0.00409$) Color Ratio: $R=0.141$ $G=0.806$ $B=0.053$
 Peak Wavelength: 456.5nm Half Bandwidth: 18.7nm
 Dominant Wavelength: 498.6nm Color Purity: 0.036
 CRI: $R_a=82.8$, $avgR(1\sim14)=75.3$, $avgR(1\sim15)=75.5$ TM30: $R_f=80$, $R_g=92$
 GAI: $GAI_BB_8=88.9$, $GAI_BB_15=96.1$, $GAI_EES=84.5$
 R1 =82 R2 =90 R3 =92 R4 =79 R5 =80 R6 =83 R7 =87 R8 =70
 R9 =13 R10=72 R11=77 R12=49 R13=85 R14=96 R15=78
 Color Quality Scale: $Q_a=79.6$, $Q_f=79.7$, $Q_p=79.4$, $Q_g=90.4$
 Q1 =81 Q2 =98 Q3 =76 Q4 =66 Q5 =72 Q6 =75 Q7 =83 Q8 =89
 Q9 =96 Q10=87 Q11=82 Q12=82 Q13=83 Q14=73 Q15=77



Photometric Parameters

Luminous Flux: 2618.0 lm Efficiency: 114.22 lm/W Radiant Power: 8.284 W
 Total mains efficacy: 134.33 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 4786.82 Plm Pupil Lumens Per Watt: 208.85 Plm/W Pupil Factor (Kp): 1.828
 Circopic Flux: 10911.81 lm

Electric Parameters

Voltage: 230.70V Current: 0.1050A Power: 22.92W
 Power Factor: 0.9450 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: 46955 (2146) CCD Integration Time: 63.18 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0014	0.1403	525	0.3858	37.5882	670	0.1100	10.7142
385	0.0006	0.0590	530	0.4018	39.1510	675	0.0963	9.3783
390	0.0002	0.0226	535	0.4092	39.8731	680	0.0837	8.1562
395	0.0005	0.0443	540	0.4136	40.2958	685	0.0728	7.0974
400	0.0007	0.0685	545	0.4146	40.3934	690	0.0634	6.1781
405	0.0008	0.0740	550	0.4147	40.4068	695	0.0543	5.2931
410	0.0012	0.1210	555	0.4155	40.4788	700	0.0458	4.4673
415	0.0025	0.2448	560	0.4155	40.4799	705	0.0396	3.8581
420	0.0056	0.5468	565	0.4143	40.3713	710	0.0341	3.3180
425	0.0151	1.4677	570	0.4116	40.1030	715	0.0301	2.9364
430	0.0356	3.4720	575	0.4081	39.7670	720	0.0248	2.4159
435	0.0780	7.6032	580	0.4032	39.2849	725	0.0220	2.1406
440	0.1642	15.9987	585	0.3959	38.5719	730	0.0174	1.6932
445	0.3353	32.6742	590	0.3884	37.8394	735	0.0142	1.3842
450	0.6603	64.3325	595	0.3796	36.9822	740	0.0112	1.0960
455	0.9786	95.3434	600	0.3690	35.9553	745	0.0103	1.0026
460	0.8758	85.3365	605	0.3572	34.7996	750	0.0104	1.0181
465	0.5641	54.9595	610	0.3421	33.3275	755	0.0070	0.6810
470	0.4077	39.7203	615	0.3251	31.6790	760	0.0055	0.5331
475	0.3007	29.2964	620	0.3068	29.8914	765	0.0045	0.4413
480	0.2108	20.5400	625	0.2863	27.8974	770	0.0025	0.2400
485	0.1730	16.8598	630	0.2638	25.7066	775	0.0027	0.2590
490	0.1706	16.6243	635	0.2410	23.4781	780	0.0012	0.1176
495	0.1850	18.0231	640	0.2195	21.3843	785	0.0018	0.1707
500	0.2166	21.0999	645	0.1978	19.2725	790	0.0012	0.1205
505	0.2594	25.2721	650	0.1790	17.4450	795	0.0013	0.1285
510	0.3028	29.5047	655	0.1602	15.6130	800	0.0017	0.1702
515	0.3381	32.9377	660	0.1422	13.8585			
520	0.3685	35.9006	665	0.1246	12.1368			

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

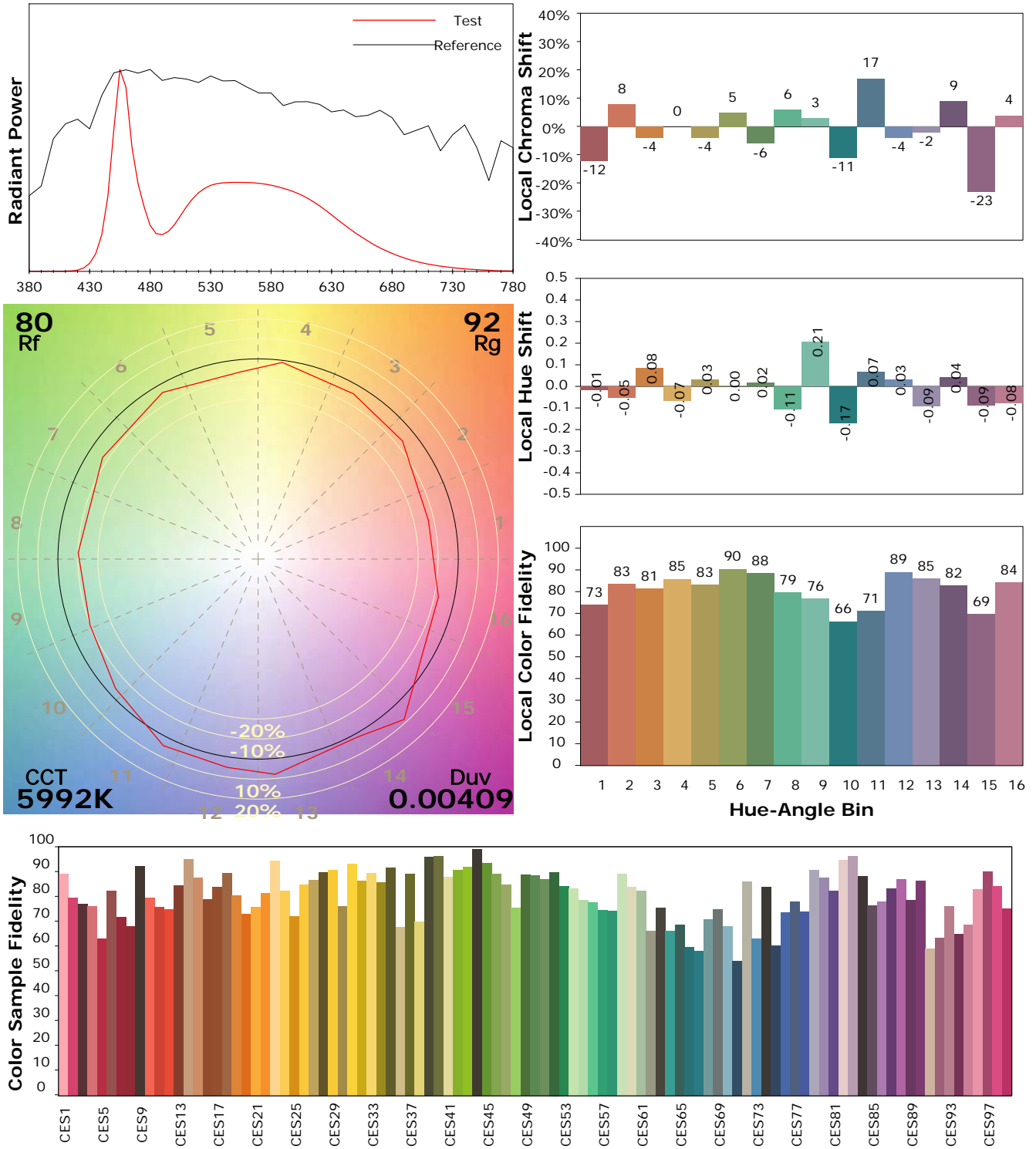
Test Device: Lisun LMS-9000B
 Test Time: 2021-02-26 11:14:02
 Inspector:

IES TM-30-18 Color Rendition Report

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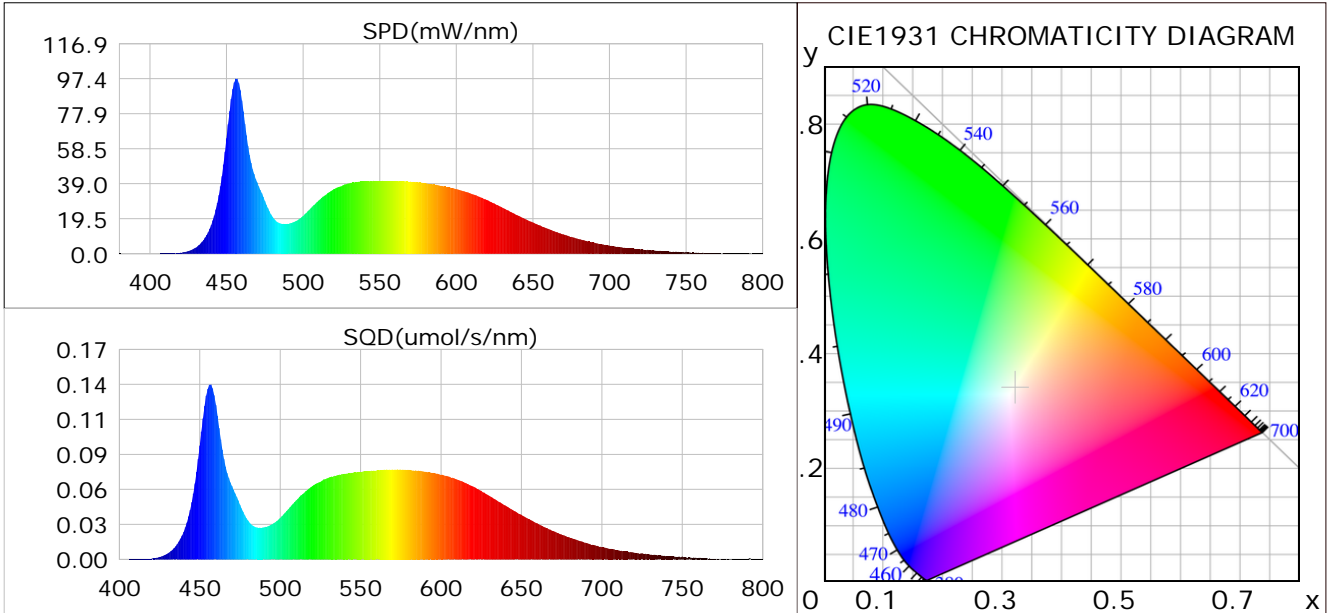
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-02-26 11:14:02
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Plant optical param data

CIE Colorimetric Parameters

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 Dominant Wavelength: 498.6nm Color Purity: 0.036
 CRI: $R_a=82.8$



Plant Optical Param

$ \mu_v(lm): 2618.00$	$Q_v(lm.s): 2618.00$
$ \mu_e, \dot{E}(W/nm): 8.28$	$Q_e(J): 8.28$
$ \mu_e(W): 8.16$	$ \mu_{fr}(W): 0.13$
$ \zeta_e: 0.36$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.62$	$K_{fr}: 0.03$
$Erb_Ratio: 0.72$	$PPF(umol/s): 37.02$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 9.97$
$PPF(500-600)(umol/s): 17.23$	$PPF(600-700)(umol/s): 9.83$
$PPF_r(700-800)(umol/s): 0.77$	$PPF.t(umol): 37.02$
$ \mu_{ch-A.t}(J): 0.62$	$ \mu_{ch-A}(W): 0.62$
$ \mu_{ch-B.t}(J): 0.49$	$ \mu_{ch-B}(W): 0.49$
$ \mu_b.t(J): 2.58$	$ \mu_b(W): 2.58$
$ \mu_y.t(J): 3.75$	$ \mu_y(W): 3.75$
$ \mu_r.t(J): 1.89$	$ \mu_r(W): 1.89$

Electric Parameters

Voltage: 230.70V	Current: 0.1050A	Power: 22.92W
Power Factor: 0.9450	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: 2021-02-26 11:14:02
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