

Lightsource Test Report

Product Information

Product Category: LED-PL-Röhre
 Product Spec: LED-PL-2G11-I-20-WWM
 Manufacturer: METOLIGHT
 Buyer: 4778

Product Type: LED-PL-Röhre-2G11
 Product Number: 1
 Submitted Unit: 101262

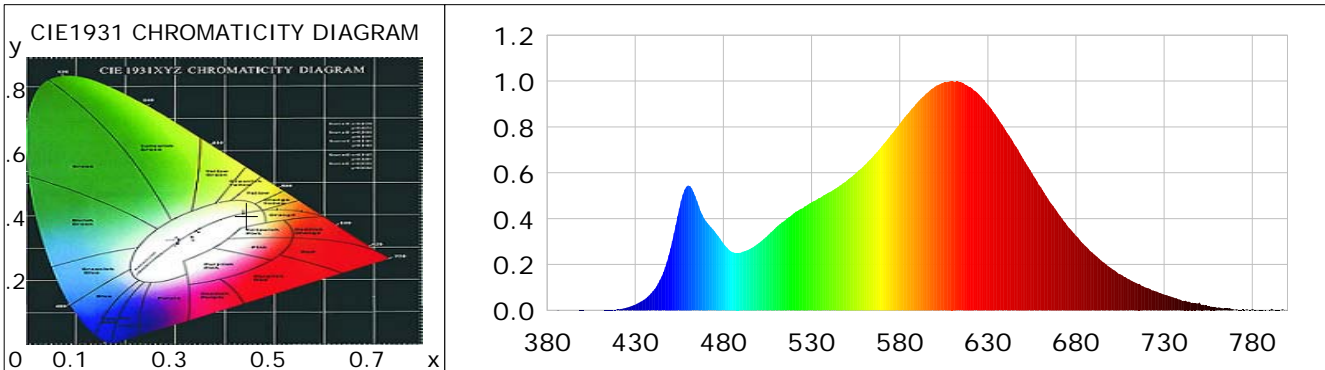
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.4444$ $y=0.4020$ $u(u')=0.2564$ $v=0.3478$ $v'=0.5217$
 CCT: $T_c=2860K$ ($duv=-0.00178$) Color Ratio: $R=0.247$ $G=0.722$ $B=0.031$
 Peak Wavelength: 609.4nm Half Bandwidth: 126.3nm
 Dominant Wavelength: 584.1nm Color Purity: 0.540
 CRI: $R_a=86.0$, $avgR(1\sim14)=82.4$, $avgR(1\sim15)=82.2$ TM30: $R_f=85$, $R_g=93$
 GAI: $GAI_BB_8=97.3$, $GAI_BB_15=106.3$, $GAI_EES=52.0$

R1 =87	R2 =97	R3 =93	R4 =83	R5 =87	R6 =96	R7 =81	R8 =64
R9 =26	R10=92	R11=83	R12=77	R13=90	R14=97	R15=80	

Color Quality Scale: $Q_a=85.1$, $Q_f=86.9$, $Q_p=86.5$, $Q_g=91.3$

Q1 =81	Q2 =93	Q3 =88	Q4 =82	Q5 =82	Q6 =84	Q7 =86	Q8 =88
Q9 =94	Q10=94	Q11=90	Q12=87	Q13=86	Q14=78	Q15=79	



Photometric Parameters

Luminous Flux: 1835.7 lm Efficiency: 96.62 lm/W Radiant Power: 5.823 W
 Total mains efficacy: 113.62 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 2342.90 Plm Pupil Lumens Per Watt: 123.31 Plm/W Pupil Factor (Kp): 1.276
 Circopic Flux: 4417.33 lm

Electric Parameters

Voltage: 230.90V Current: 0.0860A Power: 19.00W
 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: 46749 (2362) CCD Integration Time: 227.00 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0049	525	0.4453	17.3333	670	0.4219	16.4233
385	0.0004	0.0150	530	0.4711	18.3361	675	0.3696	14.3876
390	0.0007	0.0266	535	0.4911	19.1158	680	0.3252	12.6584
395	0.0002	0.0059	540	0.5145	20.0254	685	0.2823	10.9897
400	0.0008	0.0301	545	0.5381	20.9453	690	0.2458	9.5671
405	0.0000	0.0015	550	0.5659	22.0245	695	0.2121	8.2545
410	0.0003	0.0098	555	0.5972	23.2451	700	0.1833	7.1341
415	0.0013	0.0488	560	0.6327	24.6283	705	0.1574	6.1274
420	0.0046	0.1771	565	0.6726	26.1785	710	0.1358	5.2844
425	0.0112	0.4376	570	0.7172	27.9161	715	0.1156	4.5004
430	0.0251	0.9770	575	0.7652	29.7840	720	0.0978	3.8078
435	0.0466	1.8119	580	0.8142	31.6903	725	0.0836	3.2520
440	0.0834	3.2466	585	0.8603	33.4860	730	0.0697	2.7114
445	0.1486	5.7850	590	0.9067	35.2904	735	0.0566	2.2032
450	0.2695	10.4914	595	0.9454	36.7955	740	0.0430	1.6744
455	0.4445	17.2993	600	0.9754	37.9638	745	0.0340	1.3225
460	0.5445	21.1939	605	0.9939	38.6841	750	0.0337	1.3107
465	0.4766	18.5490	610	0.9998	38.9136	755	0.0179	0.6969
470	0.3902	15.1869	615	0.9947	38.7165	760	0.0111	0.4330
475	0.3443	13.3992	620	0.9740	37.9108	765	0.0089	0.3472
480	0.2919	11.3634	625	0.9406	36.6115	770	0.0034	0.1319
485	0.2547	9.9120	630	0.8968	34.9053	775	0.0037	0.1448
490	0.2523	9.8210	635	0.8447	32.8770	780	0.0052	0.2026
495	0.2677	10.4211	640	0.7859	30.5885	785	0.0030	0.1174
500	0.2931	11.4076	645	0.7245	28.1984	790	0.0016	0.0610
505	0.3257	12.6756	650	0.6609	25.7238	795	0.0019	0.0728
510	0.3632	14.1357	655	0.5985	23.2951	800	0.0037	0.1433
515	0.3928	15.2901	660	0.5377	20.9296			
520	0.4236	16.4893	665	0.4753	18.4987			

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

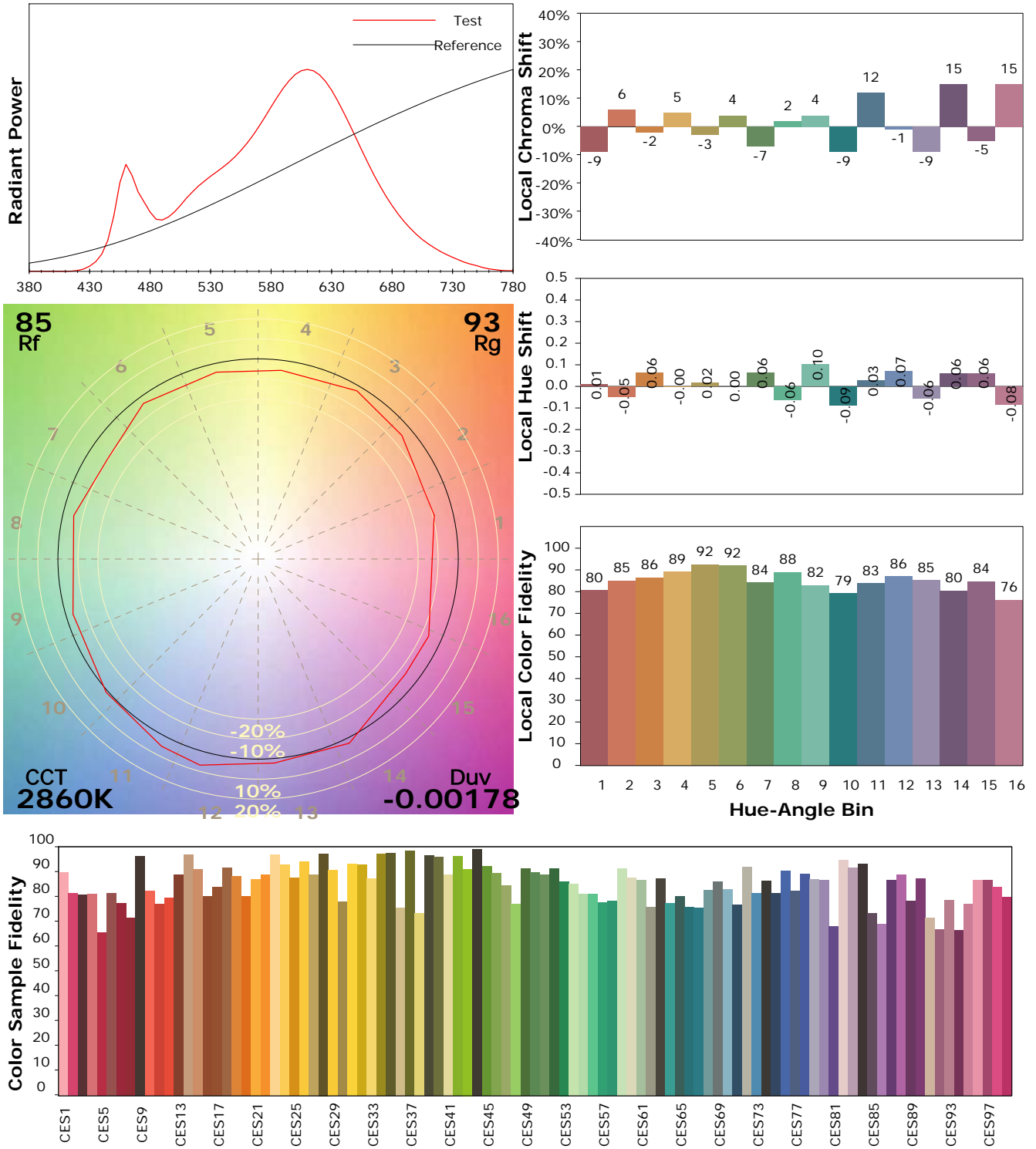
Test Device: Lisun LMS-9000B
 Test Time: 2021-02-26 11:55:18
 Inspector:

IES TM-30-18 Color Rendition Report

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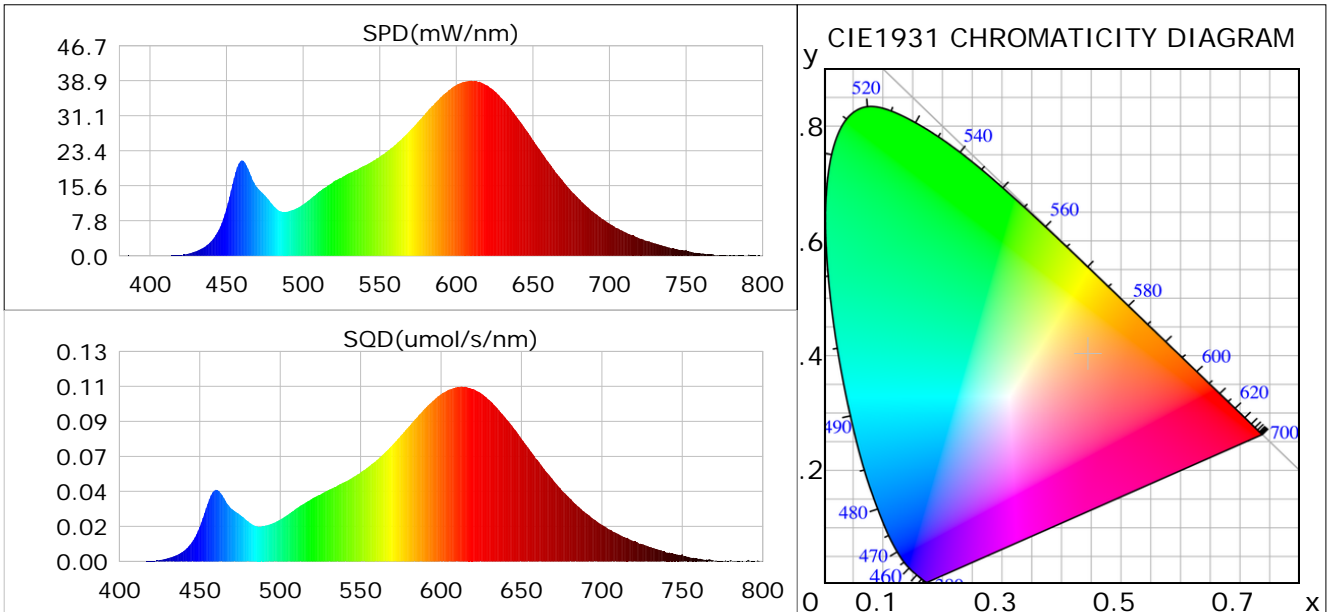
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-02-26 11:55:18
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Plant optical param data

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.4444$ $y=0.4020$ $u(u')=0.2564$ $v=0.3478$ $v'=0.5217$
 CCT: $T_c=2860K$ ($duv=-0.00178$) Color Ratio: $R=0.247$ $G=0.722$ $B=0.031$
 Peak Wavelength: 609.4nm Half Bandwidth: 126.3nm
 Dominant Wavelength: 584.1nm Color Purity: 0.540
 CRI: $R_a=86.0$



Plant Optical Param

$ \mu_v(lm)$: 1835.70	$Q_v(lm.s)$: 1835.70
$ \mu_e, \dot{E}(W/nm)$: 5.82	$Q_e(J)$: 5.82
$ \mu_e(W)$: 5.64	$ \mu_{fr}(W)$: 0.19
$ \zeta_e$: 0.30	$ \zeta_{fr}$: 0.01
PPE(umol/s/w): 1.44	Kfr: 0.06
Erb_Ratio: 3.17	PPF(umol/s): 27.41
PFuv(360-400)(umol/s): 0.00	PPF(400-500)(umol/s): 3.08
PPF(500-600)(umol/s): 11.06	PPF(600-700)(umol/s): 13.27
PPfr(700-800)(umol/s): 1.12	PPF.t(umol): 27.41
$ \mu_{ch-A.t}(J)$: 0.44	$ \mu_{ch-A}(W)$: 0.44
$ \mu_{ch-B.t}(J)$: 0.23	$ \mu_{ch-B}(W)$: 0.23
$ \mu_b.t(J)$: 0.78	$ \mu_b(W)$: 0.78
$ \mu_y.t(J)$: 2.38	$ \mu_y(W)$: 2.38
$ \mu_r.t(J)$: 2.53	$ \mu_r(W)$: 2.53

Electric Parameters

Voltage: 230.90V	Current: 0.0860A	Power: 19.00W
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: 2021-02-26 11:55:18
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