

Lightsource Test Report

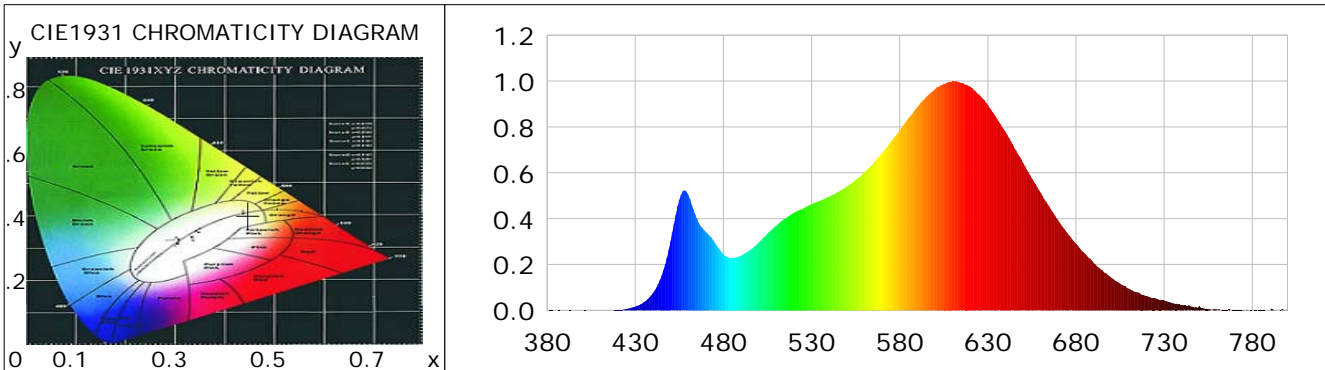
Product Information

Product Category: LED-PL-Röhre
 Product Spec: LED-PL-2G11-18W-WWM-TRF
 Manufacturer: METOLIGHT
 Buyer: 6852

Product Type: LED-PL-Röhre-2G11
 Product Number: 1
 Submitted Unit: 104977

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.4475$ $y=0.4030$ $u(u')=0.2579$ $v=0.3484$ $v'=0.5225$
 CCT: $T_c=2821K$ ($duv=-0.00171$) Color Ratio: $R=0.252$ $G=0.719$ $B=0.029$
 Peak Wavelength: 611.8nm Half Bandwidth: 119.9nm
 Dominant Wavelength: 584.2nm Color Purity: 0.553
 CRI: $R_a=86.6$, $avgR(1\sim14)=83.1$, $avgR(1\sim15)=82.9$ TM30: $R_f=86$, $R_g=94$
 GAI: $GAI_BB_8=98.1$, $GAI_BB_15=107.1$, $GAI_EES=51.3$
 R1 =88 R2 =97 R3 =93 R4 =85 R5 =88 R6 =96 R7 =81 R8 =65
 R9 =26 R10=93 R11=86 R12=78 R13=91 R14=97 R15=80
 Color Quality Scale: $Q_a=85.8$, $Q_f=87.6$, $Q_p=87.6$, $Q_g=91.8$
 Q1 =81 Q2 =93 Q3 =89 Q4 =83 Q5 =84 Q6 =86 Q7 =88 Q8 =89
 Q9 =94 Q10=94 Q11=91 Q12=88 Q13=86 Q14=78 Q15=79



Photometric Parameters

Luminous Flux: 1644.3 lm Efficiency: 98.94 lm/W Radiant Power: 5.117 W
 Total mains efficacy: 116.35 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 2081.22 Plm Pupil Lumens Per Watt: 125.22 Plm/W Pupil Factor (Kp): 1.266
 Circopic Flux: 3891.16 lm

Electric Parameters

Voltage: 230.80V Current: 0.0750A Power: 16.62W
 Power Factor: 0.9560 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: 49914 (2541) CCD Integration Time: 250.97 ms

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

Test Device: Lisun LMS-9000B
 Test Time: 2021-02-25 15:23:57
 Inspector:

Lightsource Test Report

Product Information

Product Category: LED-PL-Röhre

Product Spec: LED-PL-2G11-18W-WWM-TRF

Manufacturer: METOLIGHT

Buyer: 6852

Product Type: LED-PL-Röhre-2G11

Product Number: 1

Submitted Unit: 104977

WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0004	0.0142	525	0.4430	15.8406	670	0.3917	14.0087
385	0.0004	0.0141	530	0.4634	16.5697	675	0.3381	12.0906
390	0.0006	0.0228	535	0.4784	17.1066	680	0.2906	10.3936
395	0.0003	0.0114	540	0.4961	17.7410	685	0.2475	8.8513
400	0.0003	0.0113	545	0.5154	18.4313	690	0.2066	7.3873
405	0.0002	0.0071	550	0.5401	19.3130	695	0.1740	6.2223
410	0.0004	0.0139	555	0.5694	20.3633	700	0.1424	5.0939
415	0.0010	0.0347	560	0.6025	21.5443	705	0.1167	4.1747
420	0.0014	0.0510	565	0.6421	22.9629	710	0.0948	3.3896
425	0.0050	0.1803	570	0.6864	24.5463	715	0.0786	2.8094
430	0.0161	0.5775	575	0.7361	26.3216	720	0.0623	2.2283
435	0.0357	1.2760	580	0.7862	28.1144	725	0.0527	1.8863
440	0.0748	2.6760	585	0.8386	29.9880	730	0.0429	1.5343
445	0.1526	5.4558	590	0.8870	31.7205	735	0.0308	1.1025
450	0.3002	10.7368	595	0.9308	33.2836	740	0.0240	0.8587
455	0.4826	17.2564	600	0.9641	34.4774	745	0.0180	0.6442
460	0.5049	18.0569	605	0.9886	35.3525	750	0.0194	0.6945
465	0.3987	14.2577	610	0.9988	35.7174	755	0.0065	0.2324
470	0.3419	12.2250	615	0.9906	35.4243	760	0.0038	0.1376
475	0.2965	10.6043	620	0.9756	34.8857	765	0.0029	0.1020
480	0.2441	8.7284	625	0.9407	33.6395	770	0.0008	0.0297
485	0.2282	8.1597	630	0.8944	31.9852	775	0.0028	0.1011
490	0.2383	8.5214	635	0.8376	29.9529	780	0.0005	0.0190
495	0.2620	9.3688	640	0.7785	27.8375	785	0.0012	0.0446
500	0.2957	10.5728	645	0.7084	25.3314	790	0.0002	0.0072
505	0.3352	11.9865	650	0.6420	22.9575	795	0.0003	0.0106
510	0.3699	13.2288	655	0.5748	20.5539	800	0.0048	0.1722
515	0.3994	14.2812	660	0.5124	18.3235			
520	0.4260	15.2322	665	0.4503	16.1034			

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

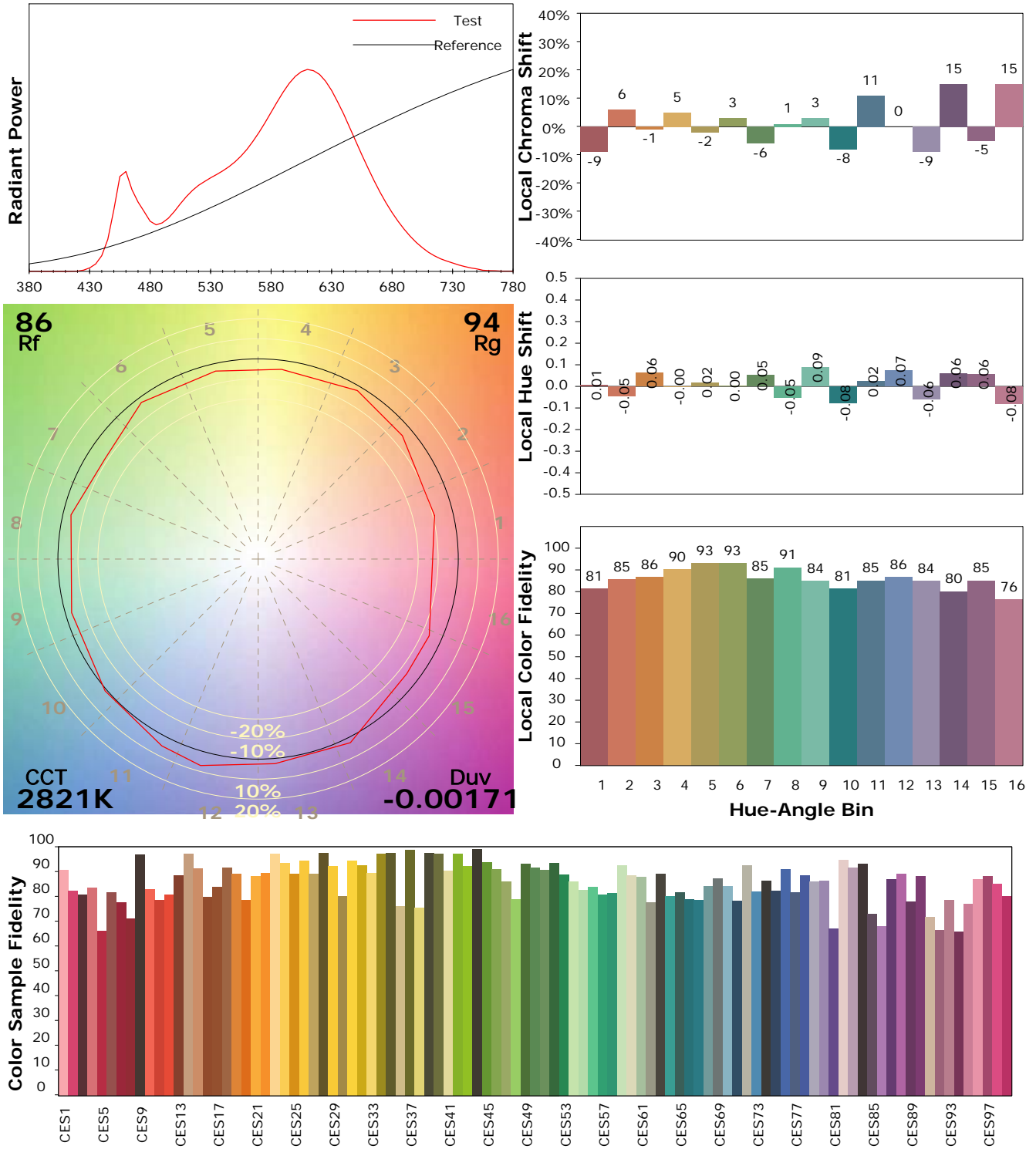
Test Device: Lisun LMS-9000B
 Test Time: 2021-02-25 15:23:57
 Inspector:

IES TM-30-18 Color Rendition Report

Product Information

Product Category: LED-PL-Röhre
 Product Spec: LED-PL-2G11-18W-WWM-TRF
 Manufacturer: METOLIGHT
 Buyer: 6852

Product Type: LED-PL-Röhre-2G11
 Product Number: 1
 Submitted Unit: 104977



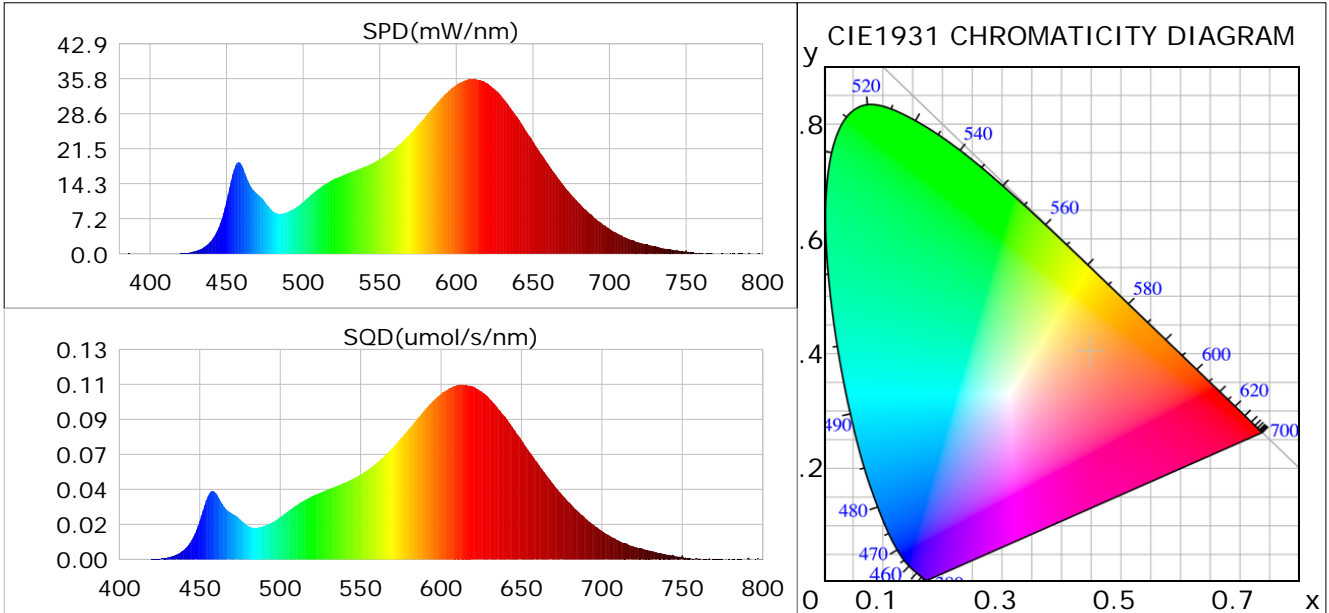
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-02-25 15:23:57
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.4475$ $y=0.4030$ $u(u')=0.2579$ $v=0.3484$ $v'=0.5225$
 CCT: $T_c=2821K$ ($duv=-0.00171$) Color Ratio: $R=0.252$ $G=0.719$ $B=0.029$
 Peak Wavelength: 611.8nm Half Bandwidth: 119.9nm
 Dominant Wavelength: 584.2nm Color Purity: 0.553
 CRI: $R_a=86.6$



Plant Optical Param

$ \mu_v(lm)$: 1644.30	$Q_v(lm.s)$: 1644.30
$ \mu_e, \dot{E}(W/nm)$: 5.12	$Q_e(J)$: 5.12
$ \mu_e(W)$: 5.01	$ \mu_{fr}(W)$: 0.11
$ \zeta_e$: 0.30	$ \zeta_{fr}$: 0.01
PPE(umol/s/w): 1.47	Kfr: 0.04
Erb_Ratio: 3.30	PPF(umol/s): 24.35
PFuv(360-400)(umol/s): 0.00	PPF(400-500)(umol/s): 2.63
PPF(500-600)(umol/s): 9.90	PPF(600-700)(umol/s): 11.82
PPfr(700-800)(umol/s): 0.65	PPF.t(umol): 24.35
$ \mu_{ch-A.t}(J)$: 0.39	$ \mu_{ch-A}(W)$: 0.39
$ \mu_{ch-B.t}(J)$: 0.20	$ \mu_{ch-B}(W)$: 0.20
$ \mu_b.t(J)$: 0.67	$ \mu_b(W)$: 0.67
$ \mu_y.t(J)$: 2.13	$ \mu_y(W)$: 2.13
$ \mu_r.t(J)$: 2.25	$ \mu_r(W)$: 2.25

Electric Parameters

Voltage: 230.80V	Current: 0.0750A	Power: 16.62W
Power Factor: 0.9560	Frequency: 49.99Hz	

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

Test Device: Lisun LMS-9000B
 Test Time: 2021-02-25 15:23:57
 Inspector: