

Lightsource Test Report

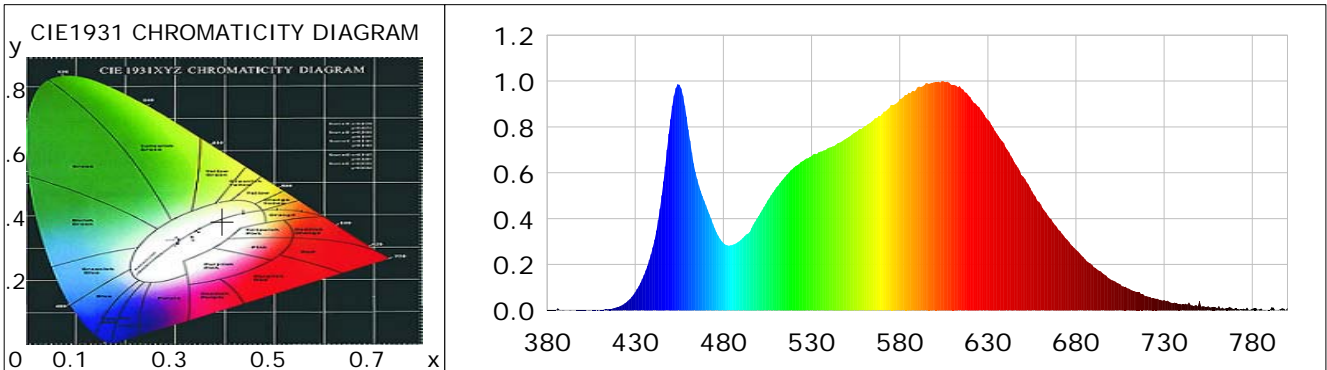
Product Information

Product Category: LED-PL-Röhre
 Product Spec: LED-PL-2G10-4-11W-NWM
 Manufacturer: METOLIGHT
 Buyer: 3258

Product Type: LED-PL-Röhren-2G10
 Product Number: 1
 Submitted Unit: 103371

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3955$ $y=0.3841$ $u(u')=0.2320$ $v=0.3380$ $v'=0.5070$
 CCT: $T_c=3673K$ ($duv=-0.00066$) Color Ratio: $R=0.201$ $G=0.764$ $B=0.035$
 Peak Wavelength: 604.3nm Half Bandwidth: 149.8nm
 Dominant Wavelength: 580.6nm Color Purity: 0.340
 CRI: $R_a = 86.0$, $avgR(1\sim14) = 80.5$, $avgR(1\sim15) = 80.4$ TM30: $R_f = 85$, $R_g = 96$
 GAI: $GAI_BB_8=94.7$, $GAI_BB_15=102.3$, $GAI_EES=69.2$
 R1 =85 R2 =92 R3 =96 R4 =84 R5 =85 R6 =89 R7 =86 R8 =69
 R9 =24 R10=81 R11=84 R12=65 R13=87 R14=98 R15=80
 Color Quality Scale: $Q_a = 85.1$, $Q_f = 85.2$, $Q_p = 85.1$, $Q_g = 93.9$
 Q1 =84 Q2 =98 Q3 =82 Q4 =78 Q5 =83 Q6 =85 Q7 =88 Q8 =90
 Q9 =98 Q10=91 Q11=88 Q12=87 Q13=87 Q14=78 Q15=80



Photometric Parameters

Luminous Flux: 864.55 lm Efficiency: 80.05 lm/W Radiant Power: 2.641 W
 Total mains efficacy: 94.14 lm/W Energy Efficiency Class: F (EU 2019/2015)
 Pupil Flux: 1261.40 Plm Pupil Lumens Per Watt: 116.80 Plm/W Pupil Factor (Kp): 1.459
 Circopic Flux: 2525.13 lm

Electric Parameters

Voltage: 230.80V Current: 0.0490A Power: 10.80W
 Power Factor: 0.9550 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: 46172 (2683) CCD Integration Time: 457.80 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0012	0.0192	525	0.6513	10.1057	670	0.3523	5.4667
385	0.0016	0.0254	530	0.6726	10.4359	675	0.3084	4.7849
390	0.0012	0.0182	535	0.6921	10.7386	680	0.2640	4.0961
395	0.0004	0.0057	540	0.7095	11.0082	685	0.2236	3.4692
400	0.0011	0.0164	545	0.7295	11.3198	690	0.1885	2.9249
405	0.0003	0.0050	550	0.7507	11.6480	695	0.1614	2.5042
410	0.0029	0.0455	555	0.7767	12.0509	700	0.1332	2.0671
415	0.0061	0.0945	560	0.8024	12.4506	705	0.1140	1.7681
420	0.0149	0.2312	565	0.8289	12.8619	710	0.0948	1.4712
425	0.0350	0.5432	570	0.8559	13.2808	715	0.0798	1.2384
430	0.0790	1.2264	575	0.8953	13.8911	720	0.0615	0.9541
435	0.1537	2.3844	580	0.9212	14.2930	725	0.0512	0.7937
440	0.2744	4.2572	585	0.9489	14.7233	730	0.0449	0.6968
445	0.5012	7.7775	590	0.9723	15.0860	735	0.0318	0.4936
450	0.8333	12.9302	595	0.9917	15.3872	740	0.0257	0.3983
455	0.9843	15.2720	600	0.9949	15.4365	745	0.0234	0.3627
460	0.7894	12.2479	605	0.9984	15.4922	750	0.0410	0.6368
465	0.5738	8.9031	610	0.9822	15.2403	755	0.0176	0.2728
470	0.4593	7.1263	615	0.9682	15.0232	760	0.0093	0.1447
475	0.3586	5.5637	620	0.9301	14.4324	765	0.0097	0.1505
480	0.2938	4.5585	625	0.8860	13.7474	770	0.0080	0.1240
485	0.2851	4.4236	630	0.8310	12.8935	775	0.0076	0.1179
490	0.3072	4.7665	635	0.7711	11.9641	780	0.0064	0.1000
495	0.3414	5.2979	640	0.7112	11.0347	785	0.0080	0.1245
500	0.4118	6.3901	645	0.6459	10.0214	790	0.0026	0.0399
505	0.4789	7.4300	650	0.5829	9.0451	795	0.0025	0.0383
510	0.5365	8.3240	655	0.5190	8.0532	800	0.0123	0.1909
515	0.5822	9.0336	660	0.4622	7.1714			
520	0.6231	9.6686	665	0.4032	6.2560			

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

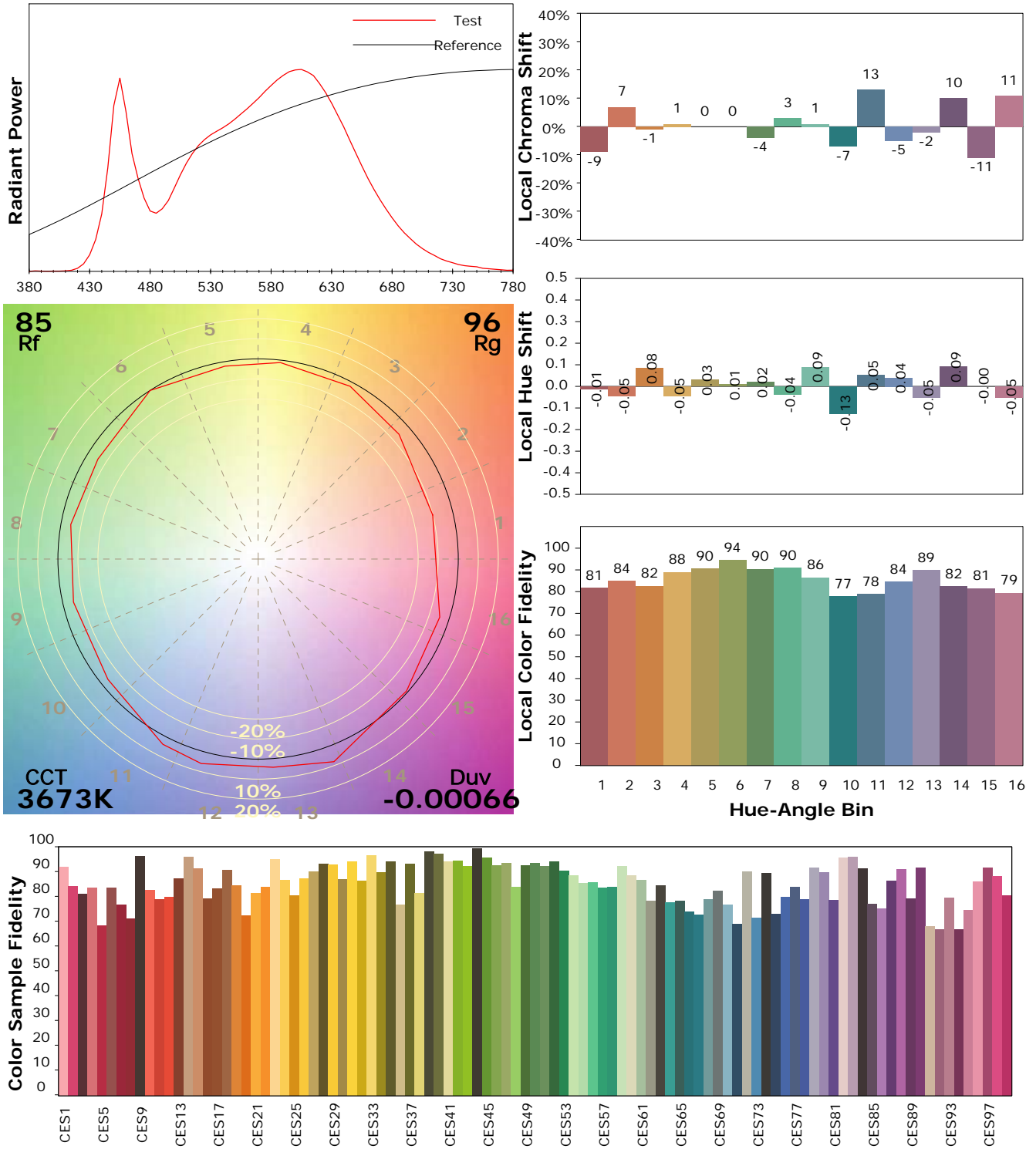
Test Device: Lisun LMS-9000B
 Test Time: 2021-03-05 11:45:23
 Inspector:

IES TM-30-18 Color Rendition Report

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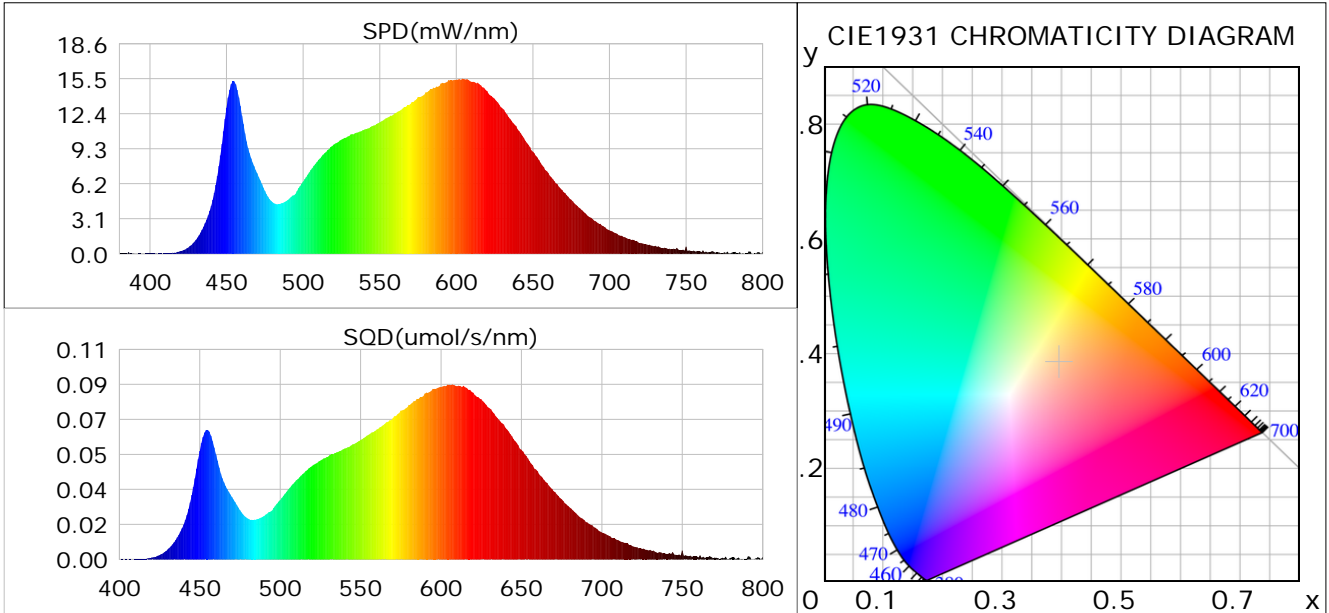
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-03-05 11:45:23
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3955$ $y=0.3841$ $u(u')=0.2320$ $v=0.3380$ $v'=0.5070$
 CCT: $T_c=3673K$ ($duv=-0.00066$) Color Ratio: $R=0.201$ $G=0.764$ $B=0.035$
 Peak Wavelength: 604.3nm Half Bandwidth: 149.8nm
 Dominant Wavelength: 580.6nm Color Purity: 0.340
 CRI: $R_a=86.0$



Plant Optical Param

$ \mu_v(lm): 864.55$	$Q_v(lm.s): 864.55$
$ \mu_e, \dot{E}(W/nm): 2.64$	$Q_e(J): 2.64$
$ \mu_e(W): 2.59$	$ \mu_{fr}(W): 0.05$
$ \dot{C}_e: 0.24$	$ \dot{C}_{fr}: 0.01$
$PPE(umol/s/w): 1.13$	$K_{fr}: 0.03$
$Erb_Ratio: 1.78$	$PPF(umol/s): 12.25$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 1.97$
$PPF(500-600)(umol/s): 5.47$	$PPF(600-700)(umol/s): 4.82$
$PPF_{fr}(700-800)(umol/s): 0.32$	$PPF.t(umol): 12.25$
$ \mu_{ch-A.t}(J): 0.20$	$ \mu_{ch-A}(W): 0.20$
$ \mu_{ch-B.t}(J): 0.12$	$ \mu_{ch-B}(W): 0.12$
$ \mu_b.t(J): 0.51$	$ \mu_b(W): 0.51$
$ \mu_y.t(J): 1.18$	$ \mu_y(W): 1.18$
$ \mu_r.t(J): 0.92$	$ \mu_r(W): 0.92$

Electric Parameters

Voltage: 230.80V	Current: 0.0490A	Power: 10.80W
Power Factor: 0.9550	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: 2021-03-05 11:45:23
 Inspector: