

## Lightsource Test Report

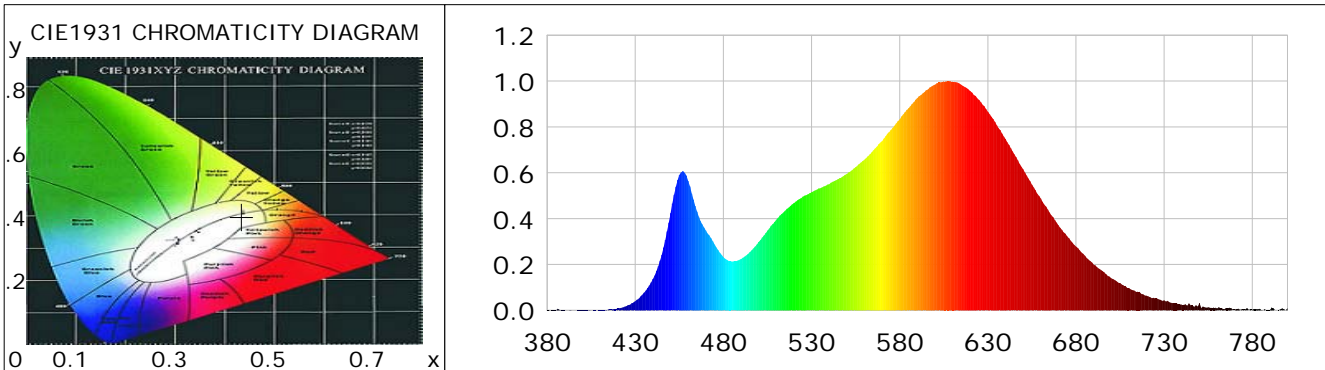
### Product Infomation

Product Category: LED-PL-Röhren  
 Product Spec: LED-PL-G24D-08-WW  
 Manufacturer: METOLIGHT  
 Buyer: 2320

Product Type: LED-PL-Röhren-G24  
 Product Number: 1  
 Submitted Unit: 101992

### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.4345$   $y=0.3989$   $u(u')=0.2512$   $v=0.3460$   $v'=0.5190$   
 CCT:  $T_c=3000K$  ( $duv=-0.00173$ ) Color Ratio:  $R=0.236$   $G=0.736$   $B=0.028$   
 Peak Wavelength: 607.8nm Half Bandwidth: 132.9nm  
 Dominant Wavelength: 583.5nm Color Purity: 0.501  
 CRI:  $R_a=85.4$ ,  $avgR(1\sim14)=80.9$ ,  $avgR(1\sim15)=80.7$  TM30:  $R_f=85$ ,  $R_g=95$   
 GAI:  $GAI\_BB\_8=97.9$ ,  $GAI\_BB\_15=106.5$ ,  $GAI\_EES=56.2$   
 R1 =85 R2 =94 R3 =96 R4 =83 R5 =86 R6 =93 R7 =82 R8 =63  
 R9 =20 R10=86 R11=83 R12=73 R13=88 R14=99 R15=78  
 Color Quality Scale:  $Q_a=84.3$ ,  $Q_f=85.7$ ,  $Q_p=86.1$ ,  $Q_g=92.5$   
 Q1 =81 Q2 =94 Q3 =84 Q4 =80 Q5 =83 Q6 =85 Q7 =86 Q8 =87  
 Q9 =96 Q10=91 Q11=88 Q12=86 Q13=85 Q14=76 Q15=78



### Photometric Parameters

Luminous Flux: 599.71 lm Efficiency: 78.29 lm/W Radiant Power: 1.839 W  
 Total mains efficacy: 92.07 lm/W Energy Efficiency Class: F (EU 2019/2015)  
 Pupil Flux: 775.54 Plm Pupil Lumens Per Watt: 101.24 Plm/W Pupil Factor (Kp): 1.293  
 Cirtopic Flux: 1457.89 lm

### Electric Parameters

Voltage: 230.50V Current: 0.0350A Power: 7.66W  
 Power Factor: 0.9320 Frequency: 49.99Hz

### Test Infomation

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: 45651 (2640) CCD Integration Time: 517.51 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0017	0.0214	525	0.4960	6.1297	670	0.3717	4.5937
385	0.0014	0.0169	530	0.5145	6.3587	675	0.3228	3.9891
390	0.0011	0.0141	535	0.5332	6.5894	680	0.2787	3.4450
395	0.0002	0.0030	540	0.5502	6.8004	685	0.2381	2.9424
400	0.0011	0.0130	545	0.5724	7.0745	690	0.1995	2.4659
405	0.0002	0.0028	550	0.5950	7.3535	695	0.1714	2.1182
410	0.0013	0.0160	555	0.6244	7.7176	700	0.1400	1.7297
415	0.0043	0.0537	560	0.6573	8.1239	705	0.1190	1.4712
420	0.0087	0.1078	565	0.6976	8.6213	710	0.0975	1.2054
425	0.0185	0.2290	570	0.7381	9.1227	715	0.0810	1.0016
430	0.0401	0.4960	575	0.7872	9.7294	720	0.0635	0.7853
435	0.0774	0.9570	580	0.8333	10.2991	725	0.0522	0.6456
440	0.1367	1.6890	585	0.8815	10.8952	730	0.0438	0.5410
445	0.2424	2.9960	590	0.9257	11.4411	735	0.0318	0.3934
450	0.4238	5.2377	595	0.9602	11.8667	740	0.0246	0.3035
455	0.5906	7.2993	600	0.9849	12.1720	745	0.0220	0.2719
460	0.5645	6.9763	605	0.9984	12.3398	750	0.0321	0.3968
465	0.4308	5.3240	610	0.9973	12.3254	755	0.0136	0.1682
470	0.3487	4.3101	615	0.9842	12.1645	760	0.0085	0.1044
475	0.2871	3.5485	620	0.9565	11.8213	765	0.0096	0.1181
480	0.2321	2.8683	625	0.9174	11.3381	770	0.0038	0.0474
485	0.2129	2.6308	630	0.8656	10.6987	775	0.0044	0.0541
490	0.2239	2.7670	635	0.8077	9.9828	780	0.0035	0.0435
495	0.2537	3.1356	640	0.7469	9.2317	785	0.0035	0.0437
500	0.2981	3.6841	645	0.6809	8.4156	790	0.0019	0.0229
505	0.3481	4.3018	650	0.6152	7.6035	795	0.0019	0.0240
510	0.3952	4.8846	655	0.5485	6.7791	800	0.0107	0.1323
515	0.4346	5.3714	660	0.4881	6.0321			
520	0.4678	5.7817	665	0.4270	5.2774			

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

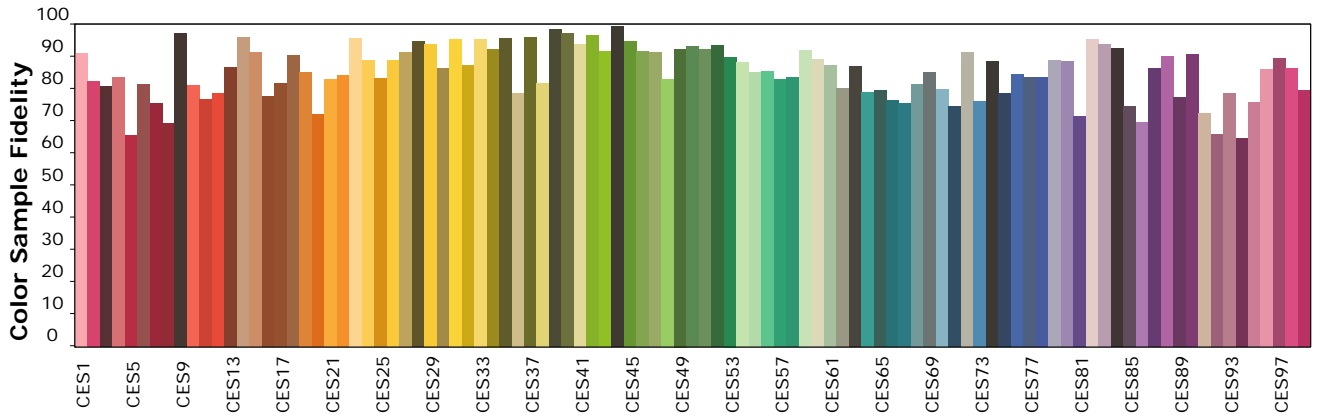
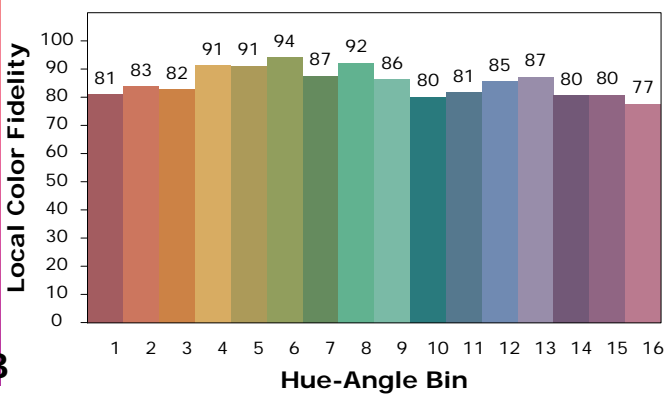
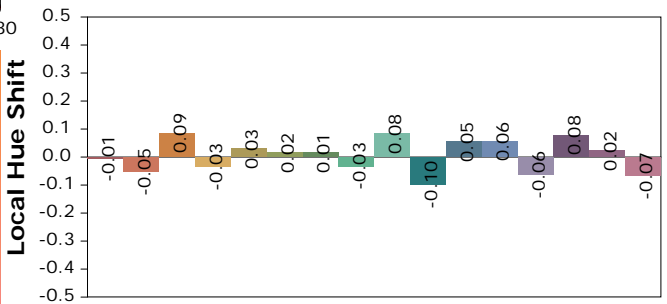
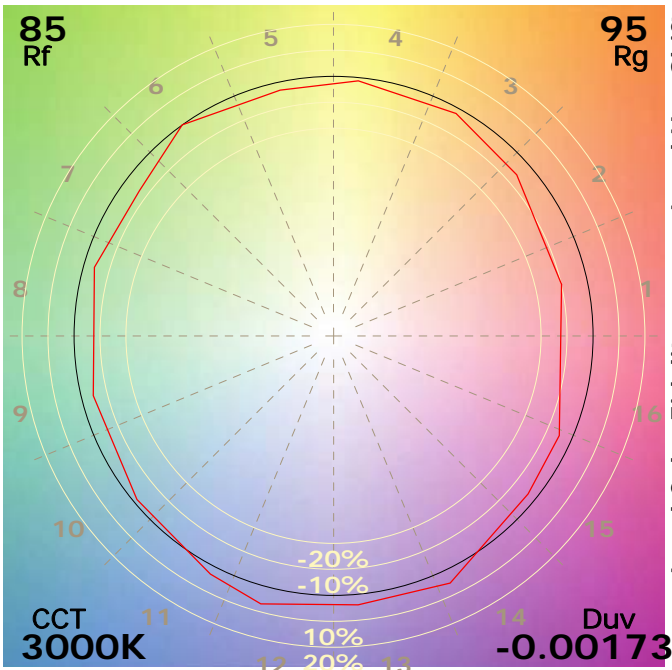
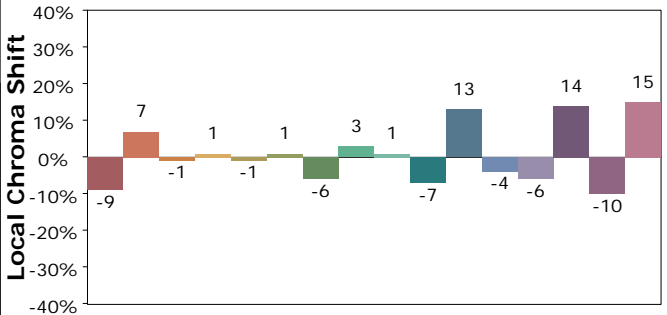
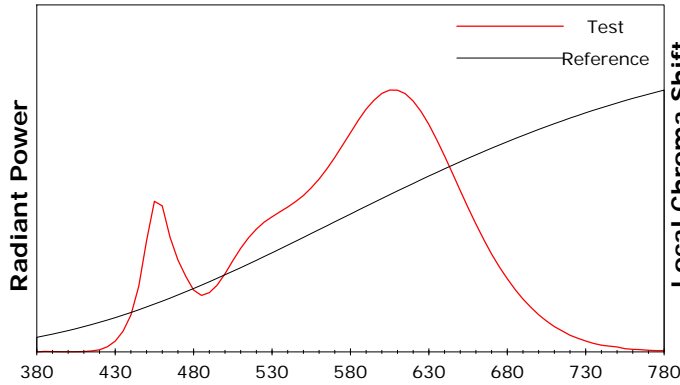
Test Device: Lisun LMS-9000B  
 Test Time: 2021-03-03 13:38:02  
 Inspector:

## IES TM-30-18 Color Rendition Report

### Product Information

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 Manufacturer: METOLIGHT  
 Buyer: 2320

Product Type: LED-PL-Röhren-G24  
 Product Number: 1  
 Submitted Unit: 101992



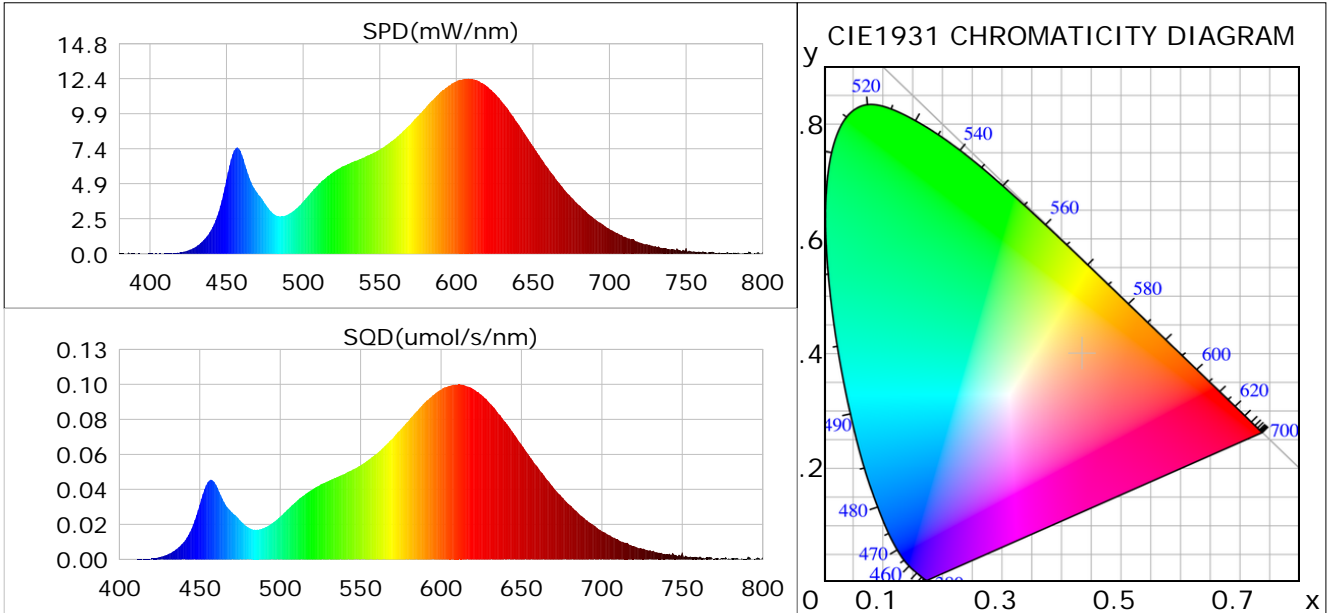
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%  
 Test Lab:  
 Operator: CRE

Test Device: Lisun LMS-9000B  
 Test Time: 2021-03-03 13:38:02  
 Inspector:

## Plant optical param data

### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.4345$   $y=0.3989$   $u(u')=0.2512$   $v=0.3460$   $v'=0.5190$   
 CCT:  $T_c=3000K$  ( $duv=-0.00173$ ) Color Ratio:  $R=0.236$   $G=0.736$   $B=0.028$   
 Peak Wavelength: 607.8nm Half Bandwidth: 132.9nm  
 Dominant Wavelength: 583.5nm Color Purity: 0.501  
 CRI:  $R_a=85.4$



### Plant Optical Param

$ \mu_v(lm): 599.71$	$Q_v(lm.s): 599.71$
$ \mu_e, \dot{E}(W/nm): 1.84$	$Q_e(J): 1.84$
$ \mu_e(W): 1.80$	$ \mu_{fr}(W): 0.04$
$ \zeta_e: 0.23$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.13$	$K_{fr}: 0.03$
$Erb\_Ratio: 2.83$	$PPF(umol/s): 8.68$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 1.03$
$PPF(500-600)(umol/s): 3.68$	$PPF(600-700)(umol/s): 3.98$
$PPF_r(700-800)(umol/s): 0.25$	$PPF.t(umol): 8.68$
$ \mu_{ch-A.t}(J): 0.14$	$ \mu_{ch-A}(W): 0.14$
$ \mu_{ch-B.t}(J): 0.07$	$ \mu_{ch-B}(W): 0.07$
$ \mu_b.t(J): 0.26$	$ \mu_b(W): 0.26$
$ \mu_y.t(J): 0.79$	$ \mu_y(W): 0.79$
$ \mu_r.t(J): 0.76$	$ \mu_r(W): 0.76$

### Electric Parameters

Voltage: 230.50V	Current: 0.0350A	Power: 7.66W
Power Factor: 0.9320	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 13:38:02  
 Inspector: