

## Lightsource Test Report

### Product Information

Product Category: LED-PL-Röhren  
 Product Spec: LED-PL-G24D-06-CW  
 Manufacturer: METOLIGHT  
 Buyer: 2320

Product Type: LED-PL-Röhren-G24  
 Product Number: 1  
 Submitted Unit: 101965

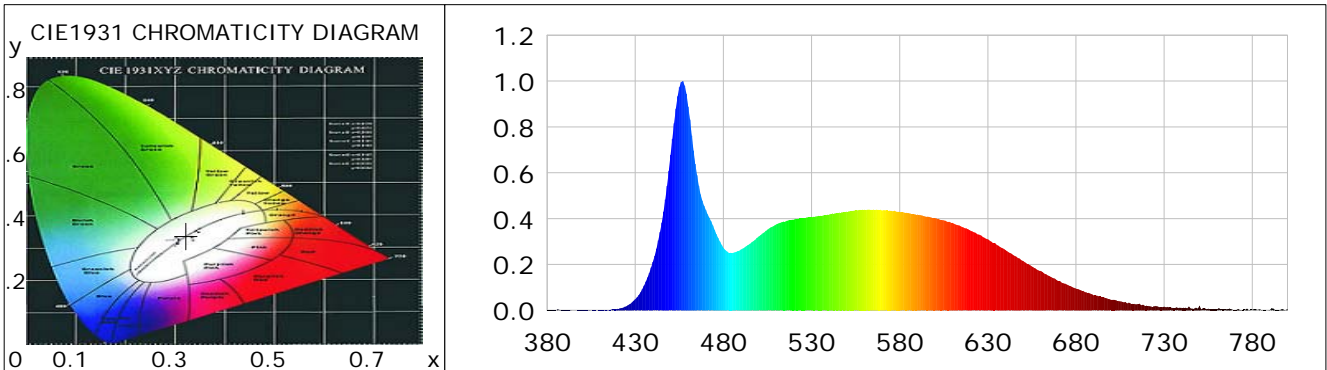
### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.3222$   $y=0.3390$   $u(u')=0.2007$   $v=0.3166$   $v'=0.4749$   
 CCT:  $T_c=5972K$  ( $duv=0.00362$ ) Color Ratio:  $R=0.147$   $G=0.792$   $B=0.061$   
 Peak Wavelength: 456.7nm Half Bandwidth: 19.9nm  
 Dominant Wavelength: 498.4nm Color Purity: 0.034  
 CRI:  $R_a=87.0$ ,  $avgR(1\sim14)=81.6$ ,  $avgR(1\sim15)=81.7$  TM30:  $R_f=84$ ,  $R_g=93$   
 GAI:  $GAI\_BB\_8=90.9$ ,  $GAI\_BB\_15=97.0$ ,  $GAI\_EES=86.3$   

R1 =87	R2 =94	R3 =95	R4 =83	R5 =85	R6 =89	R7 =88	R8 =74
R9 =31	R10=85	R11=83	R12=60	R13=90	R14=98	R15=83	

Color Quality Scale:  $Q_a=84.5$ ,  $Q_f=84.7$ ,  $Q_p=83.6$ ,  $Q_g=91.9$   

Q1 =82	Q2 =97	Q3 =83	Q4 =75	Q5 =79	Q6 =81	Q7 =87	Q8 =91
Q9 =98	Q10=93	Q11=89	Q12=87	Q13=87	Q14=79	Q15=81	



### Photometric Parameters

Luminous Flux: 677.94 lm Efficiency: 118.31 lm/W Radiant Power: 2.195 W  
 Total mains efficacy: 139.14 lm/W Energy Efficiency Class: D (EU 2019/2015)  
 Pupil Flux: 1277.10 Plm Pupil Lumens Per Watt: 222.88 Plm/W Pupil Factor (Kp): 1.884  
 Circopic Flux: 2965.05 lm

### Electric Parameters

Voltage: 230.80V Current: 0.0270A Power: 5.73W  
 Power Factor: 0.8980 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: 46119 (2532) CCD Integration Time: 299.34 ms

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

Test Device: Lisun LMS-9000B  
 Test Time: 2021-03-03 13:52:42  
 Inspector:

## Lightsource Test Report

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0016	0.0376	525	0.4019	9.3713	670	0.1273	2.9686
385	0.0011	0.0255	530	0.4058	9.4617	675	0.1121	2.6135
390	0.0008	0.0184	535	0.4122	9.6104	680	0.0953	2.2209
395	0.0007	0.0154	540	0.4175	9.7350	685	0.0801	1.8686
400	0.0017	0.0400	545	0.4247	9.9018	690	0.0656	1.5297
405	0.0003	0.0072	550	0.4305	10.0373	695	0.0566	1.3201
410	0.0019	0.0445	555	0.4369	10.1870	700	0.0460	1.0730
415	0.0035	0.0820	560	0.4384	10.2216	705	0.0395	0.9206
420	0.0068	0.1576	565	0.4392	10.2402	710	0.0337	0.7867
425	0.0180	0.4205	570	0.4350	10.1422	715	0.0277	0.6463
430	0.0487	1.1353	575	0.4344	10.1277	720	0.0206	0.4794
435	0.1076	2.5089	580	0.4298	10.0216	725	0.0189	0.4398
440	0.2112	4.9232	585	0.4241	9.8891	730	0.0164	0.3829
445	0.3831	8.9326	590	0.4176	9.7359	735	0.0109	0.2538
450	0.6785	15.8191	595	0.4089	9.5342	740	0.0108	0.2507
455	0.9737	22.7018	600	0.4025	9.3846	745	0.0090	0.2093
460	0.8894	20.7357	605	0.3926	9.1531	750	0.0202	0.4711
465	0.5895	13.7444	610	0.3812	8.8876	755	0.0072	0.1690
470	0.4383	10.2183	615	0.3652	8.5154	760	0.0049	0.1148
475	0.3511	8.1866	620	0.3484	8.1226	765	0.0048	0.1114
480	0.2733	6.3731	625	0.3302	7.6989	770	0.0034	0.0803
485	0.2504	5.8375	630	0.3098	7.2226	775	0.0036	0.0830
490	0.2653	6.1853	635	0.2861	6.6696	780	0.0040	0.0940
495	0.2902	6.7661	640	0.2626	6.1234	785	0.0034	0.0803
500	0.3219	7.5052	645	0.2383	5.5555	790	0.0027	0.0625
505	0.3520	8.2069	650	0.2152	5.0186	795	0.0015	0.0346
510	0.3749	8.7418	655	0.1913	4.4599	800	0.0080	0.1861
515	0.3870	9.0227	660	0.1718	4.0051			
520	0.3964	9.2428	665	0.1492	3.4778			

Condition: Tx:0.0°C, Ti:0.0°C, R.H.:60%  
 Test Lab:  
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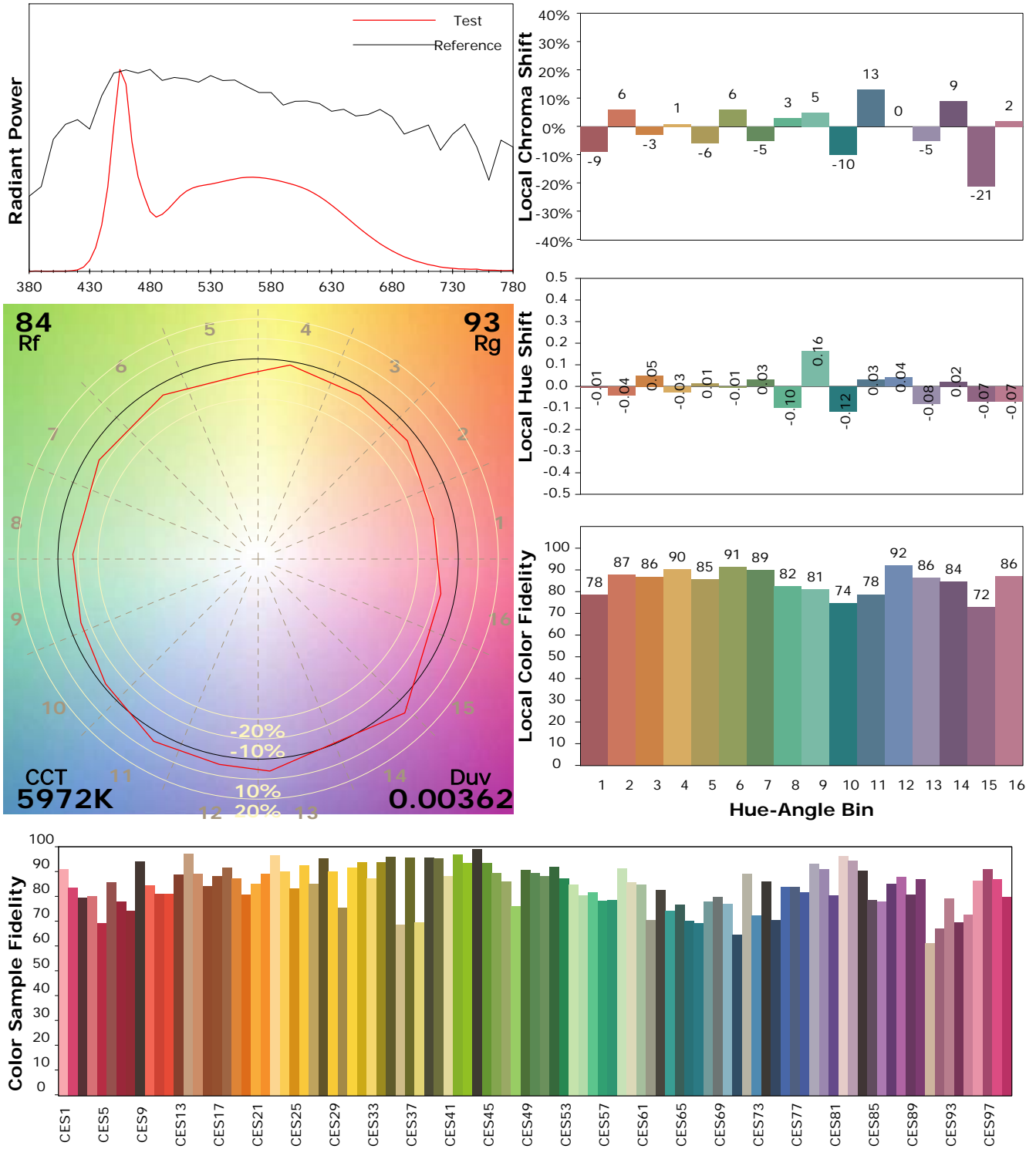
Test Device: Lisun LMS-9000B  
 Test Time: 2021-03-03 13:52:42  
 Inspector:

## IES TM-30-18 Color Rendition Report

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 Buyer: 2320

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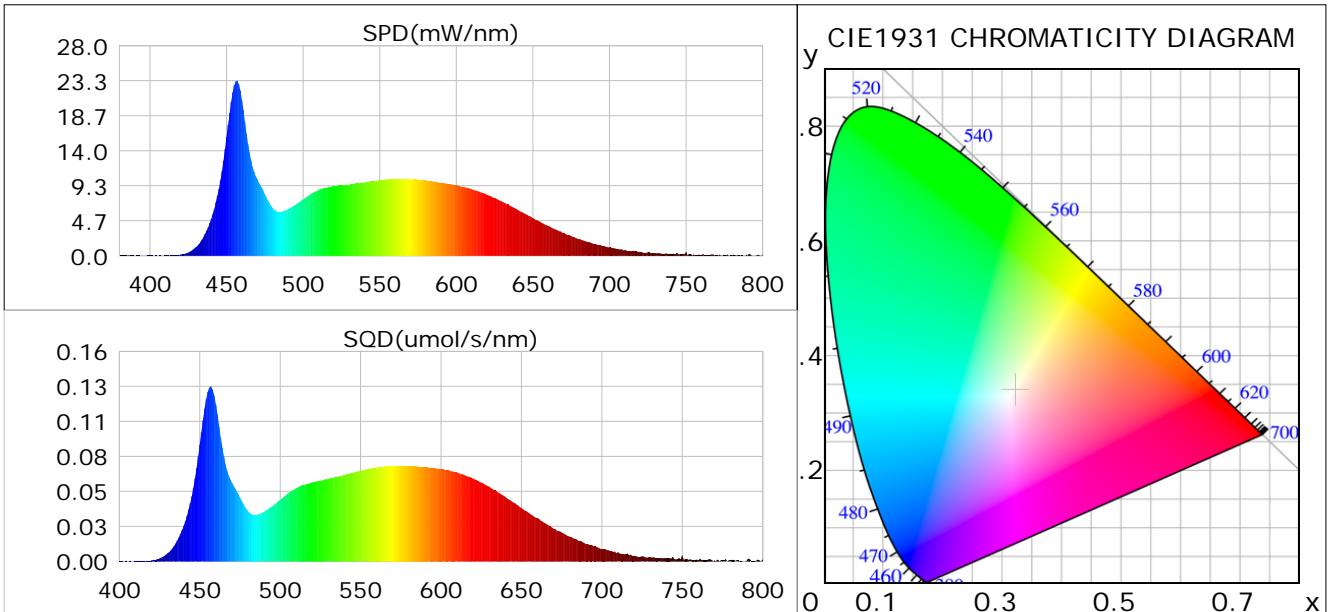
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%  
 Test Lab:  
 Operator: CRE

Test Device: Lisun LMS-9000B  
 Test Time: 2021-03-03 13:52:42  
 Inspector:

## Plant optical param data

### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.3222$   $y=0.3390$   $u(u')=0.2007$   $v=0.3166$   $v'=0.4749$   
 CCT:  $T_c=5972K$  ( $duv=0.00362$ ) Color Ratio:  $R=0.147$   $G=0.792$   $B=0.061$   
 Peak Wavelength: 456.7nm Half Bandwidth: 19.9nm  
 Dominant Wavelength: 498.4nm Color Purity: 0.034  
 CRI:  $R_a=87.0$



### Plant Optical Param

$ \mu_v(\text{lm})$ : 677.94	$Q_v(\text{lm}\cdot\text{s})$ : 677.94
$ \mu_e, \dot{E}(\text{W/nm})$ : 2.20	$Q_e(\text{J})$ : 2.20
$ \mu_e(\text{W})$ : 2.17	$ \mu_{fr}(\text{W})$ : 0.03
$ \zeta_e$ : 0.38	$ \zeta_{fr}$ : 0.01
PPE( $\mu\text{mol/s/w}$ ): 1.72	Kfr: 0.03
Erb_Ratio: 0.73	PPF( $\mu\text{mol/s}$ ): 9.84
PFuv(360-400)( $\mu\text{mol/s}$ ): 0.00	PPF(400-500)( $\mu\text{mol/s}$ ): 2.70
PPF(500-600)( $\mu\text{mol/s}$ ): 4.43	PPF(600-700)( $\mu\text{mol/s}$ ): 2.70
PPfr(700-800)( $\mu\text{mol/s}$ ): 0.18	PPF.t( $\mu\text{mol}$ ): 9.84
$ \mu_{ch-A.t}(\text{J})$ : 0.17	$ \mu_{ch-A}(\text{W})$ : 0.17
$ \mu_{ch-B.t}(\text{J})$ : 0.13	$ \mu_{ch-B}(\text{W})$ : 0.13
$ \mu_b.t(\text{J})$ : 0.70	$ \mu_b(\text{W})$ : 0.70
$ \mu_y.t(\text{J})$ : 0.97	$ \mu_y(\text{W})$ : 0.97
$ \mu_r.t(\text{J})$ : 0.52	$ \mu_r(\text{W})$ : 0.52

### Electric Parameters

Voltage: 230.80V	Current: 0.0270A	Power: 5.73W
Power Factor: 0.8980	Frequency: 49.99Hz	

Condition:  $T_x=0.0^\circ\text{C}$ ,  $T_i=0.0^\circ\text{C}$ , R.H.: 60%  
 Test Lab:  
 Operator: CRE

Test Device: Lisun LMS-9000B  
 Test Time: 2021-03-03 13:52:42  
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