

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-150-10DWC-28W-2120-230
 Manufacturer: METOLIGHT
 Buyer: 4624
 Product Type: LED-Röhre-SCE
 Product Number: 1
 Submitted Unit: 103875

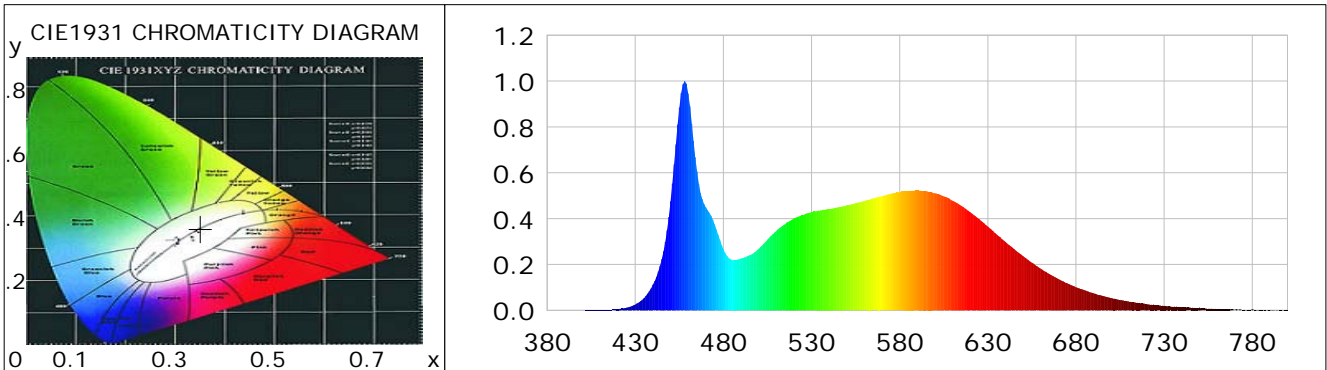
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3513$ $y=0.3612$ $u(u')=0.2118$ $v=0.3268$ $v'=0.4902$
 CCT: $T_c=4812K$ ($duv=0.00237$) Color Ratio: $R=0.163$ $G=0.787$ $B=0.050$
 Peak Wavelength: 458.0nm Half Bandwidth: 17.1nm
 Dominant Wavelength: 572.8nm Color Purity: 0.138
 CRI: $R_a=83.2$, $avgR(1\sim14)=76.5$, $avgR(1\sim15)=76.6$ TM30: $R_f=80$, $R_g=90$
 GAI: $GAI_BB_8=86.4$, $GAI_BB_15=94.9$, $GAI_EES=77.2$

R1 =83	R2 =93	R3 =95	R4 =77	R5 =81	R6 =88	R7 =83	R8 =65
R9 =10	R10=82	R11=76	R12=53	R13=87	R14=98	R15=77	

Color Quality Scale: $Q_a=81.2$, $Q_f=81.6$, $Q_p=79.3$, $Q_g=88.8$

Q1 =77	Q2 =94	Q3 =82	Q4 =72	Q5 =74	Q6 =76	Q7 =82	Q8 =89
Q9 =97	Q10=93	Q11=88	Q12=86	Q13=85	Q14=73	Q15=76	



Photometric Parameters

Luminous Flux: 3521.1 lm Efficiency: 123.33 lm/W Radiant Power: 10.790 W
 Total mains efficacy: 123.33 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 5986.77 Plm Pupil Lumens Per Watt: 209.69 Plm/W Pupil Factor (Kp): 1.700
 Circopic Flux: 13208.02 lm

Electric Parameters

Voltage: 230.80V Current: 0.1320A Power: 28.55W
 Power Factor: 0.9300 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: 46339 (2247) CCD Integration Time: 48.73 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0006	0.0614	525	0.4140	45.3395	670	0.1372	15.0266
385	0.0006	0.0698	530	0.4285	46.9321	675	0.1180	12.9260
390	0.0003	0.0382	535	0.4359	47.7407	680	0.1006	11.0165
395	0.0003	0.0321	540	0.4421	48.4224	685	0.0873	9.5595
400	0.0005	0.0597	545	0.4494	49.2149	690	0.0745	8.1555
405	0.0010	0.1044	550	0.4583	50.1935	695	0.0629	6.8837
410	0.0017	0.1905	555	0.4679	51.2389	700	0.0544	5.9614
415	0.0030	0.3282	560	0.4772	52.2655	705	0.0455	4.9839
420	0.0056	0.6187	565	0.4885	53.5019	710	0.0390	4.2690
425	0.0119	1.2985	570	0.4979	54.5331	715	0.0329	3.6052
430	0.0256	2.8050	575	0.5088	55.7275	720	0.0273	2.9870
435	0.0537	5.8863	580	0.5157	56.4769	725	0.0234	2.5594
440	0.1117	12.2324	585	0.5205	57.0075	730	0.0197	2.1561
445	0.2238	24.5151	590	0.5224	57.2119	735	0.0156	1.7100
450	0.4756	52.0814	595	0.5202	56.9662	740	0.0144	1.5731
455	0.8845	96.8646	600	0.5110	55.9610	745	0.0113	1.2348
460	0.9464	103.6421	605	0.4973	54.4587	750	0.0120	1.3113
465	0.6063	66.3947	610	0.4781	52.3616	755	0.0075	0.8229
470	0.4502	49.3017	615	0.4559	49.9262	760	0.0061	0.6665
475	0.3752	41.0945	620	0.4281	46.8844	765	0.0053	0.5798
480	0.2667	29.2098	625	0.3982	43.6080	770	0.0031	0.3388
485	0.2201	24.1057	630	0.3655	40.0255	775	0.0029	0.3149
490	0.2256	24.7117	635	0.3315	36.3019	780	0.0042	0.4597
495	0.2408	26.3723	640	0.2987	32.7127	785	0.0032	0.3548
500	0.2683	29.3838	645	0.2669	29.2293	790	0.0015	0.1595
505	0.3086	33.7989	650	0.2364	25.8867	795	0.0011	0.1192
510	0.3467	37.9642	655	0.2076	22.7405	800	0.0019	0.2082
515	0.3758	41.1570	660	0.1819	19.9157			
520	0.4014	43.9589	665	0.1580	17.2994			

Condition: Tx: 18.7°C, Ti: 0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

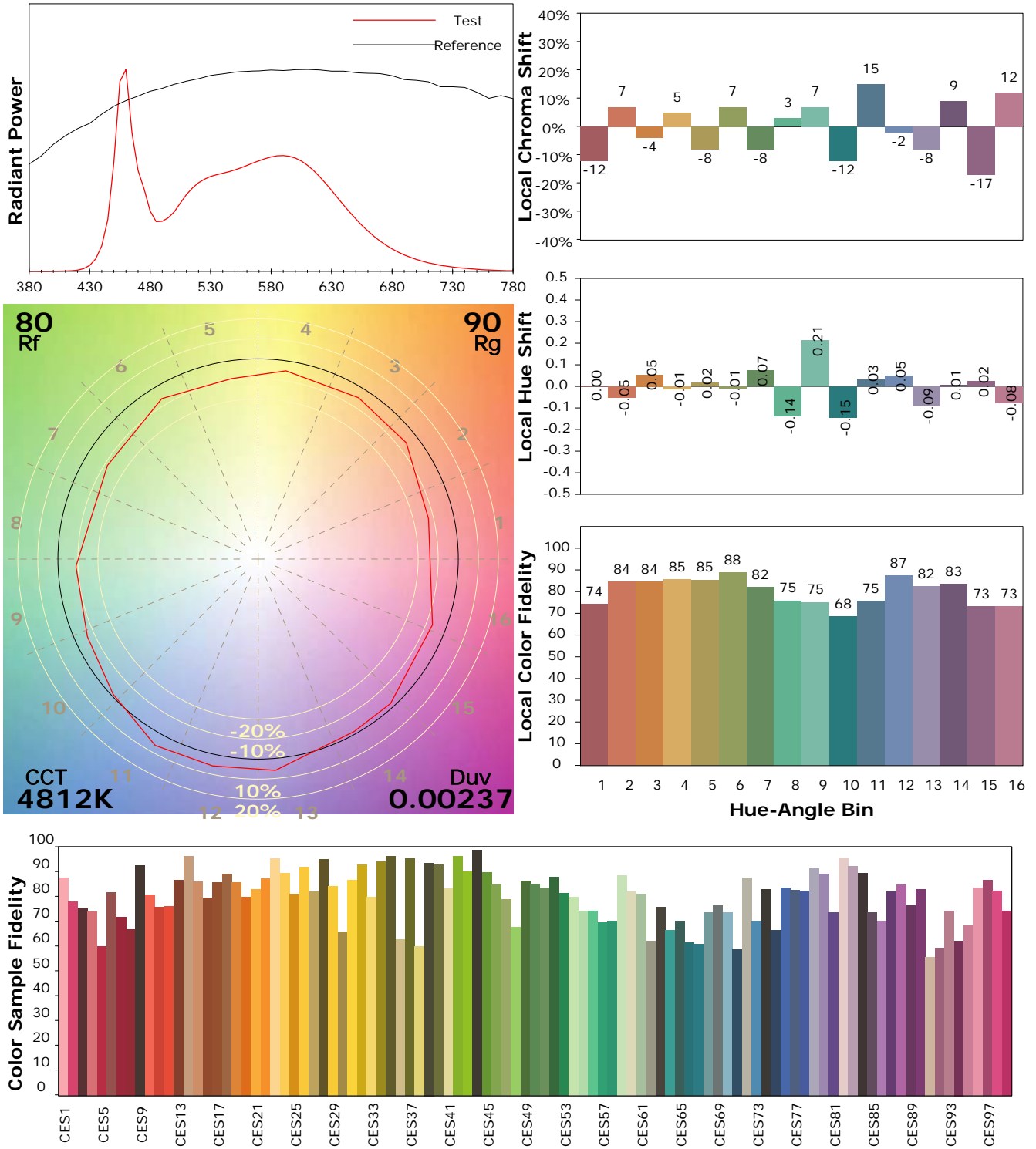
Test Device: Lisun LMS-9000B
 Test Time: 2021-02-19 11:08:13
 Inspector:

IES TM-30-18 Color Rendition Report

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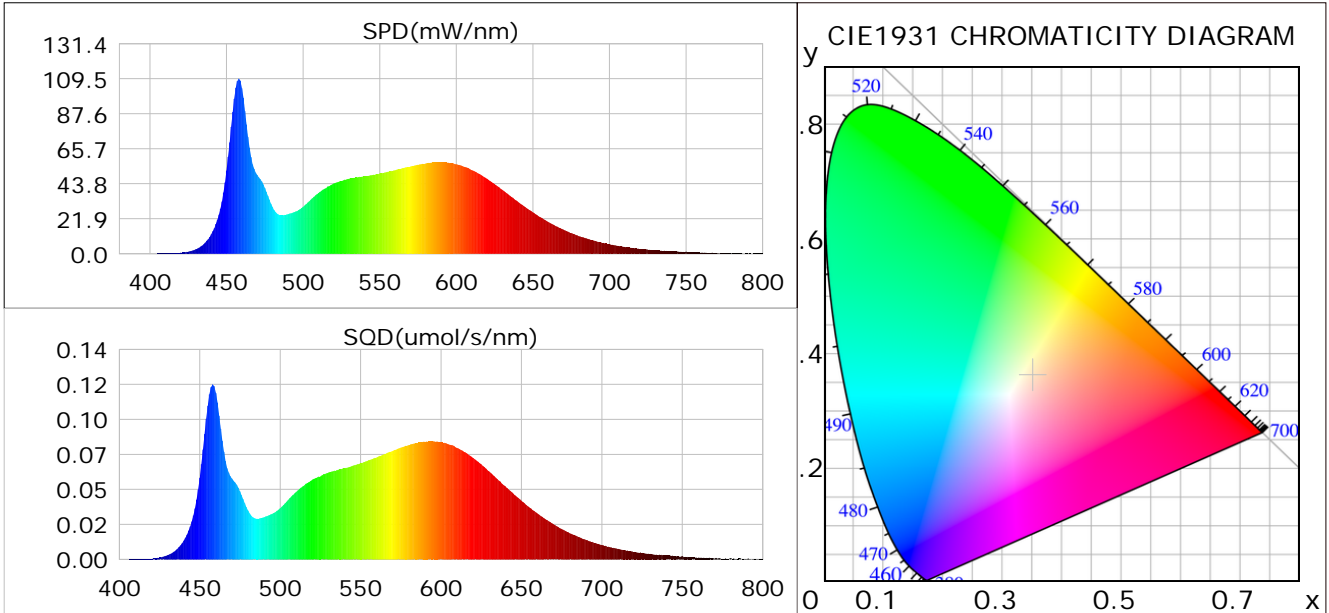
Condition: Tx: 18.7°C, Ti: 0.0°C, R.H.: 60%
 Test Lab: Operator: CRE

Test Device: Lisun LMS-9000B
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Plant optical param data

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 CCT: $T_c=4812K$ ($duv=0.00237$) Color Ratio: $R=0.163$ $G=0.787$ $B=0.050$
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 Dominant Wavelength: 572.8nm Color Purity: 0.138
 CRI: $R_a=83.2$



Plant Optical Param

$ \mu_v(lm): 3521.10$	$Q_v(lm.s): 3521.10$
$ \mu_e, \dot{E}(W/nm): 10.79$	$Q_e(J): 10.79$
$ \mu_e(W): 10.63$	$ \mu_{fr}(W): 0.17$
$ \zeta_e: 0.37$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.72$	$K_{fr}: 0.03$
$Erb_Ratio: 0.97$	$PPF(umol/s): 48.97$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 11.26$
$PPF(500-600)(umol/s): 22.84$	$PPF(600-700)(umol/s): 14.87$
$PPF_{fr}(700-800)(umol/s): 0.99$	$PPF.t(umol): 48.97$
$ \mu_{ch-A.t}(J): 0.76$	$ \mu_{ch-A}(W): 0.76$
$ \mu_{ch-B.t}(J): 0.58$	$ \mu_{ch-B}(W): 0.58$
$ \mu_b.t(J): 2.90$	$ \mu_b(W): 2.90$
$ \mu_y.t(J): 4.96$	$ \mu_y(W): 4.96$
$ \mu_r.t(J): 2.86$	$ \mu_r(W): 2.86$

Electric Parameters

Voltage: 230.80V	Current: 0.1320A	Power: 28.55W
Power Factor: 0.9300	Frequency: 49.99Hz	

Condition: $T_x: 18.7^\circ C$, $T_i: 0.0^\circ C$, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
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