

Lightsource Test Report

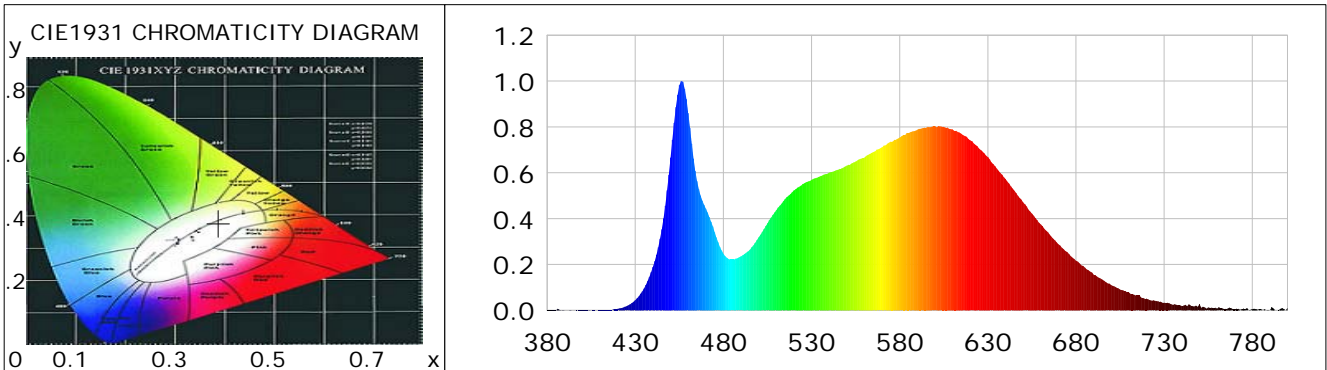
Product Information

Product Category: LED-Röhren
 Product Spec: LEDtube-055-5NWM-7W-DC
 Manufacturer: METOLIGHT
 Buyer: 7709

Product Type: LED-Röhren-TRF
 Product Number: 1
 Submitted Unit: 105258

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3876$ $y=0.3788$ $u(u')=0.2290$ $v=0.3357$ $v'=0.5035$
 CCT: $T_c=3825K$ ($duv=-0.00107$) Color Ratio: $R=0.195$ $G=0.769$ $B=0.036$
 Peak Wavelength: 456.4nm Half Bandwidth: 19.4nm
 Dominant Wavelength: 580.3nm Color Purity: 0.300
 CRI: $R_a=85.7$, $avgR(1\sim14)=79.9$, $avgR(1\sim15)=79.9$ TM30: $R_f=84$, $R_g=95$
 GAI: $GAI_BB_8=94.5$, $GAI_BB_15=102.9$, $GAI_EES=71.8$
 R1 =85 R2 =93 R3 =96 R4 =83 R5 =84 R6 =89 R7 =86 R8 =69
 R9 =25 R10=81 R11=82 R12=60 R13=88 R14=98 R15=81
 Color Quality Scale: $Q_a=84.1$, $Q_f=84.1$, $Q_p=84.1$, $Q_g=93.6$
 Q1 =83 Q2 =97 Q3 =80 Q4 =75 Q5 =80 Q6 =83 Q7 =87 Q8 =89
 Q9 =98 Q10=91 Q11=87 Q12=86 Q13=86 Q14=78 Q15=80



Photometric Parameters

Luminous Flux: 928.80 lm Efficiency: 133.45 lm/W Radiant Power: 2.850 W
 Total mains efficacy: 145.33 lm/W Energy Efficiency Class: D (EU 2019/2015)
 Pupil Flux: 1386.31 Plm Pupil Lumens Per Watt: 199.18 Plm/W Pupil Factor (Kp): 1.493
 Circopic Flux: 2823.34 lm

Electric Parameters

Voltage: 230.00V Current: 0.0300A Power: 6.96W
 Power Factor: 0.7930 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: 46052 (2739) CCD Integration Time: 315.74 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	0.0352	525	0.5509	11.1210	670	0.2886	5.8265
385	0.0013	0.0260	530	0.5696	11.4976	675	0.2542	5.1319
390	0.0014	0.0276	535	0.5855	11.8192	680	0.2169	4.3779
395	0.0004	0.0075	540	0.6007	12.1251	685	0.1865	3.7644
400	0.0016	0.0318	545	0.6134	12.3819	690	0.1551	3.1303
405	0.0003	0.0059	550	0.6312	12.7411	695	0.1340	2.7040
410	0.0014	0.0281	555	0.6486	13.0916	700	0.1102	2.2234
415	0.0033	0.0675	560	0.6666	13.4559	705	0.0913	1.8428
420	0.0070	0.1403	565	0.6905	13.9383	710	0.0776	1.5661
425	0.0176	0.3560	570	0.7115	14.3613	715	0.0648	1.3078
430	0.0444	0.8968	575	0.7359	14.8544	720	0.0510	1.0305
435	0.0954	1.9265	580	0.7544	15.2279	725	0.0415	0.8374
440	0.1885	3.8051	585	0.7723	15.5894	730	0.0342	0.6894
445	0.3535	7.1349	590	0.7881	15.9079	735	0.0243	0.4912
450	0.6662	13.4471	595	0.7966	16.0804	740	0.0194	0.3924
455	0.9825	19.8321	600	0.8029	16.2064	745	0.0210	0.4243
460	0.8606	17.3707	605	0.8000	16.1488	750	0.0273	0.5508
465	0.5638	11.3813	610	0.7890	15.9257	755	0.0129	0.2596
470	0.4438	8.9579	615	0.7702	15.5466	760	0.0078	0.1576
475	0.3412	6.8880	620	0.7419	14.9748	765	0.0066	0.1328
480	0.2472	4.9891	625	0.7056	14.2420	770	0.0051	0.1029
485	0.2217	4.4753	630	0.6685	13.4933	775	0.0084	0.1689
490	0.2359	4.7626	635	0.6190	12.4949	780	0.0054	0.1094
495	0.2643	5.3352	640	0.5727	11.5598	785	0.0043	0.0877
500	0.3184	6.4266	645	0.5228	10.5534	790	0.0003	0.0068
505	0.3804	7.6788	650	0.4708	9.5029	795	0.0015	0.0298
510	0.4370	8.8213	655	0.4221	8.5197	800	0.0118	0.2377
515	0.4859	9.8074	660	0.3752	7.5743			
520	0.5234	10.5650	665	0.3314	6.6901			

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

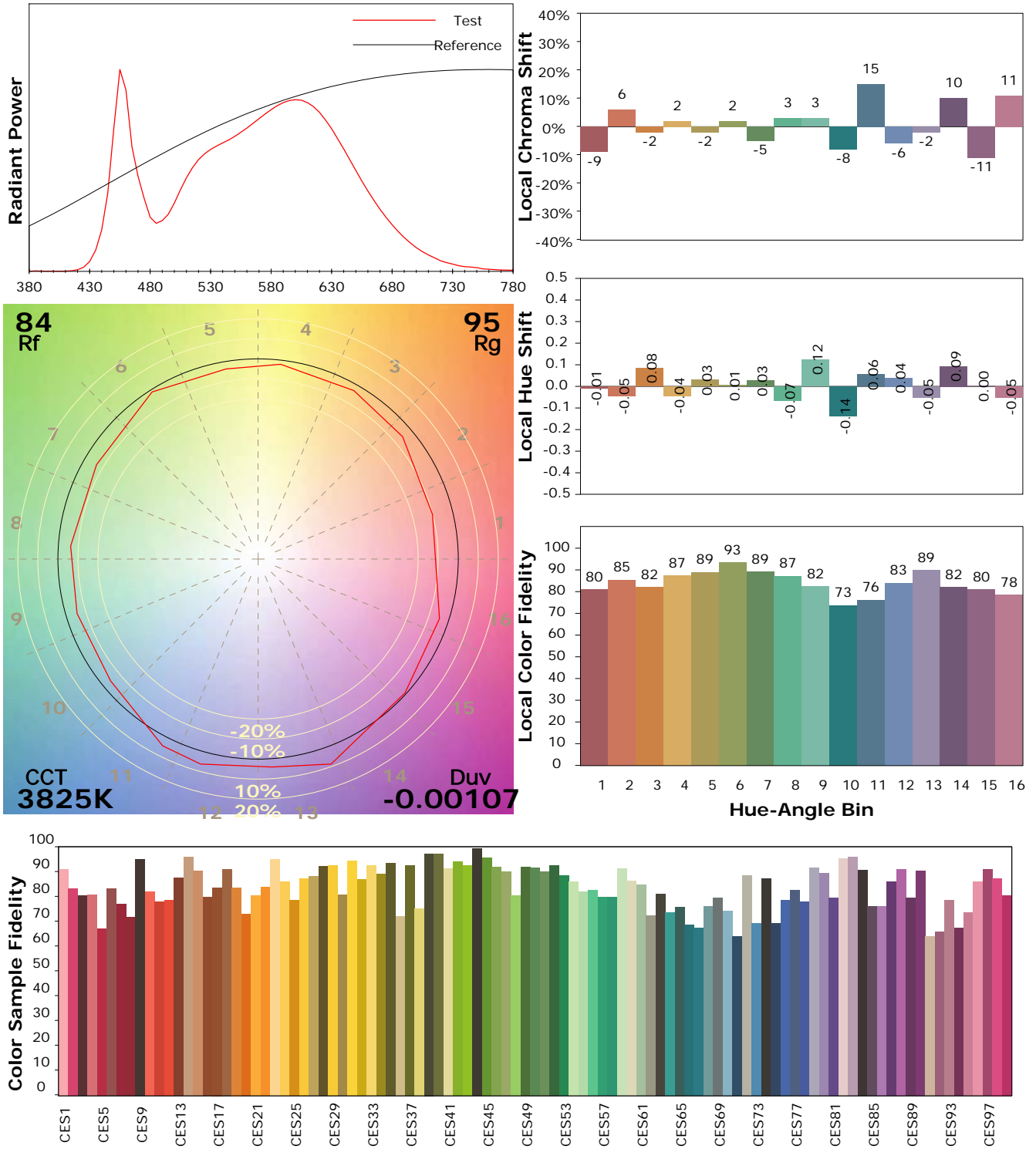
Test Device: Lisun LMS-9000B
 Test Time: 2021-08-26 09:53:36
 Inspector:

IES TM-30-18 Color Rendition Report

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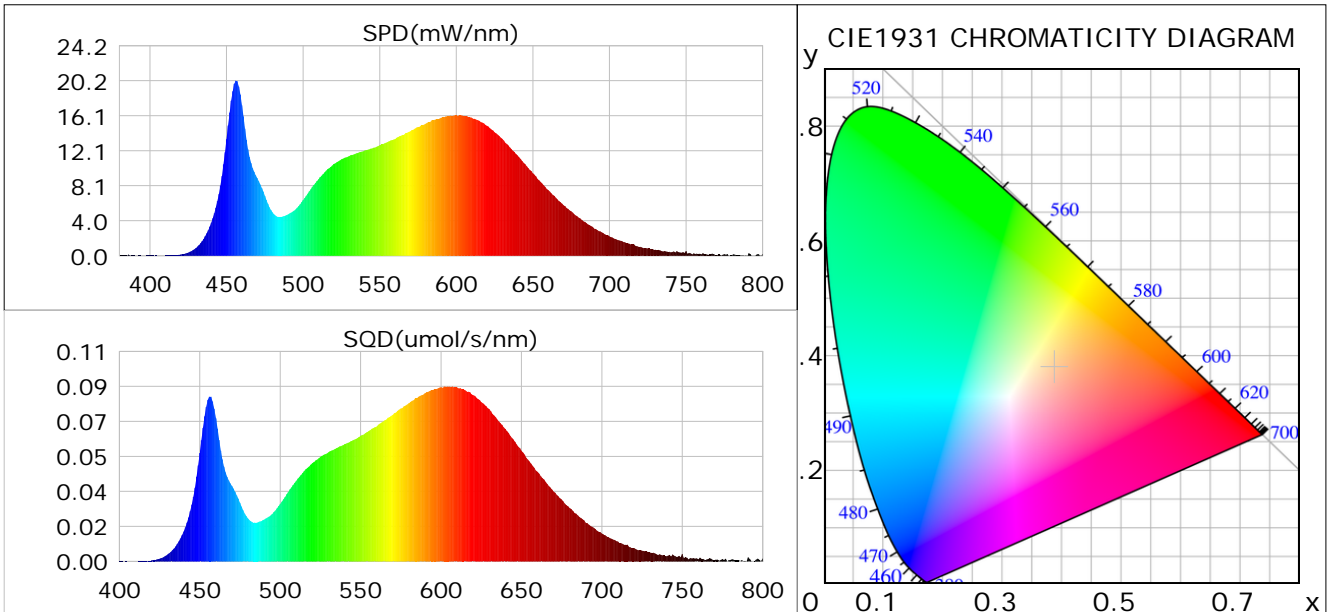
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-08-26 09:53:36
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

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 CCT: $T_c=3825K$ ($duv=-0.00107$) Color Ratio: $R=0.195$ $G=0.769$ $B=0.036$
 Peak Wavelength: 456.4nm Half Bandwidth: 19.4nm
 Dominant Wavelength: 580.3nm Color Purity: 0.300
 CRI: $R_a=85.7$



Plant Optical Param

$ \mu_v(lm): 928.80$	$Q_v(lm.s): 928.80$
$ \mu_e, \dot{E}(W/nm): 2.85$	$Q_e(J): 2.85$
$ \mu_e(W): 2.80$	$ \mu_{fr}(W): 0.06$
$ \zeta_e: 0.40$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.89$	$K_{fr}: 0.05$
$Erb_Ratio: 1.64$	$PPF(umol/s): 13.18$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 2.24$
$PPF(500-600)(umol/s): 5.89$	$PPF(600-700)(umol/s): 5.05$
$PPF_{fr}(700-800)(umol/s): 0.34$	$PPF.t(umol): 13.18$
$ \mu_{ch-A.t}(J): 0.21$	$ \mu_{ch-A}(W): 0.21$
$ \mu_{ch-B.t}(J): 0.13$	$ \mu_{ch-B}(W): 0.13$
$ \mu_b.t(J): 0.58$	$ \mu_b(W): 0.58$
$ \mu_y.t(J): 1.27$	$ \mu_y(W): 1.27$
$ \mu_r.t(J): 0.97$	$ \mu_r(W): 0.97$

Electric Parameters

Voltage: 230.00V	Current: 0.0300A	Power: 6.96W
Power Factor: 0.7930	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: 2021-08-26 09:53:36
 Inspector: