

Lightsource Test Report

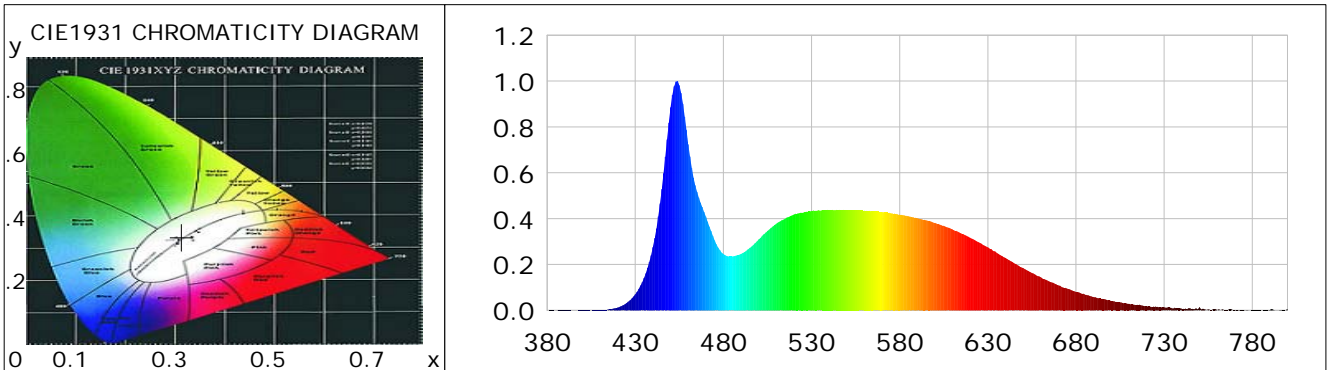
Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-060-10CWM-10W-RAD-A
 Manufacturer: METOLIGHT
 Buyer: 6420

Product Type: LED-Röhre PIR
 Product Number: 1
 Submitted Unit: 103898

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3131$ $y=0.3350$ $u(u')=0.1959$ $v=0.3144$ $v'=0.4715$
 CCT: $T_c=6442K$ ($duv=0.00603$) Color Ratio: $R=0.136$ $G=0.806$ $B=0.058$
 Peak Wavelength: 453.6nm Half Bandwidth: 21.1nm
 Dominant Wavelength: 492.8nm Color Purity: 0.067
 CRI: $R_a=84.6$, $avgR(1\sim14)=77.6$, $avgR(1\sim15)=77.6$ TM30: $R_f=83$, $R_g=93$
 GAI: $GAI_BB_8=89.0$, $GAI_BB_15=95.1$, $GAI_EES=86.6$
 R1 =83 R2 =90 R3 =93 R4 =82 R5 =83 R6 =85 R7 =89 R8 =72
 R9 =16 R10=75 R11=82 R12=55 R13=85 R14=97 R15=78
 Color Quality Scale: $Q_a=82.9$, $Q_f=83.0$, $Q_p=82.4$, $Q_g=91.1$
 Q1 =83 Q2 =98 Q3 =80 Q4 =73 Q5 =78 Q6 =81 Q7 =86 Q8 =90
 Q9 =97 Q10=90 Q11=86 Q12=85 Q13=85 Q14=74 Q15=78



Photometric Parameters

Luminous Flux: 1019.5 lm Efficiency: 104.03 lm/W Radiant Power: 3.268 W
 Total mains efficacy: 122.34 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 1940.04 Plm Pupil Lumens Per Watt: 197.96 Plm/W Pupil Factor (Kp): 1.903
 Circopic Flux: 4487.64 lm

Electric Parameters

Voltage: 231.00V Current: 0.0480A Power: 9.80W
 Power Factor: 0.8710 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: 46263 (2467) CCD Integration Time: 180.93 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0005	0.0163	525	0.4255	15.0752	670	0.1091	3.8656
385	0.0003	0.0122	530	0.4337	15.3648	675	0.0955	3.3836
390	0.0010	0.0358	535	0.4346	15.3975	680	0.0810	2.8684
395	0.0003	0.0093	540	0.4372	15.4893	685	0.0697	2.4677
400	0.0013	0.0462	545	0.4374	15.4942	690	0.0586	2.0765
405	0.0007	0.0236	550	0.4372	15.4896	695	0.0499	1.7686
410	0.0019	0.0676	555	0.4373	15.4940	700	0.0406	1.4397
415	0.0046	0.1627	560	0.4347	15.4016	705	0.0349	1.2371
420	0.0124	0.4378	565	0.4324	15.3203	710	0.0291	1.0312
425	0.0316	1.1201	570	0.4287	15.1865	715	0.0242	0.8573
430	0.0699	2.4758	575	0.4237	15.0089	720	0.0186	0.6602
435	0.1410	4.9964	580	0.4178	14.8002	725	0.0168	0.5951
440	0.2756	9.7634	585	0.4098	14.5198	730	0.0136	0.4801
445	0.5289	18.7372	590	0.4016	14.2284	735	0.0078	0.2756
450	0.8852	31.3597	595	0.3925	13.9064	740	0.0074	0.2614
455	0.9820	34.7903	600	0.3817	13.5221	745	0.0079	0.2799
460	0.7243	25.6608	605	0.3686	13.0595	750	0.0137	0.4854
465	0.5171	18.3211	610	0.3530	12.5044	755	0.0049	0.1730
470	0.4097	14.5145	615	0.3351	11.8733	760	0.0024	0.0837
475	0.3054	10.8211	620	0.3168	11.2235	765	0.0030	0.1058
480	0.2458	8.7094	625	0.2966	10.5092	770	0.0019	0.0658
485	0.2352	8.3329	630	0.2745	9.7238	775	0.0024	0.0857
490	0.2462	8.7206	635	0.2508	8.8839	780	0.0018	0.0641
495	0.2725	9.6531	640	0.2283	8.0875	785	0.0007	0.0239
500	0.3094	10.9626	645	0.2047	7.2505	790	0.0028	0.1004
505	0.3465	12.2756	650	0.1844	6.5340	795	0.0008	0.0278
510	0.3778	13.3847	655	0.1633	5.7859	800	0.0081	0.2861
515	0.3994	14.1502	660	0.1446	5.1212			
520	0.4186	14.8309	665	0.1255	4.4447			

Condition: Tx: 19.9°C, Ti: 0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

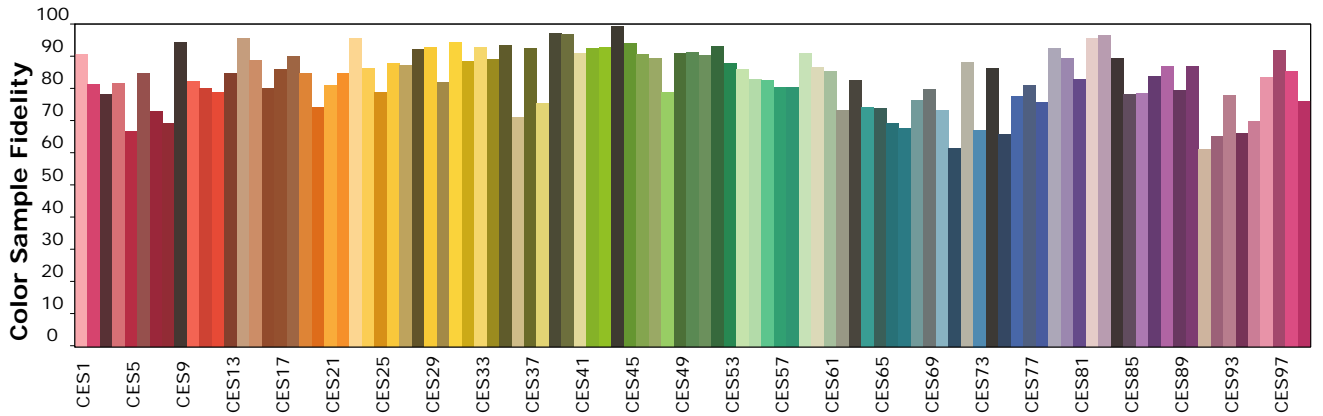
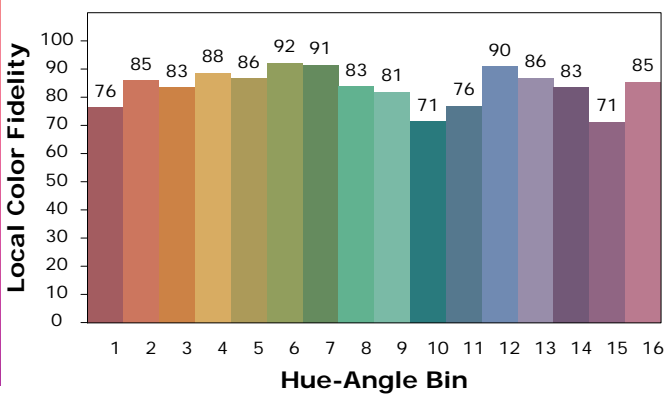
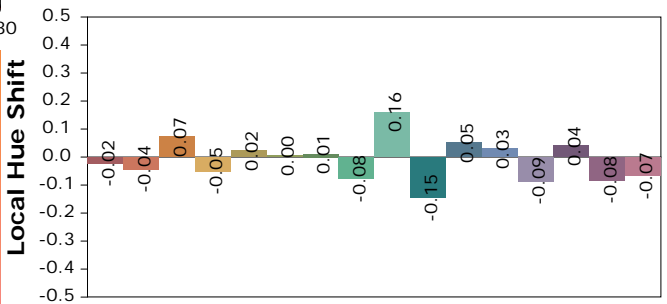
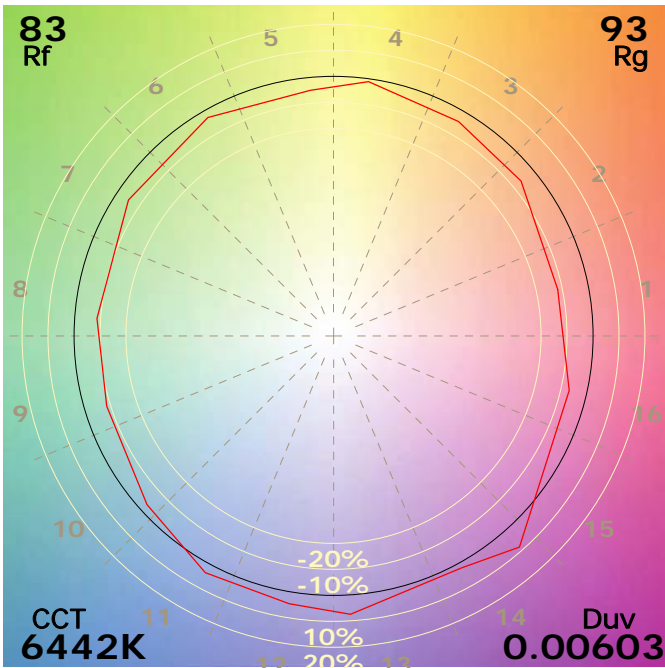
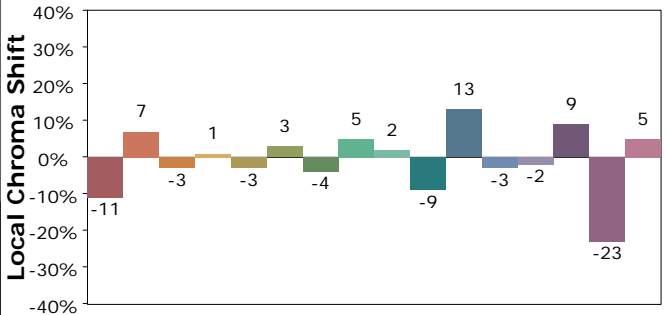
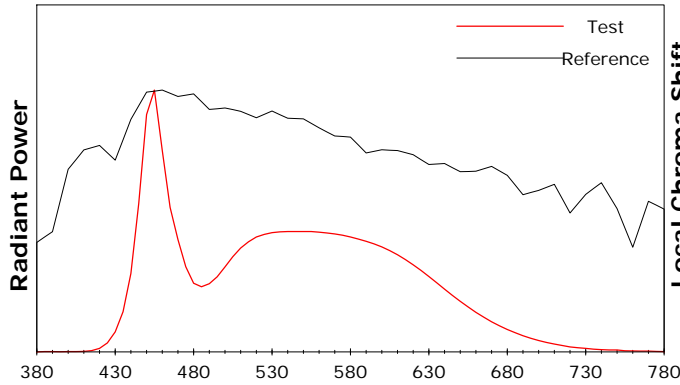
Test Device: Lisun LMS-9000B
 Test Time: 2021-01-06 11:05:17
 Inspector:

IES TM-30-18 Color Rendition Report

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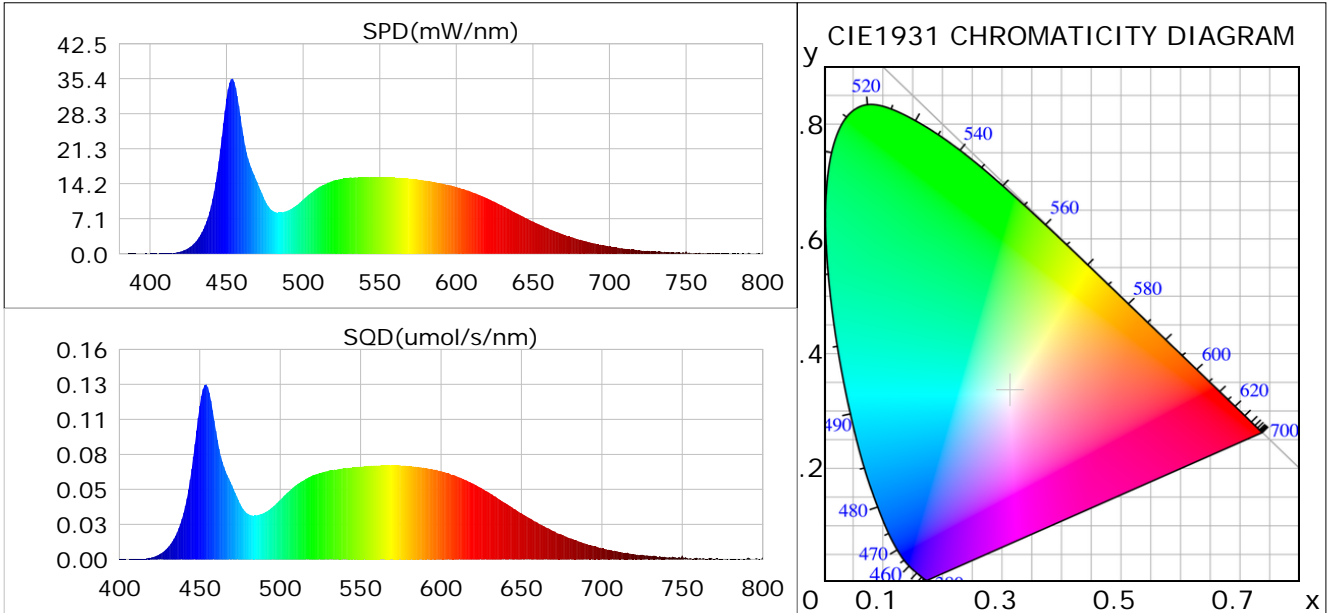
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 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-06 11:05:17
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Plant optical param data

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 Dominant Wavelength: 492.8nm Color Purity: 0.067
 CRI: $R_a=84.6$



Plant Optical Param

$ \mu_v(lm): 1019.50$	$Q_v(lm.s): 1019.50$
$ \mu_e, \dot{E}(W/nm): 3.27$	$Q_e(J): 3.27$
$ \mu_e(W): 3.23$	$ \mu_{fr}(W): 0.04$
$ \zeta_e: 0.33$	$ \zeta_{fr}: 0.00$
$PPE(umol/s/w): 1.49$	$K_{fr}: 0.02$
$Erb_Ratio: 0.64$	$PPF(umol/s): 14.57$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 4.15$
$PPF(500-600)(umol/s): 6.76$	$PPF(600-700)(umol/s): 3.65$
$PPF_{fr}(700-800)(umol/s): 0.22$	$PPF.t(umol): 14.57$
$ \mu_{ch-A.t}(J): 0.26$	$ \mu_{ch-A}(W): 0.26$
$ \mu_{ch-B.t}(J): 0.19$	$ \mu_{ch-B}(W): 0.19$
$ \mu_b.t(J): 1.08$	$ \mu_b(W): 1.08$
$ \mu_y.t(J): 1.48$	$ \mu_y(W): 1.48$
$ \mu_r.t(J): 0.70$	$ \mu_r(W): 0.70$

Electric Parameters

Voltage: 231.00V	Current: 0.0480A	Power: 9.80W
Power Factor: 0.8710	Frequency: 49.99Hz	

Condition: $T_x: 19.9^\circ C$, $T_i: 0.0^\circ C$, R.H.: 60%
 Test Lab:
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