

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-090-10CWM-15W-RAD-A
 Manufacturer: METOLIGHT
 Buyer: 6299

Product Type: LED-Röhre-PIR
 Product Number: 1
 Submitted Unit: 104601

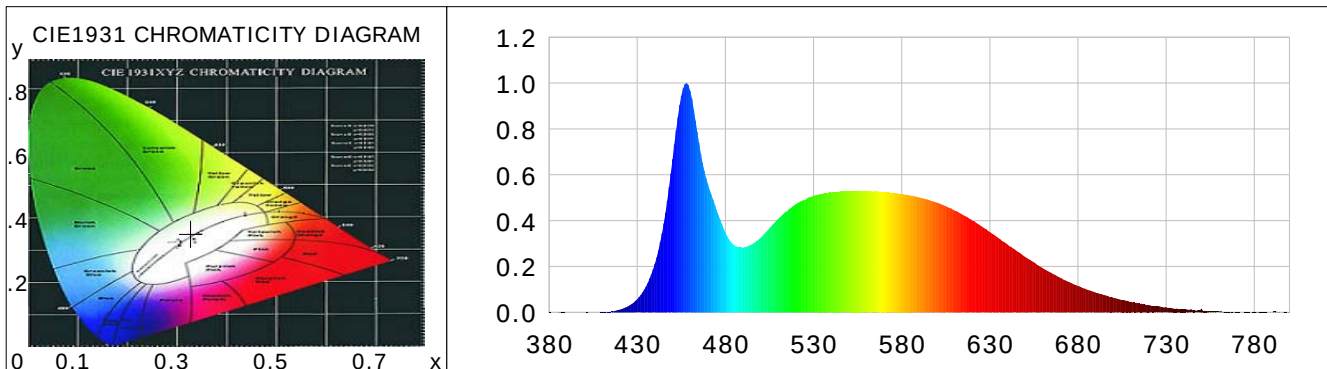
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3277$ $y=0.3520$ $u(u')=0.1996$ $v=0.3215$ $v'=0.4823$
 CCT: $T_c=5700K$ ($duv=0.00758$) Color Ratio: $R=0.143$ $G=0.800$ $B=0.057$
 Peak Wavelength: 457.8nm Half Bandwidth: 25.4nm
 Dominant Wavelength: 536.2nm Color Purity: 0.042
 CRI: $R_a=83.6$, $avgR(1\sim14)=76.8$, $avgR(1\sim15)=76.8$ TM30: $R_f=82$, $R_g=91$
 GAI: $GAI_BB_8=86.1$, $GAI_BB_15=93.0$, $GAI_EES=80.3$

R1 =82	R2 =91	R3 =95	R4 =78	R5 =81	R6 =87	R7 =86	R8 =69
R9 =13	R10=78	R11=77	R12=56	R13=85	R14=97	R15=77	

Color Quality Scale: $Q_a=82.0$, $Q_f=82.5$, $Q_p=80.1$, $Q_g=89.2$

Q1 =80	Q2 =96	Q3 =83	Q4 =73	Q5 =76	Q6 =77	Q7 =82	Q8 =89
Q9 =97	Q10=92	Q11=87	Q12=86	Q13=86	Q14=74	Q15=77	



Photometric Parameters

Luminous Flux: 1523.8 lm	Efficiency: 100.91 lm/W	Radiant Power: 4.785 W
Total mains efficacy: 118.67 lm/W	Energy Efficiency Class: E (EU 2019/2015)	
Pupil Flux: 2785.66 Plm	Pupil Lumens Per Watt: 184.48 Plm/W	Pupil Factor (Kp): 1.828
Cirtpic Flux: 6339.12 lm		

Electric Parameters

Voltage: 230.80V	Current: 0.0700A	Power: 15.10W
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: 46873 (2414)	CCD Integration Time: 142.54 ms

Condition: Tx:19.8'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-14 13:25:36
 Inspector:

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-090-10CWM-15W-RAD-A
 Manufacturer: METOLIGHT
 Buyer: 6299

Product Type: LED-Röhre-PIR
 Product Number: 1
 Submitted Unit: 104601

WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0007	0.0312	525	0.4896	21.5112	670	0.1509	6.6313
385	0.0009	0.0417	530	0.5081	22.3240	675	0.1321	5.8042
390	0.0005	0.0202	535	0.5163	22.6840	680	0.1148	5.0422
395	0.0002	0.0073	540	0.5230	22.9771	685	0.0994	4.3656
400	0.0006	0.0248	545	0.5272	23.1619	690	0.0863	3.7927
405	0.0002	0.0085	550	0.5283	23.2109	695	0.0748	3.2852
410	0.0013	0.0553	555	0.5293	23.2559	700	0.0639	2.8057
415	0.0038	0.1689	560	0.5284	23.2130	705	0.0543	2.3839
420	0.0117	0.5158	565	0.5278	23.1893	710	0.0465	2.0443
425	0.0277	1.2177	570	0.5237	23.0064	715	0.0389	1.7090
430	0.0572	2.5119	575	0.5226	22.9581	720	0.0316	1.3864
435	0.1125	4.9416	580	0.5163	22.6817	725	0.0262	1.1498
440	0.2120	9.3147	585	0.5091	22.3663	730	0.0228	1.0020
445	0.3885	17.0676	590	0.5009	22.0072	735	0.0163	0.7176
450	0.6676	29.3312	595	0.4913	21.5826	740	0.0135	0.5942
455	0.9447	41.5047	600	0.4786	21.0259	745	0.0104	0.4573
460	0.9655	42.4173	605	0.4629	20.3372	750	0.0154	0.6756
465	0.7389	32.4632	610	0.4444	19.5247	755	0.0049	0.2139
470	0.5601	24.6079	615	0.4244	18.6453	760	0.0036	0.1580
475	0.4460	19.5955	620	0.4010	17.6154	765	0.0021	0.0906
480	0.3481	15.2921	625	0.3756	16.5008	770	0.0017	0.0733
485	0.2927	12.8614	630	0.3498	15.3689	775	0.0012	0.0529
490	0.2820	12.3899	635	0.3230	14.1893	780	0.0008	0.0347
495	0.2960	13.0054	640	0.2953	12.9744	785	0.0012	0.0524
500	0.3255	14.3016	645	0.2688	11.8087	790	0.0000	0.0018
505	0.3669	16.1185	650	0.2420	10.6310	795	0.0004	0.0183
510	0.4081	17.9305	655	0.2180	9.5762	800	0.0029	0.1257
515	0.4417	19.4061	660	0.1933	8.4905			
520	0.4725	20.7585	665	0.1713	7.5237			

Condition: Tx:19.8'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

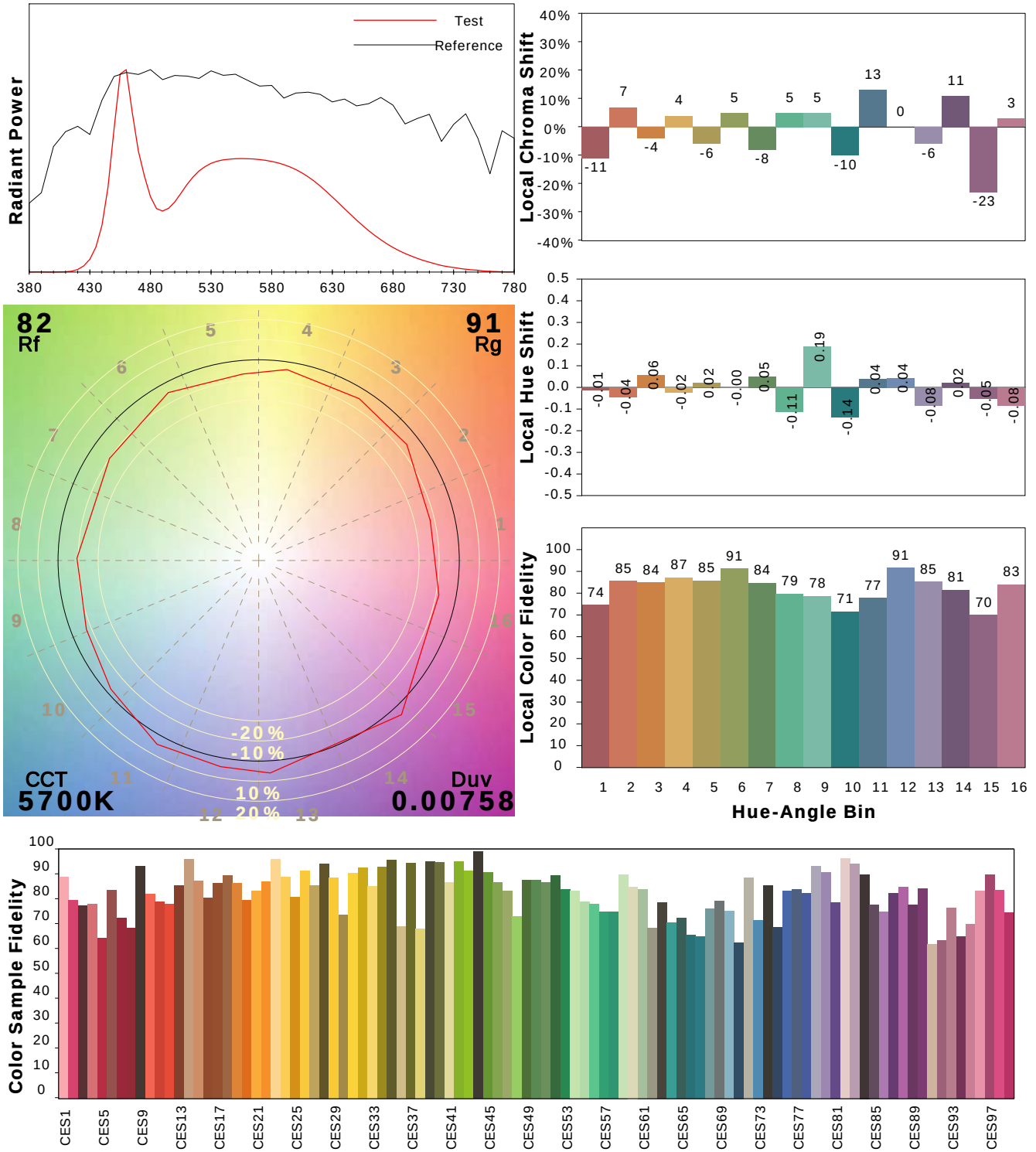
Test Device: Lisun LMS-9000B
 Test Time: 2021-01-14 13:25:36
 Inspector:

IES TM-30-18 Color Rendition Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-090-10CWM-15W-RAD-A
 Manufacturer: METOLIGHT
 Buyer: 6299

Product Type: LED-Röhre-PIR
 Product Number: 1
 Submitted Unit: 104601



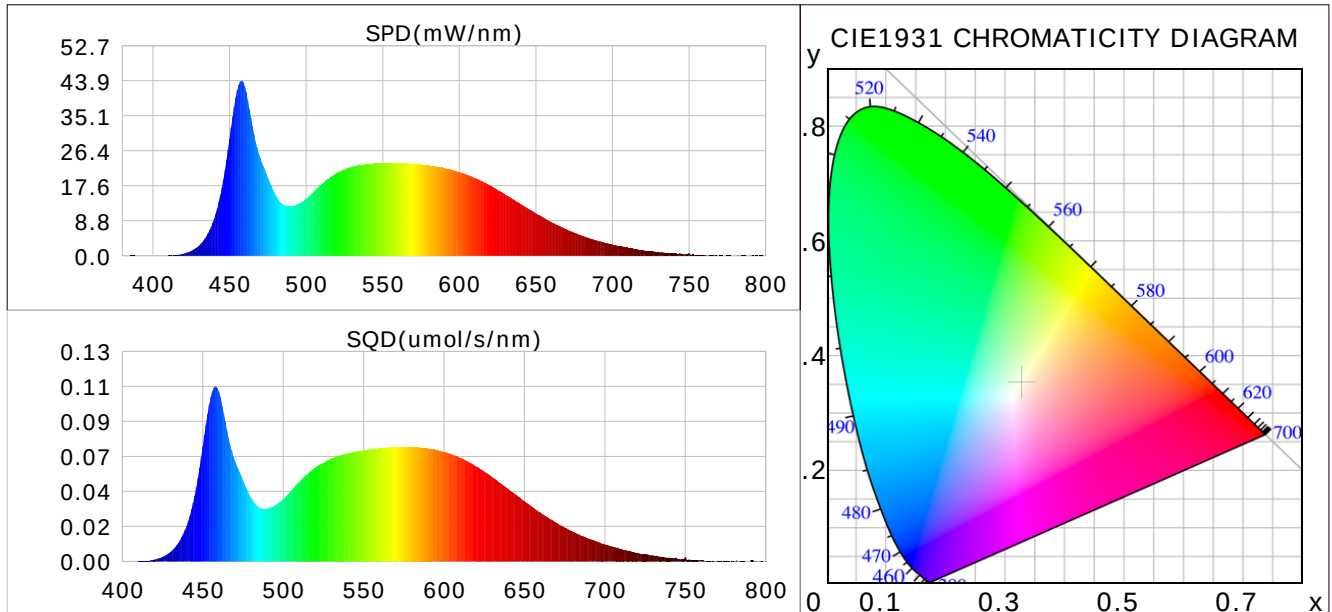
Condition: Tx:19.8'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-14 13:25:36
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3277$ $y=0.3520$ $u(u')=0.1996$ $v=0.3215$ $v'=0.4823$
 CCT: $T_c=5700K$ ($duv=0.00758$) Color Ratio: $R=0.143$ $G=0.800$ $B=0.057$
 Peak Wavelength: 457.8nm Half Bandwidth: 25.4nm
 Dominant Wavelength: 536.2nm Color Purity: 0.042
 CRI: Ra= 83.6



Plant Optical Param

$\mu_v(lm)$: 1523.80	$Q_v(lm.s)$: 1523.80
$\mu_e, \dot{E}(W/nm)$: 4.78	$Q_e(J)$: 4.78
$\mu_e(W)$: 4.72	$\mu_{fr}(W)$: 0.07
$\dot{Q}_e$: 0.31	$\dot{Q}_{fr}$: 0.00
$PPE(umol/s/w)$: 1.42	K_{fr} : 0.03
E_{rb_Ratio} : 0.77	$PPF(umol/s)$: 21.49
$PF_{uv}(360-400)(umol/s)$: 0.00	$PPF(400-500)(umol/s)$: 5.59
$PPF(500-600)(umol/s)$: 10.00	$PPF(600-700)(umol/s)$: 5.91
$PF_{fr}(700-800)(umol/s)$: 0.41	$PPF.t(umol)$: 21.49
$\mu_{ch-A.t}(J)$: 0.35	$\mu_{ch-A}(W)$: 0.35
$\mu_{ch-B.t}(J)$: 0.27	$\mu_{ch-B}(W)$: 0.27
$\mu_{b.t}(J)$: 1.44	$\mu_b(W)$: 1.44
$\mu_{y.t}(J)$: 2.18	$\mu_y(W)$: 2.18
$\mu_{r.t}(J)$: 1.13	$\mu_r(W)$: 1.13

Electric Parameters

Voltage: 230.80V	Current: 0.0700A	Power: 15.10W
Power Factor: 0.9300	Frequency: 49.99Hz	

Condition: Tx:19.8'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-14 13:25:36
 Inspector: