

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-090-10DWC-14W-2120-230
 Manufacturer: METOLIGHT
 Buyer: 4624
 Product Type: LED-Röhre-SCE
 Product Number: 1
 Submitted Unit: 103275

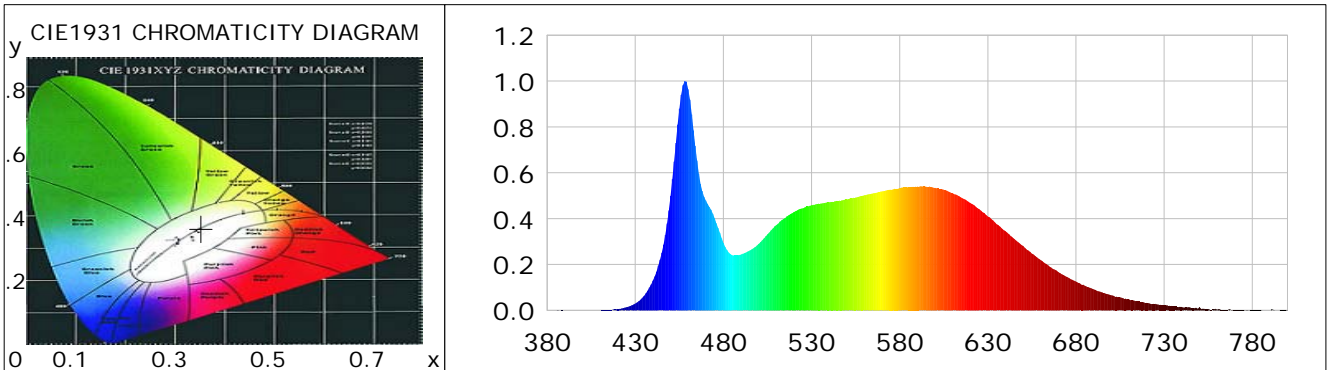
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3526$ $y=0.3617$ $u(u')=0.2126$ $v=0.3271$ $v'=0.4906$
 CCT: $T_c=4767K$ ($duv=0.00209$) Color Ratio: $R=0.168$ $G=0.782$ $B=0.050$
 Peak Wavelength: 458.4nm Half Bandwidth: 18.8nm
 Dominant Wavelength: 573.4nm Color Purity: 0.144
 CRI: $R_a=85.4$, $avgR(1\sim14)=79.5$, $avgR(1\sim15)=79.6$ TM30: $R_f=82$, $R_g=91$
 GAI: $GAI_BB_8=88.1$, $GAI_BB_15=96.3$, $GAI_EES=78.3$

R1 =85	R2 =95	R3 =96	R4 =80	R5 =83	R6 =90	R7 =85	R8 =69
R9 =24	R10=85	R11=79	R12=55	R13=89	R14=98	R15=80	

Color Quality Scale: $Q_a=83.3$, $Q_f=83.6$, $Q_p=81.7$, $Q_g=90.3$

Q1 =79	Q2 =94	Q3 =84	Q4 =74	Q5 =76	Q6 =78	Q7 =85	Q8 =90
Q9 =98	Q10=94	Q11=90	Q12=89	Q13=88	Q14=78	Q15=79	



Photometric Parameters

Luminous Flux: 1763.1 lm Efficiency: 124.87 lm/W Radiant Power: 5.484 W
 Total mains efficacy: 124.87 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 3004.71 Plm Pupil Lumens Per Watt: 212.80 Plm/W Pupil Factor (Kp): 1.704
 Circopic Flux: 6632.35 lm

Electric Parameters

Voltage: 230.60V Current: 0.0660A Power: 14.12W
 Power Factor: 0.9260 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: 46149 (2575) CCD Integration Time: 109.66 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0055	525	0.4447	23.0186	670	0.1675	8.6698
385	0.0003	0.0155	530	0.4586	23.7368	675	0.1455	7.5286
390	0.0004	0.0229	535	0.4650	24.0650	680	0.1258	6.5110
395	0.0001	0.0073	540	0.4713	24.3951	685	0.1073	5.5552
400	0.0008	0.0410	545	0.4773	24.7011	690	0.0918	4.7505
405	0.0001	0.0060	550	0.4838	25.0402	695	0.0780	4.0395
410	0.0005	0.0275	555	0.4920	25.4652	700	0.0662	3.4263
415	0.0020	0.1037	560	0.5021	25.9891	705	0.0568	2.9409
420	0.0059	0.3050	565	0.5107	26.4336	710	0.0477	2.4685
425	0.0133	0.6883	570	0.5188	26.8491	715	0.0397	2.0568
430	0.0300	1.5526	575	0.5266	27.2529	720	0.0325	1.6823
435	0.0633	3.2740	580	0.5340	27.6384	725	0.0281	1.4528
440	0.1296	6.7093	585	0.5381	27.8482	730	0.0236	1.2240
445	0.2517	13.0254	590	0.5397	27.9348	735	0.0182	0.9400
450	0.4996	25.8579	595	0.5396	27.9284	740	0.0147	0.7595
455	0.8796	45.5275	600	0.5346	27.6688	745	0.0116	0.5993
460	0.9647	49.9275	605	0.5257	27.2086	750	0.0142	0.7372
465	0.6536	33.8287	610	0.5113	26.4609	755	0.0059	0.3038
470	0.4790	24.7941	615	0.4916	25.4438	760	0.0038	0.1986
475	0.4015	20.7786	620	0.4687	24.2590	765	0.0025	0.1315
480	0.2952	15.2791	625	0.4415	22.8497	770	0.0021	0.1063
485	0.2407	12.4593	630	0.4096	21.1991	775	0.0028	0.1463
490	0.2439	12.6225	635	0.3762	19.4702	780	0.0017	0.0883
495	0.2613	13.5218	640	0.3451	17.8619	785	0.0025	0.1281
500	0.2902	15.0174	645	0.3118	16.1367	790	0.0001	0.0065
505	0.3317	17.1676	650	0.2807	14.5271	795	0.0000	0.0000
510	0.3727	19.2879	655	0.2476	12.8160	800	0.0029	0.1503
515	0.4030	20.8559	660	0.2199	11.3798			
520	0.4293	22.2193	665	0.1912	9.8953			

Condition: Tx:22.3'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

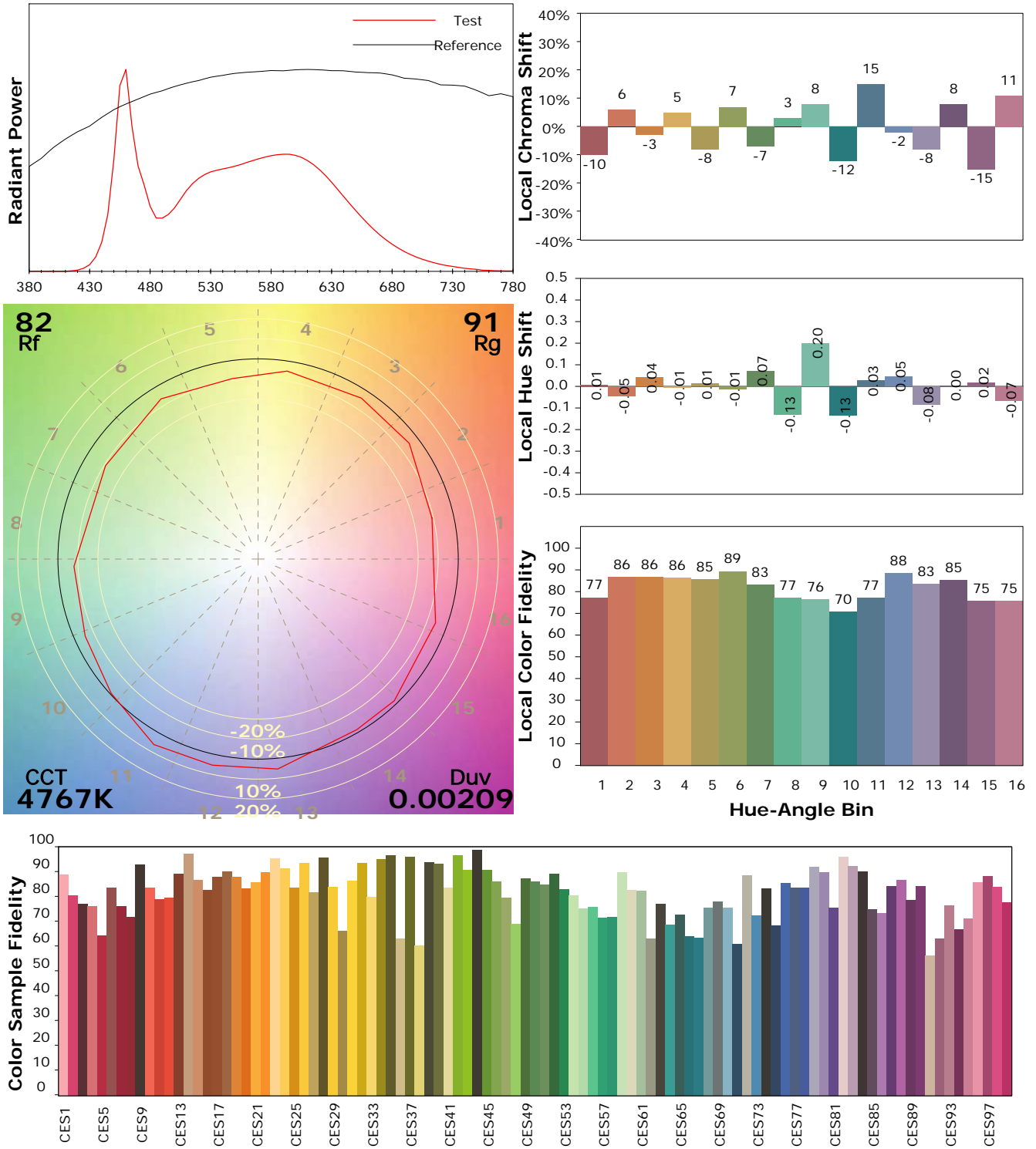
Test Device: Lisun LMS-9000B
 Test Time: 2021-01-13 15:38:58
 Inspector:

IES TM-30-18 Color Rendition Report

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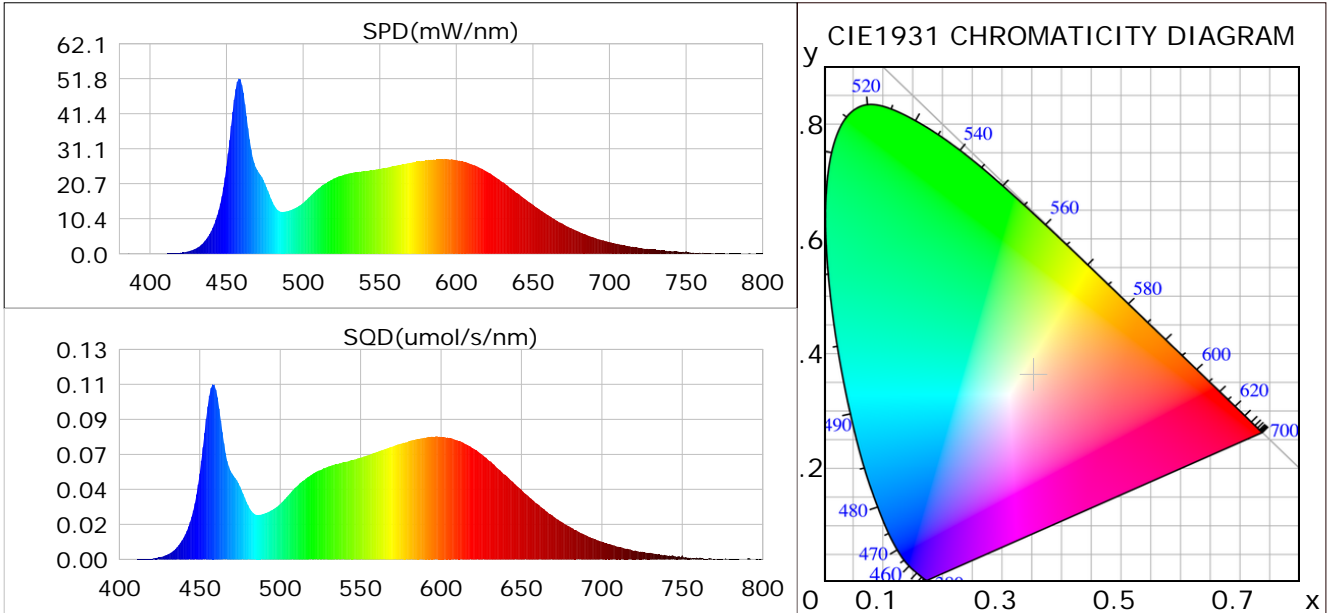
Condition: Tx:22.3°C, Ti:0.0°C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-13 15:38:58
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

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 CCT: $T_c=4767K$ ($duv=0.00209$) Color Ratio: $R=0.168$ $G=0.782$ $B=0.050$
 Peak Wavelength: 458.4nm Half Bandwidth: 18.8nm
 Dominant Wavelength: 573.4nm Color Purity: 0.144
 CRI: $R_a=85.4$



Plant Optical Param

$ \mu_v(lm)$: 1763.10	$Q_v(lm.s)$: 1763.10
$ \mu_e, \dot{E}(W/nm)$: 5.48	$Q_e(J)$: 5.48
$ \mu_e(W)$: 5.40	$ \mu_{fr}(W)$: 0.09
$ \zeta_e$: 0.38	$ \zeta_{fr}$: 0.01
PPE(umol/s/w): 1.77	Kfr: 0.04
Erb_Ratio: 1.04	PPF(umol/s): 24.95
PFuv(360-400)(umol/s): 0.00	PPF(400-500)(umol/s): 5.63
PPF(500-600)(umol/s): 11.37	PPF(600-700)(umol/s): 7.96
PPfr(700-800)(umol/s): 0.52	PPF.t(umol): 24.95
$ \mu_{ch-A.t}(J)$: 0.40	$ \mu_{ch-A}(W)$: 0.40
$ \mu_{ch-B.t}(J)$: 0.29	$ \mu_{ch-B}(W)$: 0.29
$ \mu_b.t(J)$: 1.45	$ \mu_b(W)$: 1.45
$ \mu_y.t(J)$: 2.47	$ \mu_y(W)$: 2.47
$ \mu_r.t(J)$: 1.53	$ \mu_r(W)$: 1.53

Electric Parameters

Voltage: 230.60V	Current: 0.0660A	Power: 14.12W
Power Factor: 0.9260	Frequency: 49.99Hz	

Condition: $T_x:22.3^\circ C$, $T_i:0.0^\circ C$, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-13 15:38:58
 Inspector: