

Lightsource Test Report

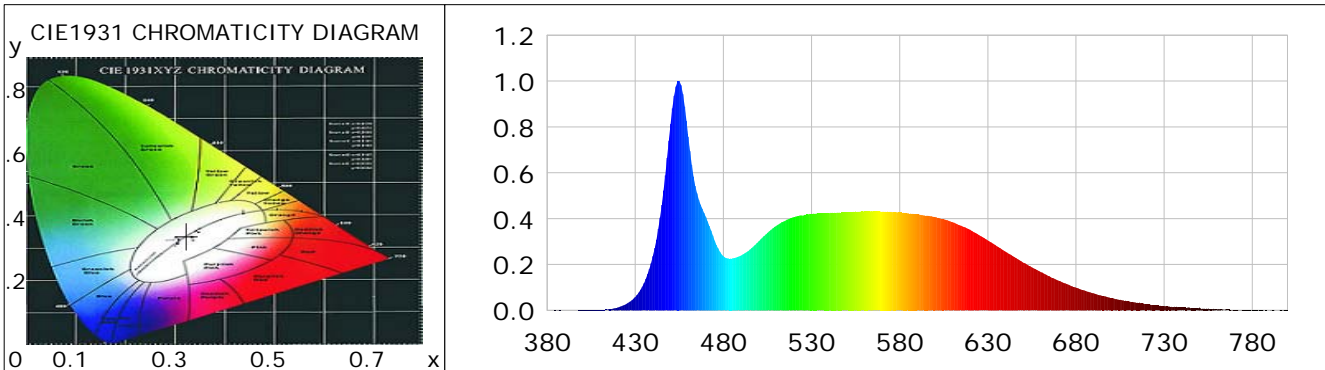
Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-115-6CWM-18W
 Manufacturer: METOLIGHT
 Buyer: 2105

Product Type: LED-Röhre-SCE
 Product Number: 1
 Submitted Unit: 102641

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3228$ $y=0.3378$ $u(u')=0.2015$ $v=0.3163$ $v'=0.4744$
 CCT: $T_c=5946K$ ($duv=0.00274$) Color Ratio: $R=0.148$ $G=0.795$ $B=0.057$
 Peak Wavelength: 454.5nm Half Bandwidth: 19.7nm
 Dominant Wavelength: 497.3nm Color Purity: 0.033
 CRI: $R_a=87.0$, $avgR(1\sim14)=81.1$, $avgR(1\sim15)=81.2$ TM30: $R_f=85$, $R_g=95$
 GAI: $GAI_BB_8=92.5$, $GAI_BB_15=98.4$, $GAI_EES=87.7$
 R1 =86 R2 =93 R3 =94 R4 =85 R5 =86 R6 =87 R7 =89 R8 =75
 R9 =29 R10=81 R11=85 R12=59 R13=89 R14=97 R15=83
 Color Quality Scale: $Q_a=84.3$, $Q_f=84.3$, $Q_p=84.3$, $Q_g=93.1$
 Q1 =84 Q2 =98 Q3 =80 Q4 =74 Q5 =80 Q6 =83 Q7 =88 Q8 =91
 Q9 =98 Q10=90 Q11=87 Q12=86 Q13=86 Q14=78 Q15=81



Photometric Parameters

Luminous Flux: 2213.2 lm Efficiency: 125.89 lm/W Radiant Power: 7.165 W
 Total mains efficacy: 148.05 lm/W Energy Efficiency Class: D (EU 2019/2015)
 Pupil Flux: 4113.58 Plm Pupil Lumens Per Watt: 233.99 Plm/W Pupil Factor (Kp): 1.859
 Circopic Flux: 9441.10 lm

Electric Parameters

Voltage: 230.30V Current: 0.0780A Power: 17.58W
 Power Factor: 0.9730 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: 47049 (2467) CCD Integration Time: 86.65 ms

Condition: $T_x:21.1^{\circ}C$, $T_i:0.0^{\circ}C$, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-02-22 12:16:33
 Inspector:

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-115-6CWM-18W
 Manufacturer: METOLIGHT
 Buyer: 2105

Product Type: LED-Röhre-SCE
 Product Number: 1
 Submitted Unit: 102641

WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0004	0.0308	525	0.4129	31.5259	670	0.1298	9.9139
385	0.0007	0.0571	530	0.4208	32.1259	675	0.1142	8.7167
390	0.0005	0.0376	535	0.4228	32.2819	680	0.0991	7.5699
395	0.0005	0.0377	540	0.4239	32.3689	685	0.0862	6.5815
400	0.0015	0.1113	545	0.4265	32.5663	690	0.0741	5.6577
405	0.0012	0.0906	550	0.4273	32.6225	695	0.0627	4.7887
410	0.0019	0.1451	555	0.4310	32.9057	700	0.0533	4.0670
415	0.0050	0.3807	560	0.4321	32.9932	705	0.0467	3.5627
420	0.0124	0.9432	565	0.4319	32.9771	710	0.0395	3.0186
425	0.0282	2.1505	570	0.4302	32.8445	715	0.0330	2.5186
430	0.0585	4.4627	575	0.4296	32.8010	720	0.0271	2.0724
435	0.1185	9.0468	580	0.4265	32.5661	725	0.0225	1.7172
440	0.2366	18.0649	585	0.4228	32.2789	730	0.0193	1.4724
445	0.4595	35.0856	590	0.4194	32.0233	735	0.0144	1.1007
450	0.8132	62.0887	595	0.4130	31.5365	740	0.0123	0.9411
455	1.0000	76.3508	600	0.4071	31.0798	745	0.0096	0.7355
460	0.7578	57.8569	605	0.3974	30.3446	750	0.0124	0.9435
465	0.5110	39.0132	610	0.3844	29.3520	755	0.0080	0.6122
470	0.4082	31.1670	615	0.3687	28.1535	760	0.0047	0.3619
475	0.3042	23.2293	620	0.3513	26.8204	765	0.0048	0.3632
480	0.2366	18.0633	625	0.3277	25.0229	770	0.0026	0.1967
485	0.2262	17.2735	630	0.3050	23.2865	775	0.0015	0.1162
490	0.2393	18.2728	635	0.2801	21.3846	780	0.0028	0.2118
495	0.2647	20.2103	640	0.2558	19.5341	785	0.0024	0.1809
500	0.3010	22.9803	645	0.2326	17.7617	790	0.0009	0.0723
505	0.3385	25.8439	650	0.2086	15.9289	795	0.0013	0.0982
510	0.3691	28.1797	655	0.1874	14.3054	800	0.0008	0.0621
515	0.3905	29.8139	660	0.1673	12.7765			
520	0.4068	31.0627	665	0.1483	11.3255			

Condition: Tx:21.1'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

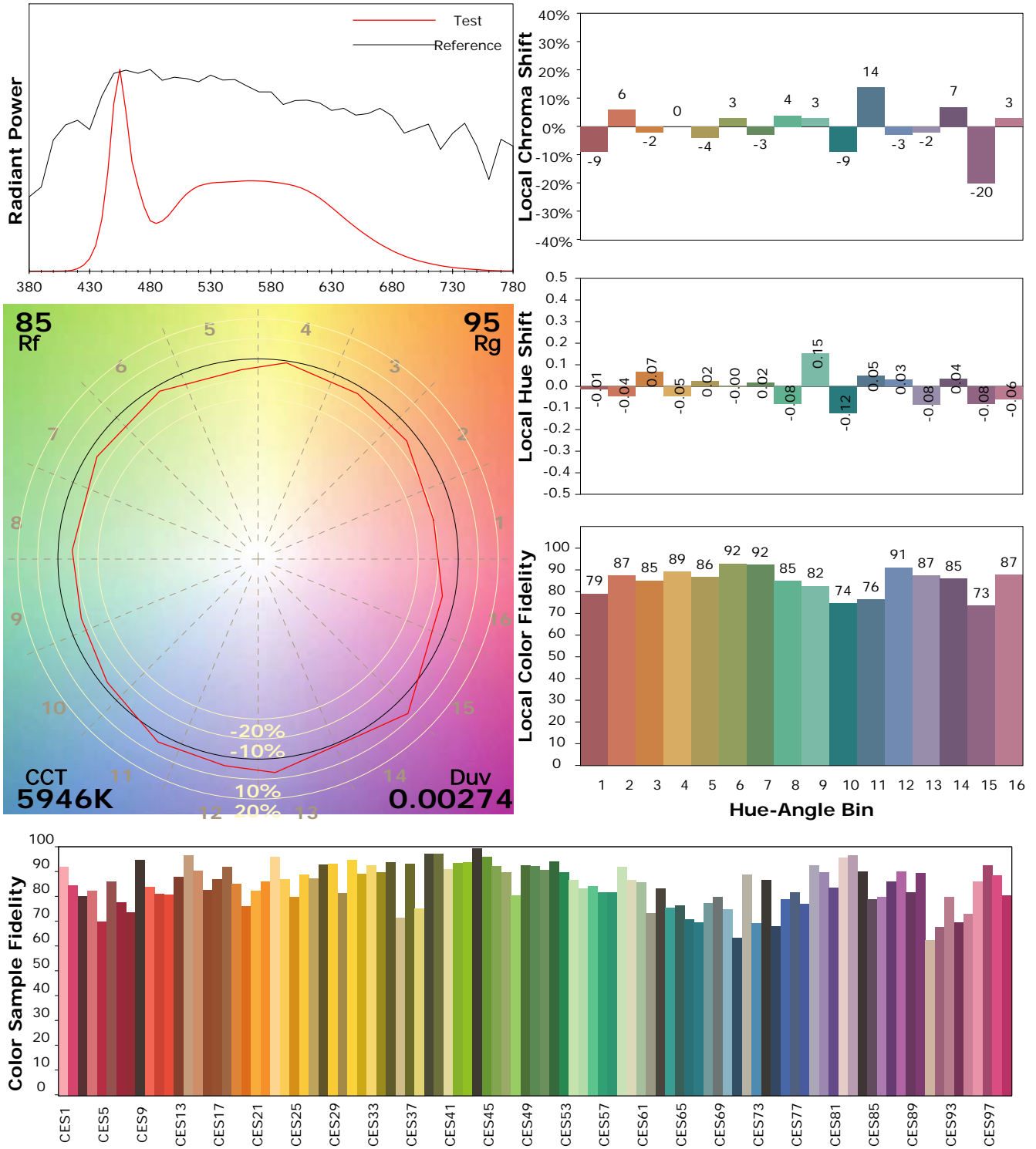
Test Device: Lisun LMS-9000B
 Test Time: 2021-02-22 12:16:33
 Inspector:

IES TM-30-18 Color Rendition Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-115-6CWM-18W
 Manufacturer: METOLIGHT
 Buyer: 2105

Product Type: LED-Röhre-SCE
 Product Number: 1
 Submitted Unit: 102641



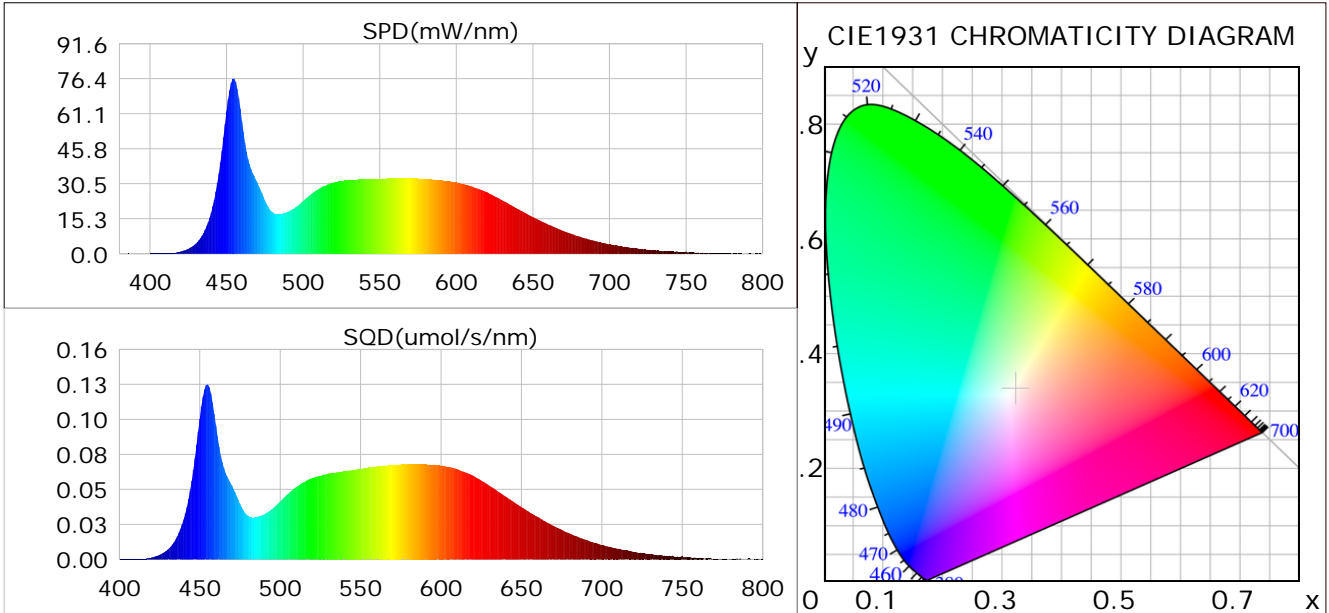
Condition: Tx:21.1°C, Ti:0.0°C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-02-22 12:16:33
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3228$ $y=0.3378$ $u(u')=0.2015$ $v=0.3163$ $v'=0.4744$
 CCT: $T_c=5946K$ ($duv=0.00274$) Color Ratio: $R=0.148$ $G=0.795$ $B=0.057$
 Peak Wavelength: 454.5nm Half Bandwidth: 19.7nm
 Dominant Wavelength: 497.3nm Color Purity: 0.033
 CRI: $R_a=87.0$



Plant Optical Param

$ \mu_v(lm): 2213.20$	$Q_v(lm.s): 2213.20$
$ \mu_e, \dot{E}(W/nm): 7.16$	$Q_e(J): 7.16$
$ \mu_e(W): 7.06$	$ \mu_{fr}(W): 0.11$
$ \zeta_e: 0.40$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.82$	$K_{fr}: 0.04$
$Erb_Ratio: 0.75$	$PPF(umol/s): 32.05$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 8.65$
$PPF(500-600)(umol/s): 14.52$	$PPF(600-700)(umol/s): 8.88$
$PPF_r(700-800)(umol/s): 0.66$	$PPF.t(umol): 32.05$
$ \mu_{ch-A.t}(J): 0.55$	$ \mu_{ch-A}(W): 0.55$
$ \mu_{ch-B.t}(J): 0.41$	$ \mu_{ch-B}(W): 0.41$
$ \mu_b.t(J): 2.24$	$ \mu_b(W): 2.24$
$ \mu_y.t(J): 3.17$	$ \mu_y(W): 3.17$
$ \mu_r.t(J): 1.70$	$ \mu_r(W): 1.70$

Electric Parameters

Voltage: 230.30V	Current: 0.0780A	Power: 17.58W
Power Factor: 0.9730	Frequency: 49.99Hz	

Condition: $T_x: 21.1^\circ C$, $T_i: 0.0^\circ C$, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-02-22 12:16:33
 Inspector: