

Lightsource Test Report

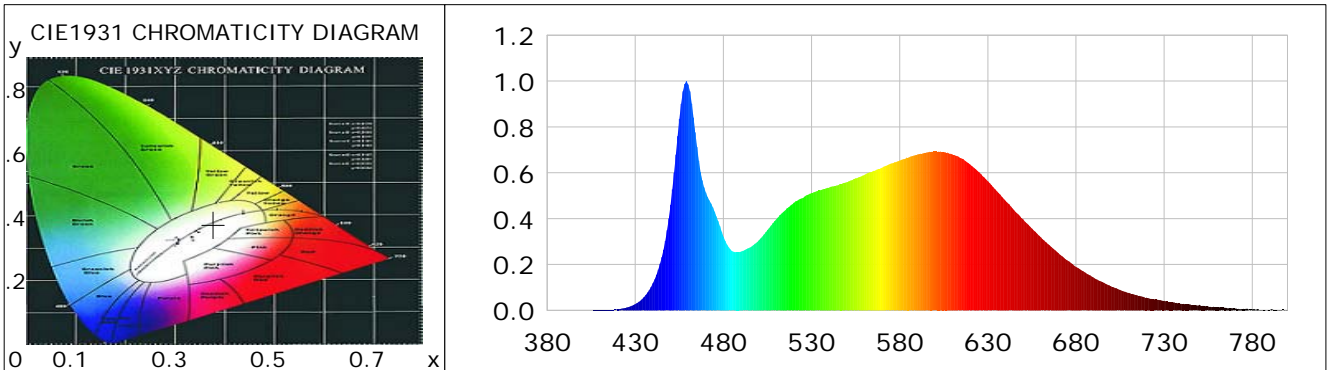
Product Information

Product Category: LED-Röhre
 Product Spec: Ledtube-085-5NWM-HO-18W-TRF
 Manufacturer: METOLIGHT
 Buyer: 7709

Product Type: LED-Röhre-TRF
 Product Number: 1
 Submitted Unit: 104513

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3771$ $y=0.3740$ $u(u')=0.2240$ $v=0.3332$ $v'=0.4998$
 CCT: $T_c=4073K$ ($duv=-0.00032$) Color Ratio: $R=0.189$ $G=0.767$ $B=0.044$
 Peak Wavelength: 459.0nm Half Bandwidth: 20.2nm
 Dominant Wavelength: 579.0nm Color Purity: 0.254
 CRI: $R_a = 86.4$, $avgR(1\sim14) = 81.3$, $avgR(1\sim15) = 81.4$ TM30: $R_f = 83$, $R_g = 92$
 GAI: $GAI_BB_8=91.6$, $GAI_BB_15=100.1$, $GAI_EES=73.3$
 R1 =87 R2 =96 R3 =96 R4 =82 R5 =85 R6 =91 R7 =85 R8 =70
 R9 =30 R10=87 R11=81 R12=60 R13=90 R14=99 R15=82
 Color Quality Scale: $Q_a = 84.4$, $Q_f = 84.7$, $Q_p = 83.2$, $Q_g = 91.8$
 Q1 =81 Q2 =95 Q3 =84 Q4 =76 Q5 =78 Q6 =80 Q7 =86 Q8 =90
 Q9 =98 Q10=94 Q11=90 Q12=88 Q13=88 Q14=79 Q15=81



Photometric Parameters

Luminous Flux: 2259.2 lm Efficiency: 123.86 lm/W Radiant Power: 7.056 W
 Total mains efficacy: 134.88 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 3566.17 Plm Pupil Lumens Per Watt: 195.51 Plm/W Pupil Factor (Kp): 1.579
 Circopic Flux: 7567.68 lm

Electric Parameters

Voltage: 230.20V Current: 0.0790A Power: 18.24W
 Power Factor: 0.9500 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: 45577 (2370) CCD Integration Time: 80.00 ms

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

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-22 11:50:17
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0002	0.0104	525	0.4898	27.1950	670	0.2503	13.8971
385	0.0006	0.0354	530	0.5112	28.3843	675	0.2185	12.1307
390	0.0003	0.0141	535	0.5236	29.0684	680	0.1897	10.5340
395	0.0003	0.0170	540	0.5361	29.7617	685	0.1660	9.2169
400	0.0006	0.0308	545	0.5458	30.3029	690	0.1426	7.9159
405	0.0006	0.0321	550	0.5586	31.0123	695	0.1231	6.8325
410	0.0012	0.0693	555	0.5754	31.9477	700	0.1044	5.7984
415	0.0025	0.1360	560	0.5908	32.7991	705	0.0888	4.9303
420	0.0050	0.2784	565	0.6082	33.7701	710	0.0762	4.2302
425	0.0123	0.6830	570	0.6226	34.5644	715	0.0647	3.5894
430	0.0273	1.5171	575	0.6407	35.5709	720	0.0552	3.0620
435	0.0581	3.2252	580	0.6535	36.2834	725	0.0476	2.6416
440	0.1184	6.5711	585	0.6666	37.0073	730	0.0413	2.2915
445	0.2318	12.8711	590	0.6793	37.7142	735	0.0350	1.9422
450	0.4606	25.5747	595	0.6881	38.2053	740	0.0286	1.5885
455	0.8350	46.3605	600	0.6932	38.4856	745	0.0248	1.3771
460	0.9850	54.6882	605	0.6907	38.3489	750	0.0239	1.3289
465	0.7134	39.6065	610	0.6794	37.7192	755	0.0173	0.9612
470	0.5141	28.5441	615	0.6630	36.8073	760	0.0146	0.8079
475	0.4301	23.8793	620	0.6362	35.3211	765	0.0113	0.6270
480	0.3224	17.8987	625	0.6022	33.4367	770	0.0085	0.4746
485	0.2581	14.3284	630	0.5632	31.2661	775	0.0063	0.3512
490	0.2568	14.2566	635	0.5204	28.8906	780	0.0046	0.2573
495	0.2740	15.2143	640	0.4780	26.5383	785	0.0026	0.1463
500	0.3045	16.9045	645	0.4362	24.2162	790	0.0021	0.1190
505	0.3505	19.4599	650	0.3967	22.0271	795	0.0032	0.1750
510	0.3979	22.0910	655	0.3573	19.8357	800	0.0040	0.2222
515	0.4360	24.2068	660	0.3195	17.7406			
520	0.4694	26.0639	665	0.2836	15.7470			

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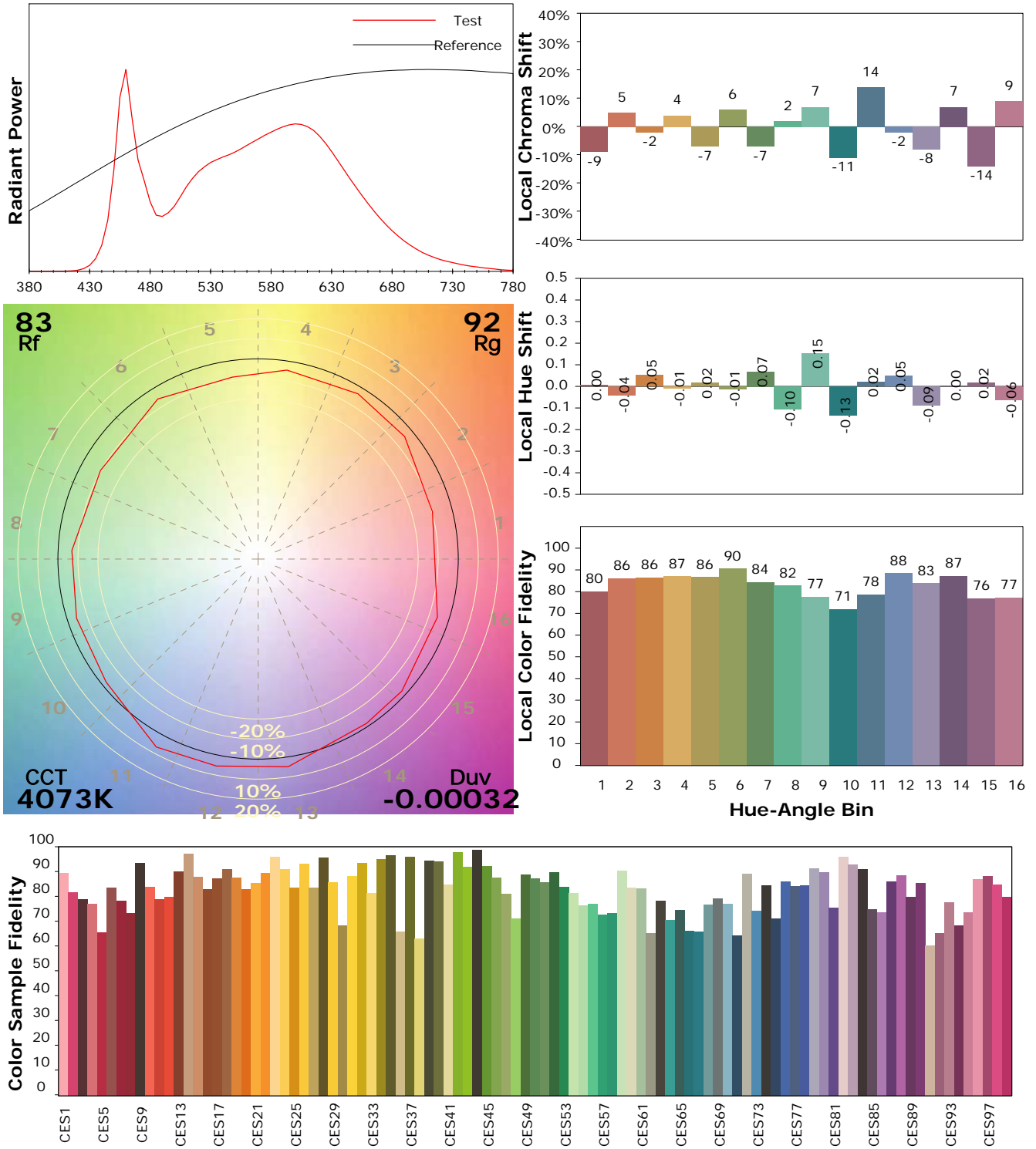
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IES TM-30-18 Color Rendition Report

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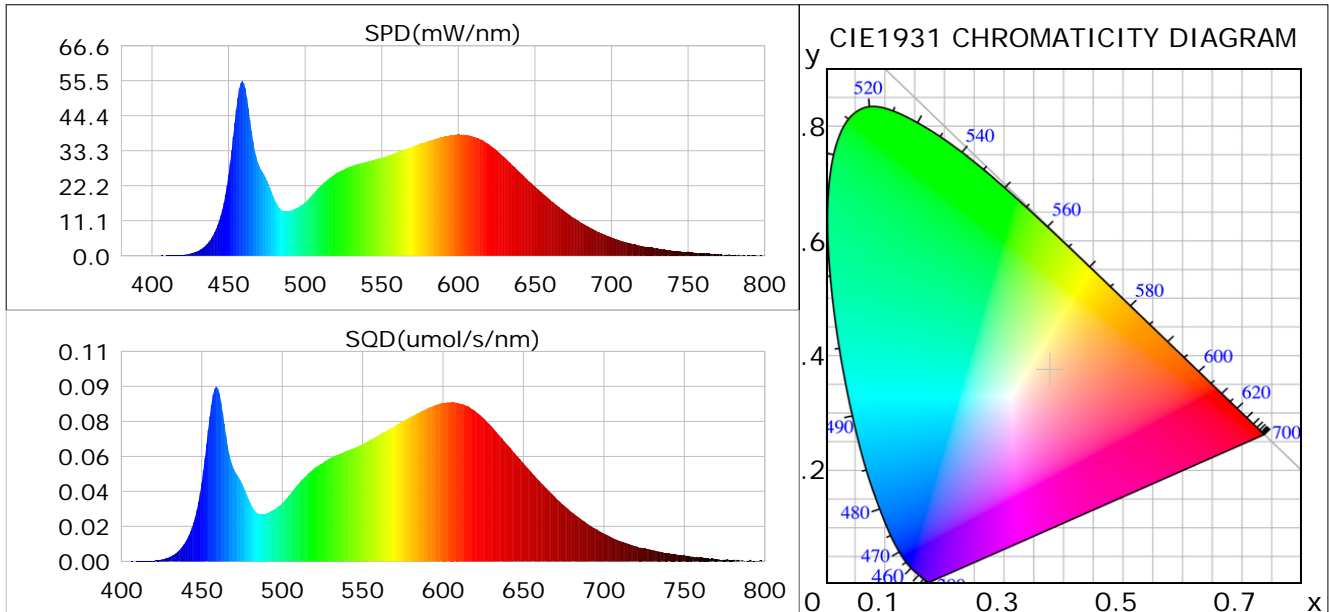
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Test Device: Lisun LMS-9000B
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Plant optical param data

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 Dominant Wavelength: 579.0nm Color Purity: 0.254
 CRI: $R_a=86.4$



Plant Optical Param

$ \mu_v(lm): 2259.20$	$Q_v(lm.s): 2259.20$
$ \mu_e, \dot{E}(W/nm): 7.06$	$Q_e(J): 7.06$
$ \mu_e(W): 6.89$	$ \mu_{fr}(W): 0.17$
$ \dot{C}_e: 0.38$	$ \dot{C}_{fr}: 0.01$
$PPE(umol/s/w): 1.77$	$K_{fr}: 0.05$
$Erb_Ratio: 1.42$	$PPF(umol/s): 32.35$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 6.15$
$PPF(500-600)(umol/s): 14.30$	$PPF(600-700)(umol/s): 11.90$
$PPF_r(700-800)(umol/s): 1.00$	$PPF.t(umol): 32.35$
$ \mu_{ch-A.t}(J): 0.51$	$ \mu_{ch-A}(W): 0.51$
$ \mu_{ch-B.t}(J): 0.35$	$ \mu_{ch-B}(W): 0.35$
$ \mu_b.t(J): 1.58$	$ \mu_b(W): 1.58$
$ \mu_y.t(J): 3.10$	$ \mu_y(W): 3.10$
$ \mu_r.t(J): 2.27$	$ \mu_r(W): 2.27$

Electric Parameters

Voltage: 230.20V	Current: 0.0790A	Power: 18.24W
Power Factor: 0.9500	Frequency: 49.99Hz	

Condition: $T_x: 19.8^\circ C$, $T_i: 0.0^\circ C$, R.H.: 60%
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