

Lightsource Test Report

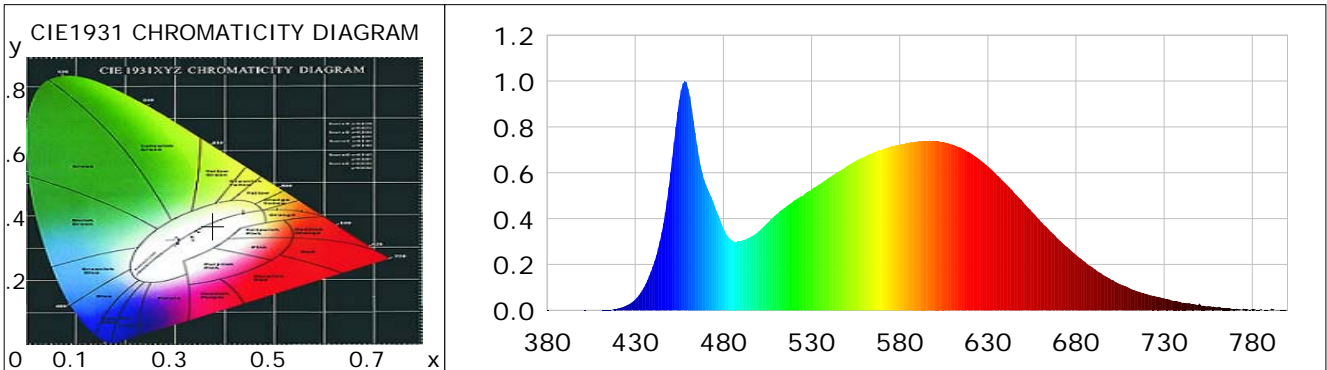
Product Infomation

Product Category: LED-PL-Röhren
 Product Spec: LED-PL-2G11-22-NW
 Manufacturer: METOLIGHT
 Buyer: 2320

Product Type: LED-PL-Röhren-2G11
 Product Number: 1
 Submitted Unit: 101974

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3763$ $y=0.3698$ $u(u')=0.2252$ $v=0.3319$ $v'=0.4979$
 CCT: $T_c=4064K$ ($duv=-0.00206$) Color Ratio: $R=0.189$ $G=0.767$ $B=0.045$
 Peak Wavelength: 458.2nm Half Bandwidth: 24.4nm
 Dominant Wavelength: 580.1nm Color Purity: 0.239
 CRI: $R_a = 86.6$, $avgR(1\sim14) = 81.7$, $avgR(1\sim15) = 81.8$ TM30: $R_f = 83$, $R_g = 93$
 GAI: $GAI_BB_8=94.2$, $GAI_BB_15=102.1$, $GAI_EES=75.3$
 R1 =87 R2 =95 R3 =96 R4 =81 R5 =85 R6 =90 R7 =86 R8 =72
 R9 =35 R10=86 R11=79 R12=62 R13=89 R14=99 R15=83
 Color Quality Scale: $Q_a = 84.1$, $Q_f = 84.3$, $Q_p = 83.6$, $Q_g = 92.7$
 Q1 =84 Q2 =96 Q3 =82 Q4 =74 Q5 =77 Q6 =80 Q7 =86 Q8 =90
 Q9 =98 Q10=92 Q11=87 Q12=86 Q13=86 Q14=81 Q15=82



Photometric Parameters

Luminous Flux: 2079.9 lm Efficiency: 92.85 lm/W Radiant Power: 6.642 W
 Total mains efficacy: 109.19 lm/W Energy Efficiency Class: F (EU 2019/2015)
 Pupil Flux: 3272.77 Plm Pupil Lumens Per Watt: 146.11 Plm/W Pupil Factor (Kp): 1.574
 Cirtopic Flux: 6947.12 lm

Electric Parameters

Voltage: 230.50V Current: 0.1010A Power: 22.40W
 Power Factor: 0.9610 Frequency: 49.99Hz

Test Infomation

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: 44411 (2447) CCD Integration Time: 125.32 ms

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

Test Device: Lisun LMS-9000B
 Test Time: 2021-03-01 14:15:10
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0008	0.0355	525	0.4990	23.3567	670	0.3100	14.5107
385	0.0008	0.0365	530	0.5278	24.7022	675	0.2765	12.9424
390	0.0002	0.0090	535	0.5521	25.8410	680	0.2416	11.3063
395	0.0001	0.0034	540	0.5792	27.1088	685	0.2120	9.9207
400	0.0004	0.0208	545	0.6033	28.2381	690	0.1825	8.5403
405	0.0001	0.0064	550	0.6284	29.4115	695	0.1560	7.3025
410	0.0006	0.0260	555	0.6512	30.4789	700	0.1336	6.2549
415	0.0026	0.1204	560	0.6696	31.3415	705	0.1143	5.3497
420	0.0079	0.3701	565	0.6888	32.2382	710	0.0981	4.5896
425	0.0210	0.9826	570	0.7014	32.8294	715	0.0829	3.8812
430	0.0474	2.2165	575	0.7146	33.4444	720	0.0712	3.3330
435	0.1004	4.7006	580	0.7236	33.8666	725	0.0611	2.8611
440	0.1916	8.9695	585	0.7302	34.1746	730	0.0530	2.4812
445	0.3402	15.9229	590	0.7361	34.4529	735	0.0418	1.9553
450	0.6003	28.0958	595	0.7397	34.6224	740	0.0333	1.5602
455	0.9178	42.9555	600	0.7387	34.5722	745	0.0291	1.3631
460	0.9665	45.2357	605	0.7340	34.3528	750	0.0295	1.3806
465	0.7215	33.7702	610	0.7226	33.8185	755	0.0189	0.8842
470	0.5500	25.7430	615	0.7088	33.1745	760	0.0130	0.6069
475	0.4562	21.3508	620	0.6858	32.0986	765	0.0100	0.4679
480	0.3577	16.7424	625	0.6592	30.8511	770	0.0053	0.2475
485	0.3047	14.2599	630	0.6273	29.3596	775	0.0073	0.3414
490	0.3027	14.1654	635	0.5904	27.6337	780	0.0055	0.2575
495	0.3180	14.8836	640	0.5530	25.8817	785	0.0055	0.2594
500	0.3443	16.1137	645	0.5121	23.9665	790	0.0017	0.0813
505	0.3816	17.8605	650	0.4714	22.0615	795	0.0018	0.0859
510	0.4187	19.5967	655	0.4289	20.0750	800	0.0042	0.1953
515	0.4484	20.9868	660	0.3880	18.1584			
520	0.4782	22.3828	665	0.3489	16.3280			

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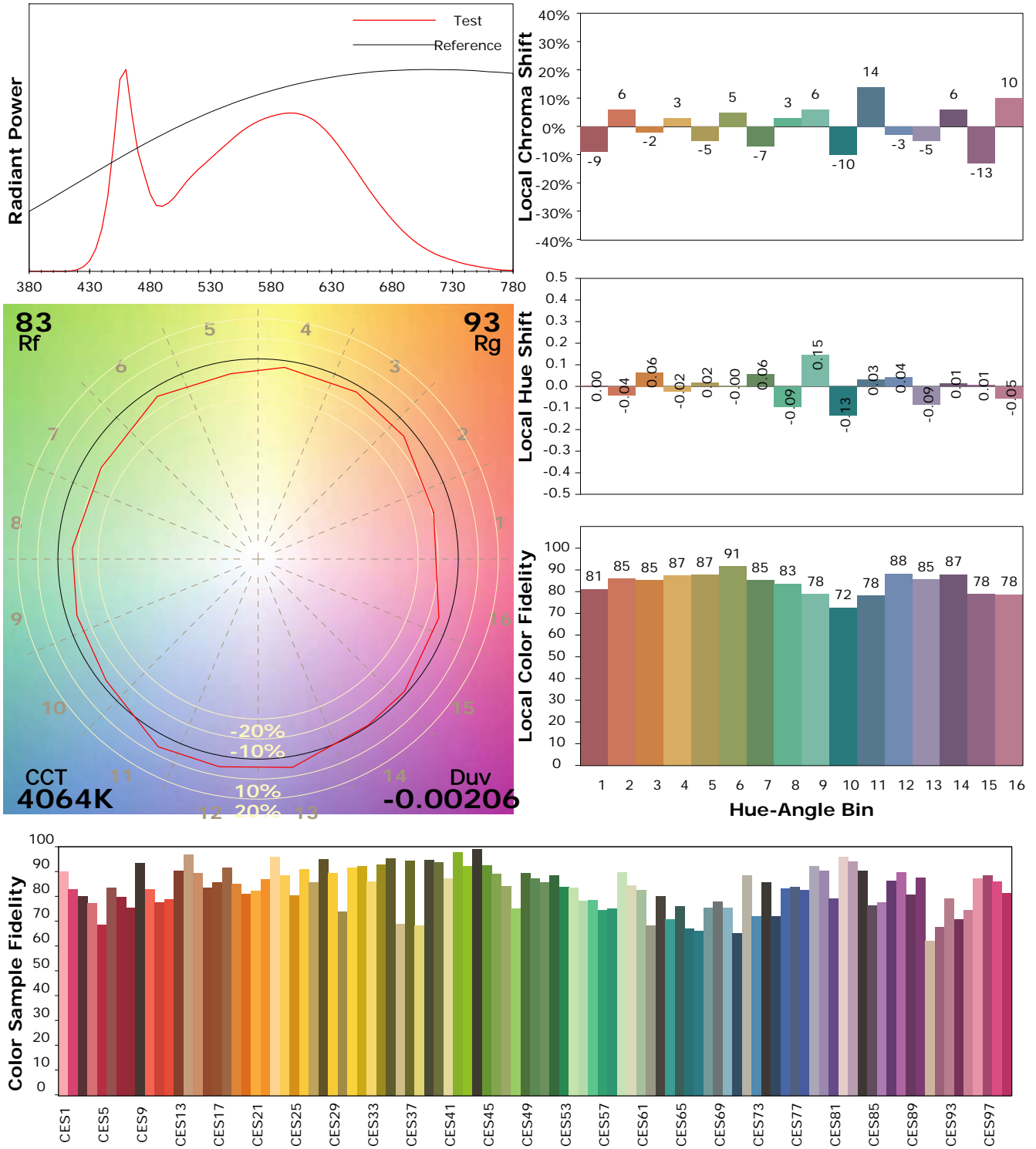
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IES TM-30-18 Color Rendition Report

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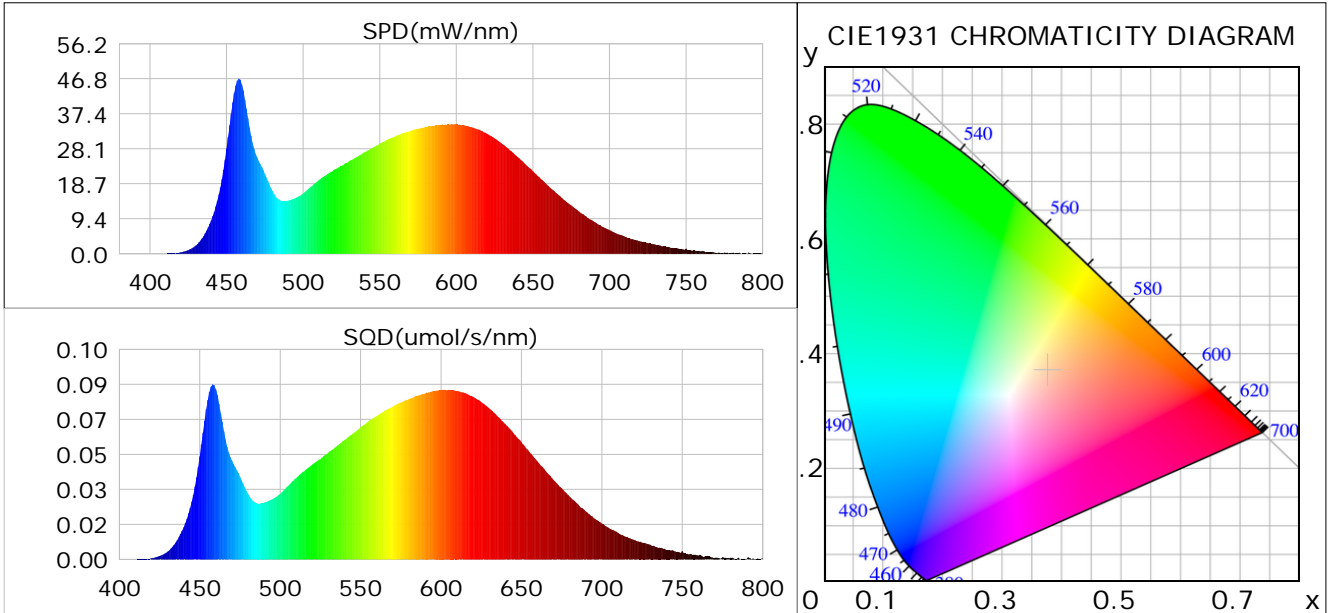
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Plant optical param data

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 CRI: $R_a=86.6$



Plant Optical Param

$ \mu_v(lm): 2079.90$	$Q_v(lm.s): 2079.90$
$ \mu_e, \dot{E}(W/nm): 6.64$	$Q_e(J): 6.64$
$ \mu_e(W): 6.47$	$ \mu_{fr}(W): 0.18$
$ \dot{C}_e: 0.29$	$ \dot{C}_{fr}: 0.01$
$PPE(umol/s/w): 1.36$	$K_{fr}: 0.05$
$Erb_Ratio: 1.43$	$PPF(umol/s): 30.42$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 5.84$
$PPF(500-600)(umol/s): 13.12$	$PPF(600-700)(umol/s): 11.47$
$PPF_{fr}(700-800)(umol/s): 1.04$	$PPF.t(umol): 30.42$
$ \mu_{ch-A.t}(J): 0.50$	$ \mu_{ch-A}(W): 0.50$
$ \mu_{ch-B.t}(J): 0.33$	$ \mu_{ch-B}(W): 0.33$
$ \mu_b.t(J): 1.50$	$ \mu_b(W): 1.50$
$ \mu_y.t(J): 2.84$	$ \mu_y(W): 2.84$
$ \mu_r.t(J): 2.18$	$ \mu_r(W): 2.18$

Electric Parameters

Voltage: 230.50V	Current: 0.1010A	Power: 22.40W
Power Factor: 0.9610	Frequency: 49.99Hz	

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