

Lightsource Test Report

Product Information

Product Category: LED-Röhre Product Type: LED-Röhre SCE
 Product Spec: LEDtube-090-8CWM-12W-SCE-RM-160 Product Number: 1
 Manufacturer: METOLIGHT Submitted Unit: 102591
 Buyer: 6961

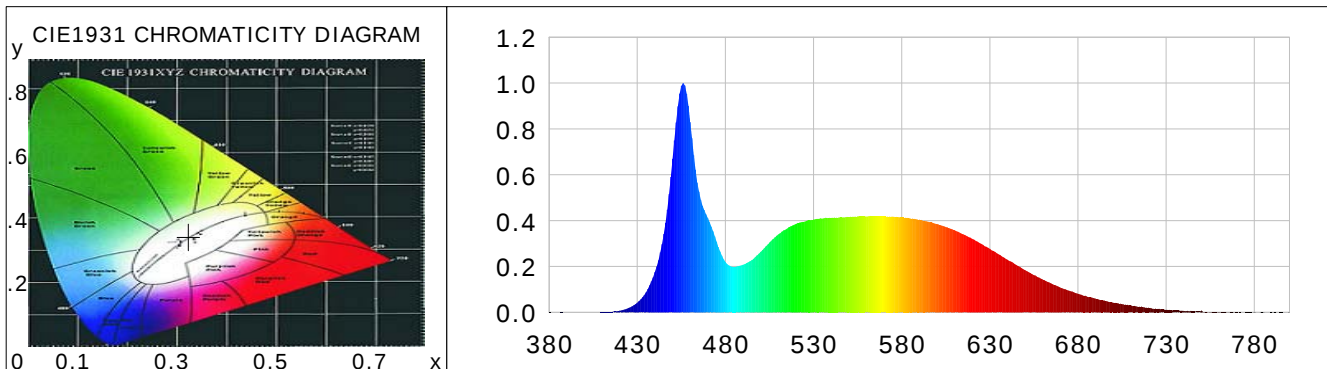
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3233$ $y=0.3425$ $u(u')=0.2001$ $v=0.3179$ $v'=0.4769$
 CCT: $T_c=5914K$ ($duv=0.00491$) Color Ratio: $R=0.143$ $G=0.802$ $B=0.055$
 Peak Wavelength: 456.0nm Half Bandwidth: 18.0nm
 Dominant Wavelength: 504.1nm Color Purity: 0.030
 CRI: $R_a=84.1$, $avgR(1\sim14)=77.2$, $avgR(1\sim15)=77.3$ TM30: $R_f=82$, $R_g=93$
 GAI: $GAI_BB_8=88.9$, $GAI_BB_15=95.6$, $GAI_EES=84.1$

R1 =83	R2 =91	R3 =94	R4 =81	R5 =82	R6 =86	R7 =87	R8 =70
R9 =15	R10=77	R11=80	R12=54	R13=86	R14=97	R15=78	

Color Quality Scale: $Q_a=81.8$, $Q_f=81.9$, $Q_p=81.0$, $Q_g=90.6$

Q1 =81	Q2 =97	Q3 =79	Q4 =71	Q5 =76	Q6 =79	Q7 =85	Q8 =89
Q9 =97	Q10=90	Q11=86	Q12=85	Q13=84	Q14=74	Q15=77	



Photometric Parameters

Luminous Flux: 1872.4 lm Efficiency: 156.95 lm/W Radiant Power: 5.898 W
 Total mains efficacy: 184.57 lm/W Energy Efficiency Class: C (EU 2019/2015)
 Pupil Flux: 3449.63 Plm Pupil Lumens Per Watt: 289.16 Plm/W Pupil Factor (Kp): 1.842
 Cirtopic Flux: 7882.92 lm

Electric Parameters

Voltage: 230.90V Current: 0.0520A Power: 11.93W
 Power Factor: 0.9380 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: 46848 (2287) CCD Integration Time: 130.22 ms

Condition: Tx:18.6'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-06 15:00:34
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0014	0.0926	525	0.3961	26.7942	670	0.1086	7.3455
385	0.0005	0.0330	530	0.4044	27.3572	675	0.0949	6.4170
390	0.0004	0.0260	535	0.4084	27.6298	680	0.0816	5.5210
395	0.0007	0.0474	540	0.4120	27.8697	685	0.0698	4.7209
400	0.0003	0.0231	545	0.4142	28.0222	690	0.0594	4.0176
405	0.0003	0.0194	550	0.4160	28.1395	695	0.0512	3.4665
410	0.0007	0.0477	555	0.4184	28.3069	700	0.0421	2.8505
415	0.0026	0.1737	560	0.4181	28.2852	705	0.0361	2.4415
420	0.0071	0.4801	565	0.4202	28.4258	710	0.0302	2.0417
425	0.0191	1.2916	570	0.4187	28.3234	715	0.0249	1.6835
430	0.0421	2.8510	575	0.4182	28.2902	720	0.0206	1.3951
435	0.0879	5.9482	580	0.4146	28.0507	725	0.0151	1.0231
440	0.1754	11.8654	585	0.4088	27.6539	730	0.0114	0.7720
445	0.3427	23.1809	590	0.4047	27.3748	735	0.0086	0.5808
450	0.6695	45.2933	595	0.3956	26.7643	740	0.0067	0.4563
455	0.9882	66.8506	600	0.3859	26.1060	745	0.0058	0.3913
460	0.8298	56.1391	605	0.3727	25.2122	750	0.0083	0.5645
465	0.5266	35.6267	610	0.3584	24.2477	755	0.0035	0.2335
470	0.4118	27.8585	615	0.3404	23.0266	760	0.0028	0.1924
475	0.3080	20.8345	620	0.3209	21.7058	765	0.0012	0.0801
480	0.2200	14.8799	625	0.2993	20.2452	770	0.0019	0.1298
485	0.1984	13.4212	630	0.2768	18.7257	775	0.0009	0.0583
490	0.2074	14.0309	635	0.2533	17.1377	780	0.0022	0.1460
495	0.2282	15.4354	640	0.2294	15.5184	785	0.0026	0.1730
500	0.2640	17.8623	645	0.2071	14.0109	790	0.0008	0.0562
505	0.3050	20.6358	650	0.1840	12.4509	795	0.0019	0.1315
510	0.3405	23.0379	655	0.1620	10.9577	800	0.0035	0.2352
515	0.3652	24.7058	660	0.1433	9.6974			
520	0.3860	26.1149	665	0.1253	8.4784			

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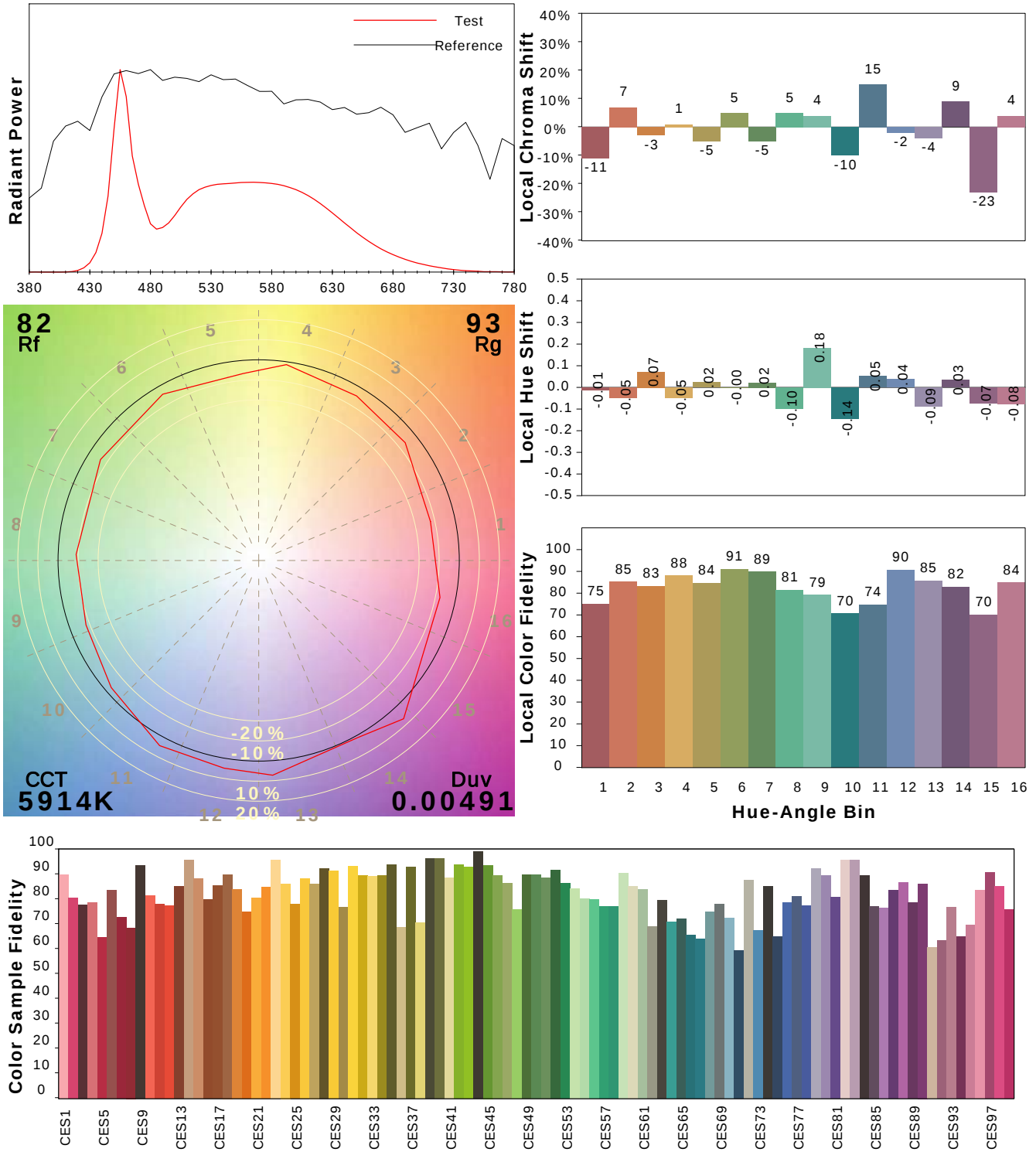
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IES TM-30-18 Color Rendition Report

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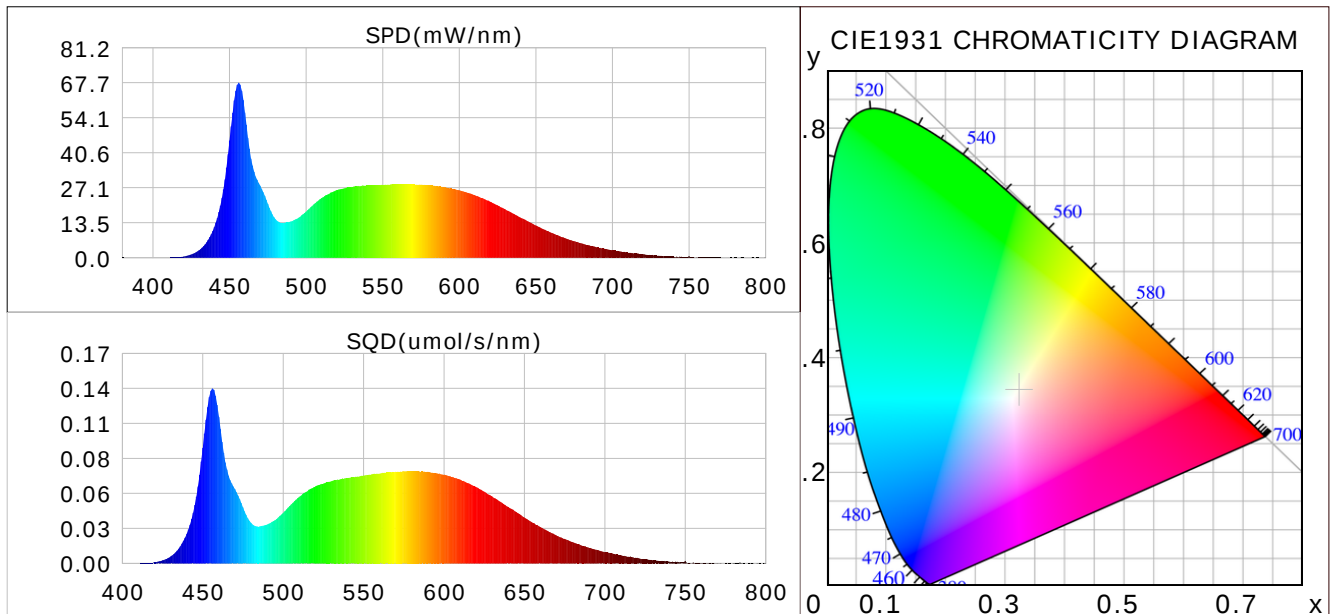
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Plant optical param data

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 CRI: Ra= 84.1



Plant Optical Param

$\mu_v(lm): 1872.40$	$Q_v(lm.s): 1872.40$
$\mu_e, \dot{E}(W/nm): 5.90$	$Q_e(J): 5.90$
$\mu_e(W): 5.83$	$\mu_{fr}(W): 0.07$
$\dot{Q}_e: 0.49$	$\dot{Q}_{fr}: 0.01$
$PPE(umol/s/w): 2.22$	$K_{fr}: 0.03$
$Erb_Ratio: 0.72$	$PPF(umol/s): 26.47$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 7.10$
$PPF(500-600)(umol/s): 12.35$	$PPF(600-700)(umol/s): 7.03$
$PF_{fr}(700-800)(umol/s): 0.40$	$PPF.t(umol): 26.47$
$\mu_{ch-A.t}(J): 0.44$	$\mu_{ch-A}(W): 0.44$
$\mu_{ch-B.t}(J): 0.34$	$\mu_{ch-B}(W): 0.34$
$\mu_b.t(J): 1.83$	$\mu_b(W): 1.83$
$\mu_y.t(J): 2.69$	$\mu_y(W): 2.69$
$\mu_r.t(J): 1.35$	$\mu_r(W): 1.35$

Electric Parameters

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