

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-060-8Veg-10WM
 Manufacturer: METOLIGHT
 Buyer: 7116

Product Type: LED-Röhre Spezial
 Product Number: 1
 Submitted Unit: 105180

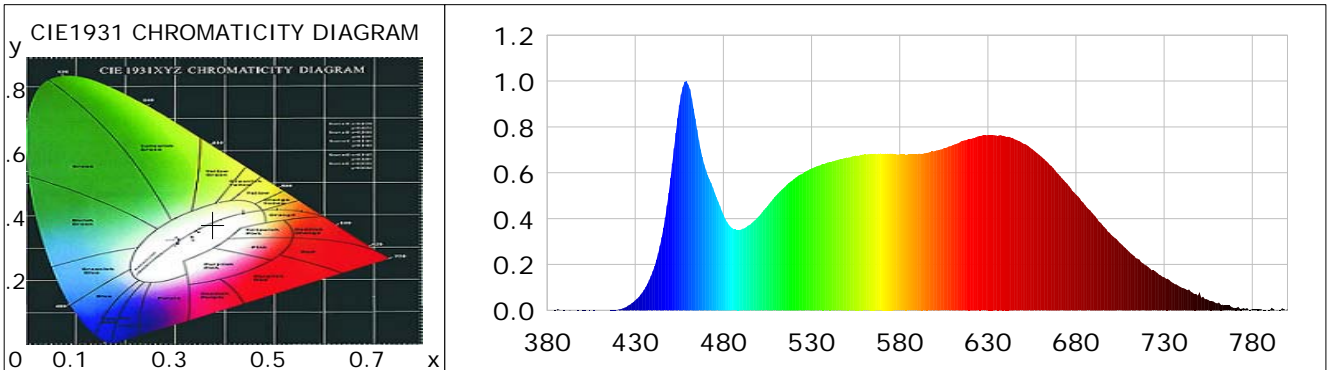
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3763$ $y=0.3736$ $u(u')=0.2236$ $v=0.3330$ $v'=0.4996$
 CCT: $T_c=4093K$ ($duv=-0.00026$) Color Ratio: $R=0.199$ $G=0.754$ $B=0.047$
 Peak Wavelength: 458.7nm Half Bandwidth: 26.9nm
 Dominant Wavelength: 578.9nm Color Purity: 0.250
 CRI: $R_a=95.5$, $avgR(1\sim14)=93.7$, $avgR(1\sim15)=93.8$ TM30: $R_f=89$, $R_g=97$
 GAI: $GAI_BB_8=97.8$, $GAI_BB_15=104.7$, $GAI_EES=78.6$

R1 =97	R2 =100	R3 =98	R4 =92	R5 =94	R6 =95	R7 =94	R8 =94
R9 =94	R10=96	R11=93	R12=67	R13=99	R14=98	R15=95	

Color Quality Scale: $Q_a=92.1$, $Q_f=91.8$, $Q_p=92.0$, $Q_g=98.0$

Q1 =89	Q2 =96	Q3 =89	Q4 =84	Q5 =86	Q6 =88	Q7 =95	Q8 =97
Q9 =98	Q10=98	Q11=97	Q12=98	Q13=98	Q14=98	Q15=95	



Photometric Parameters

Luminous Flux: 938.81 lm	Efficiency: 84.27 lm/W	Radiant Power: 3.404 W
Total mains efficacy: 99.11 lm/W	Energy Efficiency Class: F (EU 2019/2015)	
Pupil Flux: 1528.30 Plm	Pupil Lumens Per Watt: 137.19 Plm/W	Pupil Factor (Kp): 1.628
Cirtopic Flux: 3281.31 lm		

Electric Parameters

Voltage: 231.10V	Current: 0.0510A	Power: 11.14W
Power Factor: 0.9360	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: 46785 (2504)	CCD Integration Time: 353.69 ms

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

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-06 10:32:58
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0005	0.0093	525	0.5964	11.9103	670	0.5947	11.8756
385	0.0013	0.0263	530	0.6186	12.3541	675	0.5526	11.0350
390	0.0012	0.0237	535	0.6330	12.6410	680	0.5052	10.0893
395	0.0003	0.0065	540	0.6460	12.9003	685	0.4597	9.1797
400	0.0011	0.0210	545	0.6566	13.1121	690	0.4168	8.3232
405	0.0001	0.0014	550	0.6668	13.3168	695	0.3714	7.4163
410	0.0004	0.0086	555	0.6757	13.4934	700	0.3295	6.5792
415	0.0007	0.0136	560	0.6803	13.5861	705	0.2930	5.8507
420	0.0030	0.0597	565	0.6827	13.6329	710	0.2564	5.1201
425	0.0152	0.3045	570	0.6824	13.6274	715	0.2249	4.4904
430	0.0436	0.8704	575	0.6839	13.6573	720	0.1948	3.8909
435	0.0893	1.7842	580	0.6811	13.6007	725	0.1698	3.3902
440	0.1708	3.4104	585	0.6806	13.5925	730	0.1444	2.8843
445	0.3190	6.3703	590	0.6807	13.5935	735	0.1198	2.3933
450	0.5767	11.5166	595	0.6866	13.7116	740	0.0990	1.9772
455	0.8946	17.8657	600	0.6948	13.8750	745	0.0818	1.6334
460	0.9847	19.6648	605	0.7071	14.1204	750	0.0777	1.5510
465	0.7888	15.7521	610	0.7198	14.3735	755	0.0457	0.9121
470	0.6135	12.2508	615	0.7381	14.7390	760	0.0300	0.5998
475	0.5132	10.2481	620	0.7482	14.9418	765	0.0214	0.4276
480	0.4176	8.3397	625	0.7599	15.1759	770	0.0110	0.2205
485	0.3581	7.1518	630	0.7648	15.2737	775	0.0095	0.1906
490	0.3525	7.0398	635	0.7622	15.2219	780	0.0044	0.0888
495	0.3734	7.4577	640	0.7574	15.1258	785	0.0047	0.0938
500	0.4096	8.1801	645	0.7469	14.9162	790	0.0016	0.0312
505	0.4551	9.0884	650	0.7279	14.5355	795	0.0012	0.0240
510	0.5015	10.0146	655	0.7043	14.0658	800	0.0058	0.1153
515	0.5391	10.7652	660	0.6729	13.4371			
520	0.5726	11.4351	665	0.6349	12.6792			

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

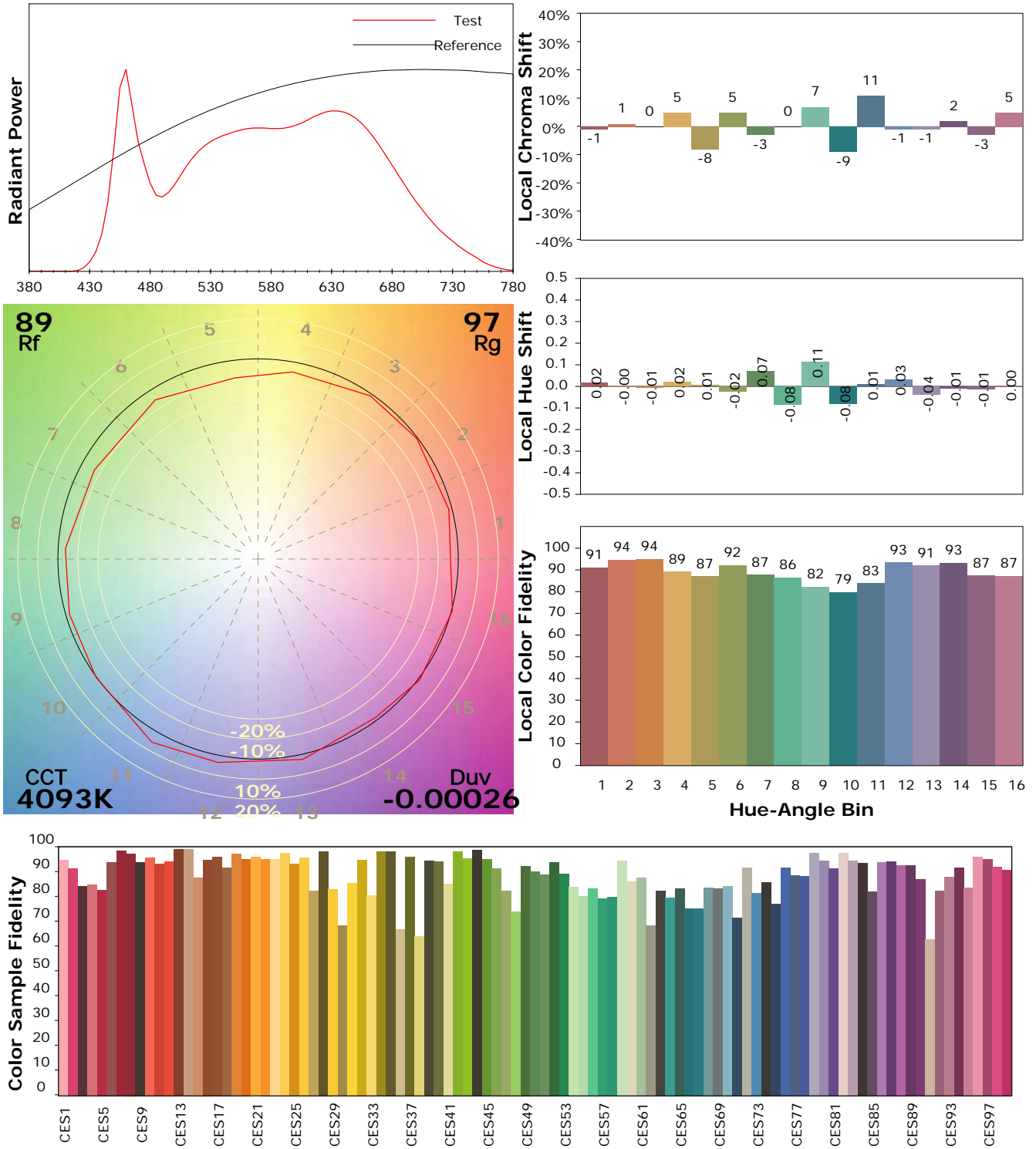
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IES TM-30-18 Color Rendition Report

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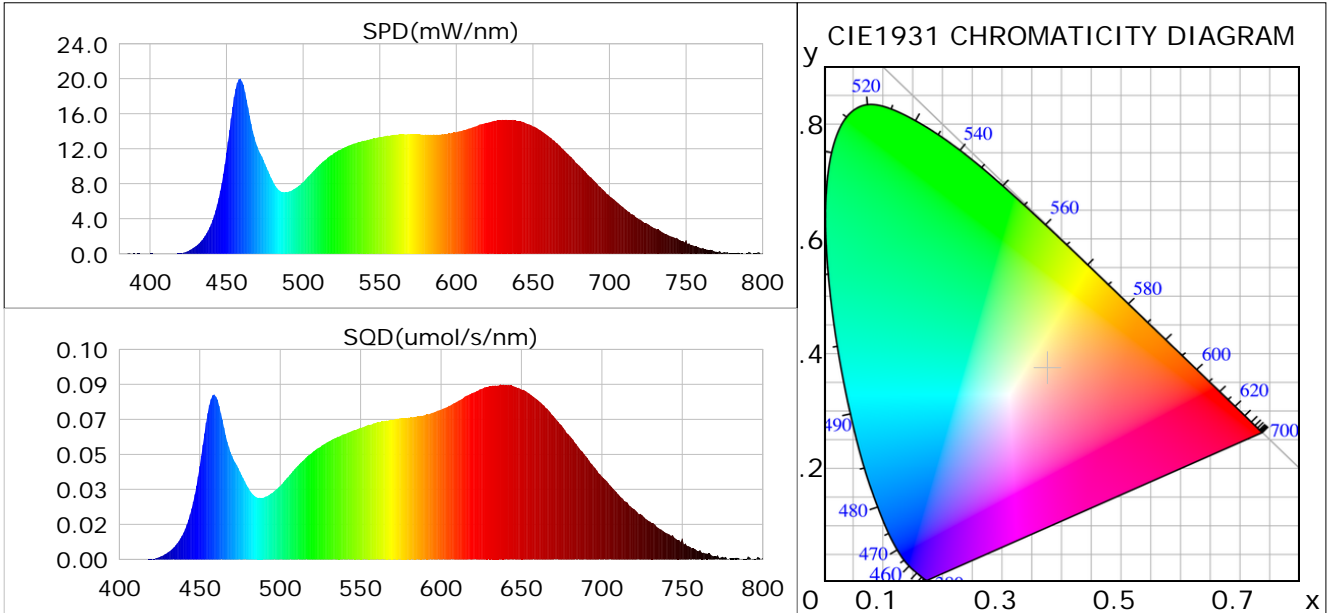
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Test Device: Lisun LMS-9000B
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Plant optical param data

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 Dominant Wavelength: 578.9nm Color Purity: 0.250
 CRI: $R_a=95.5$



Plant Optical Param

$ \mu_v(lm): 938.81$	$Q_v(lm.s): 938.81$
$ \mu_e, \dot{E}(W/nm): 3.40$	$Q_e(J): 3.40$
$ \mu_e(W): 3.21$	$ \mu_{fr}(W): 0.20$
$ \zeta_e: 0.29$	$ \zeta_{fr}: 0.02$
$PPE(umol/s/w): 1.38$	$K_{fr}: 0.10$
$Erb_Ratio: 1.90$	$PPF(umol/s): 15.36$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 2.63$
$PPF(500-600)(umol/s): 5.82$	$PPF(600-700)(umol/s): 6.91$
$PPF_{fr}(700-800)(umol/s): 1.15$	$PPF.t(umol): 15.36$
$ \mu_{ch-A.t}(J): 0.27$	$ \mu_{ch-A}(W): 0.27$
$ \mu_{ch-B.t}(J): 0.16$	$ \mu_{ch-B}(W): 0.16$
$ \mu_b.t(J): 0.67$	$ \mu_b(W): 0.67$
$ \mu_y.t(J): 1.27$	$ \mu_y(W): 1.27$
$ \mu_r.t(J): 1.29$	$ \mu_r(W): 1.29$

Electric Parameters

Voltage: 231.10V	Current: 0.0510A	Power: 11.14W
Power Factor: 0.9360	Frequency: 49.99Hz	

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