

Lightsource Test Report

Product Information

Product Category: LED-Röhre	Product Type: LED-Röhre-TRF
Product Spec: Ledtube-145-5NWM-21W-TRF	Product Number: 1
Manufacturer: METOLIGHT	Submitted Unit: 104526
Buyer: 5931	

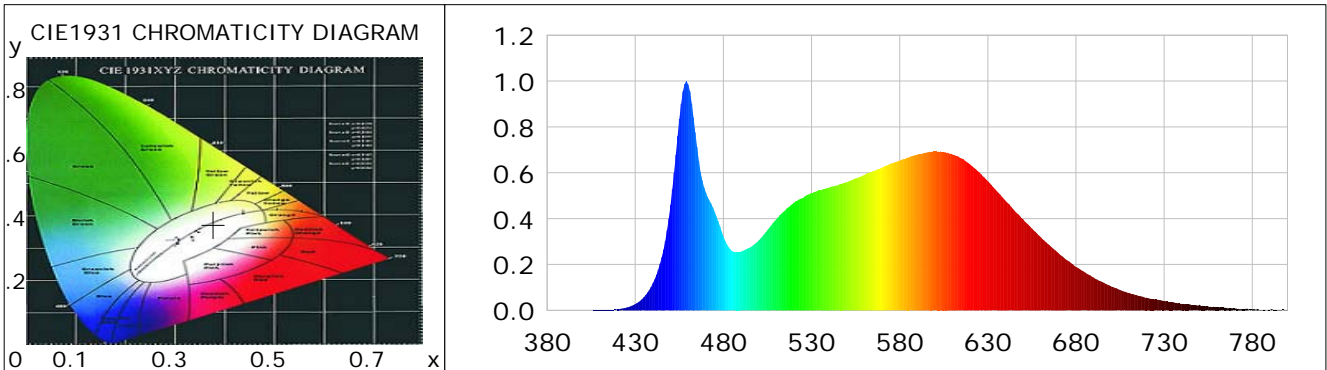
CIE Colorimetric Parameters

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: 2683.0 lm	Efficiency: 118.14 lm/W	Radiant Power: 8.380 W
Total mains efficacy: 128.66 lm/W	Energy Efficiency Class: E (EU 2019/2015)	
Pupil Flux: 4235.15 Plm	Pupil Lumens Per Watt: 186.49 Plm/W	Pupil Factor (Kp): 1.579
Cirtopic Flux: 8987.29 lm		

Electric Parameters

Voltage: 229.81V	Current: 0.1050A	Power: 22.71W
Power Factor: 0.9420	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

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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	0.0123	525	0.4898	32.2965	670	0.2503	16.5041
385	0.0006	0.0420	530	0.5112	33.7088	675	0.2185	14.4063
390	0.0003	0.0168	535	0.5236	34.5213	680	0.1897	12.5101
395	0.0003	0.0202	540	0.5361	35.3447	685	0.1660	10.9459
400	0.0006	0.0366	545	0.5458	35.9874	690	0.1426	9.4008
405	0.0006	0.0381	550	0.5586	36.8298	695	0.1231	8.1142
410	0.0012	0.0823	555	0.5754	37.9407	700	0.1044	6.8861
415	0.0025	0.1615	560	0.5908	38.9518	705	0.0888	5.8552
420	0.0050	0.3306	565	0.6082	40.1049	710	0.0762	5.0238
425	0.0123	0.8111	570	0.6226	41.0483	715	0.0647	4.2627
430	0.0273	1.8017	575	0.6407	42.2436	720	0.0552	3.6364
435	0.0581	3.8302	580	0.6535	43.0898	725	0.0476	3.1372
440	0.1184	7.8037	585	0.6666	43.9495	730	0.0413	2.7214
445	0.2318	15.2856	590	0.6793	44.7890	735	0.0350	2.3065
450	0.4606	30.3722	595	0.6881	45.3722	740	0.0286	1.8865
455	0.8350	55.0571	600	0.6932	45.7050	745	0.0248	1.6354
460	0.9850	64.9471	605	0.6907	45.5427	750	0.0239	1.5782
465	0.7134	47.0363	610	0.6794	44.7949	755	0.0173	1.1415
470	0.5141	33.8986	615	0.6630	43.7120	760	0.0146	0.9594
475	0.4301	28.3588	620	0.6362	41.9469	765	0.0113	0.7446
480	0.3224	21.2563	625	0.6022	39.7091	770	0.0085	0.5636
485	0.2581	17.0162	630	0.5632	37.1313	775	0.0063	0.4171
490	0.2568	16.9310	635	0.5204	34.3102	780	0.0046	0.3055
495	0.2740	18.0684	640	0.4780	31.5166	785	0.0026	0.1738
500	0.3045	20.0756	645	0.4362	28.7589	790	0.0021	0.1413
505	0.3505	23.1103	650	0.3967	26.1591	795	0.0032	0.2079
510	0.3979	26.2350	655	0.3573	23.5567	800	0.0040	0.2639
515	0.4360	28.7477	660	0.3195	21.0685			
520	0.4694	30.9532	665	0.2836	18.7009			

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

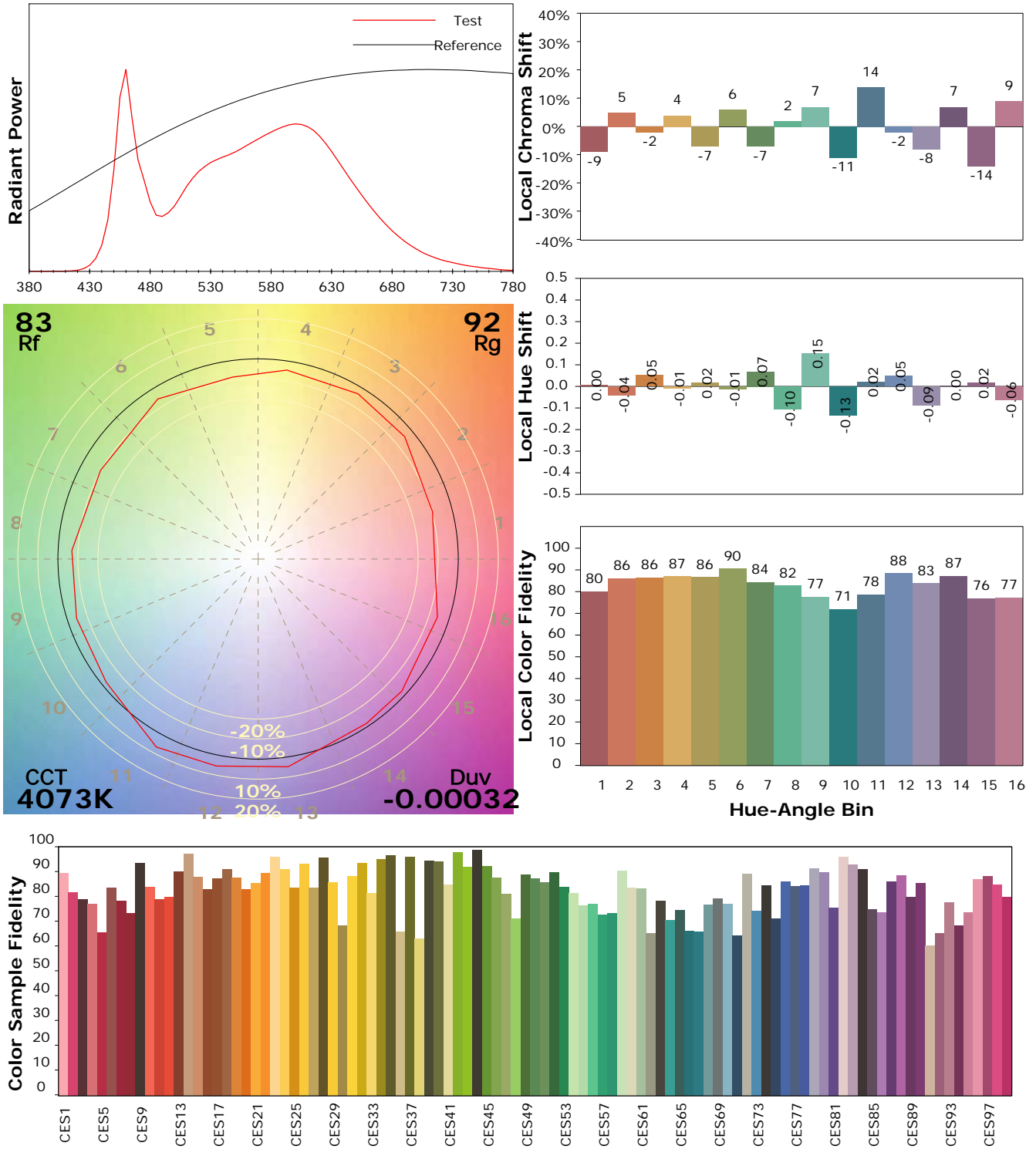
Test Device: Lisun LMS-9000B
 Test Time: 2021-01-22 11:50:17
 Inspector:

IES TM-30-18 Color Rendition Report

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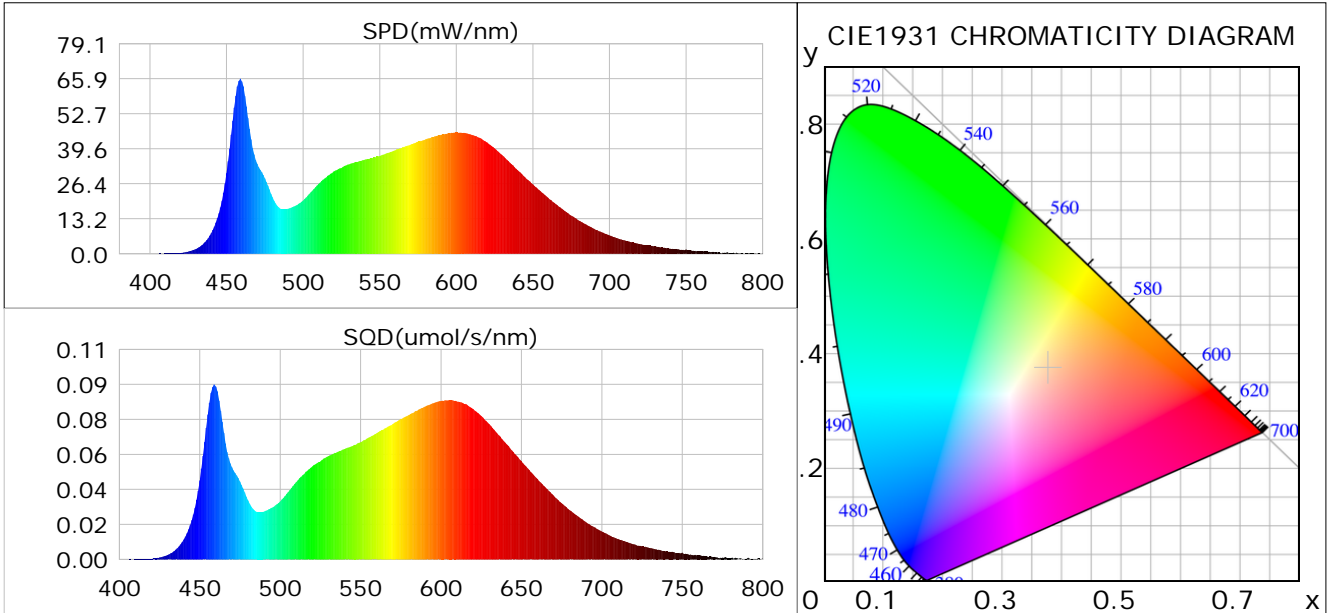
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 Operator: CRE

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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): 2683.00$	$Q_v(lm.s): 2683.00$
$ \mu_e, E(W/nm): 8.38$	$Q_e(J): 8.38$
$ \mu_e(W): 8.19$	$ \mu_{fr}(W): 0.20$
$ \zeta_e: 0.36$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.69$	$K_{fr}: 0.05$
$Erb_Ratio: 1.42$	$PPF(umol/s): 38.42$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 7.31$
$PPF(500-600)(umol/s): 16.98$	$PPF(600-700)(umol/s): 14.13$
$PPF_r(700-800)(umol/s): 1.19$	$PPF.t(umol): 38.42$
$ \mu_{ch-A.t}(J): 0.61$	$ \mu_{ch-A}(W): 0.61$
$ \mu_{ch-B.t}(J): 0.41$	$ \mu_{ch-B}(W): 0.41$
$ \mu_b.t(J): 1.88$	$ \mu_b(W): 1.88$
$ \mu_y.t(J): 3.68$	$ \mu_y(W): 3.68$
$ \mu_r.t(J): 2.70$	$ \mu_r(W): 2.70$

Electric Parameters

Voltage: 229.81V	Current: 0.1050A	Power: 22.71W
Power Factor: 0.9420	Frequency: 49.99Hz	

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

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