

Lightsource Test Report

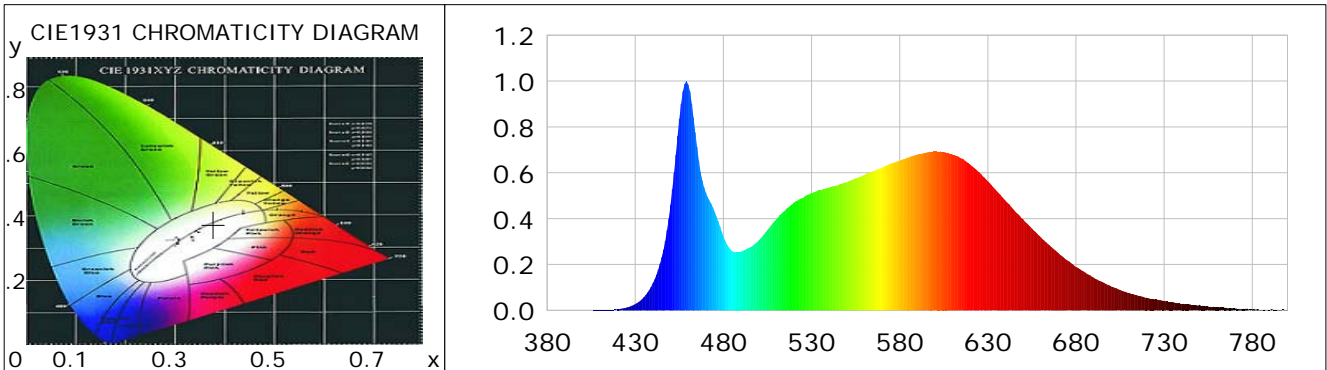
Product Information

Product Category: LED-Röhre
 Product Spec: Ledtube-055-5NWM-8W-TRF
 Manufacturer: METOLIGHT
 Buyer: 3283

Product Type: LED-Röhre-TRF
 Product Number: 1
 Submitted Unit: 103502

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: 1035.0 lm Efficiency: 118.97 lm/W Radiant Power: 3.233 W
 Total mains efficacy: 129.55 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 1633.76 Plm Pupil Lumens Per Watt: 187.79 Plm/W Pupil Factor (Kp): 1.579
 Circopic Flux: 3466.96 lm

Electric Parameters

Voltage: 229.18V Current: 0.0700A Power: 8.70W
 Power Factor: 0.9180 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	0.0047	525	0.4898	12.4588	670	0.2503	6.3666
385	0.0006	0.0162	530	0.5112	13.0036	675	0.2185	5.5574
390	0.0003	0.0065	535	0.5236	13.3170	680	0.1897	4.8259
395	0.0003	0.0078	540	0.5361	13.6346	685	0.1660	4.2225
400	0.0006	0.0141	545	0.5458	13.8826	690	0.1426	3.6265
405	0.0006	0.0147	550	0.5586	14.2076	695	0.1231	3.1302
410	0.0012	0.0317	555	0.5754	14.6361	700	0.1044	2.6564
415	0.0025	0.0623	560	0.5908	15.0261	705	0.0888	2.2587
420	0.0050	0.1275	565	0.6082	15.4710	710	0.0762	1.9380
425	0.0123	0.3129	570	0.6226	15.8349	715	0.0647	1.6444
430	0.0273	0.6950	575	0.6407	16.2960	720	0.0552	1.4028
435	0.0581	1.4776	580	0.6535	16.6224	725	0.0476	1.2102
440	0.1184	3.0104	585	0.6666	16.9540	730	0.0413	1.0498
445	0.2318	5.8966	590	0.6793	17.2779	735	0.0350	0.8898
450	0.4606	11.7164	595	0.6881	17.5029	740	0.0286	0.7277
455	0.8350	21.2390	600	0.6932	17.6313	745	0.0248	0.6309
460	0.9850	25.0541	605	0.6907	17.5687	750	0.0239	0.6088
465	0.7134	18.1448	610	0.6794	17.2802	755	0.0173	0.4404
470	0.5141	13.0768	615	0.6630	16.8624	760	0.0146	0.3701
475	0.4301	10.9398	620	0.6362	16.1815	765	0.0113	0.2873
480	0.3224	8.1999	625	0.6022	15.3183	770	0.0085	0.2174
485	0.2581	6.5642	630	0.5632	14.3239	775	0.0063	0.1609
490	0.2568	6.5313	635	0.5204	13.2356	780	0.0046	0.1179
495	0.2740	6.9701	640	0.4780	12.1579	785	0.0026	0.0670
500	0.3045	7.7444	645	0.4362	11.0941	790	0.0021	0.0545
505	0.3505	8.9151	650	0.3967	10.0912	795	0.0032	0.0802
510	0.3979	10.1205	655	0.3573	9.0873	800	0.0040	0.1018
515	0.4360	11.0898	660	0.3195	8.1274			
520	0.4694	11.9406	665	0.2836	7.2141			

Condition: Tx: 19.8°C, Ti: 0.0°C, R.H.: 60%
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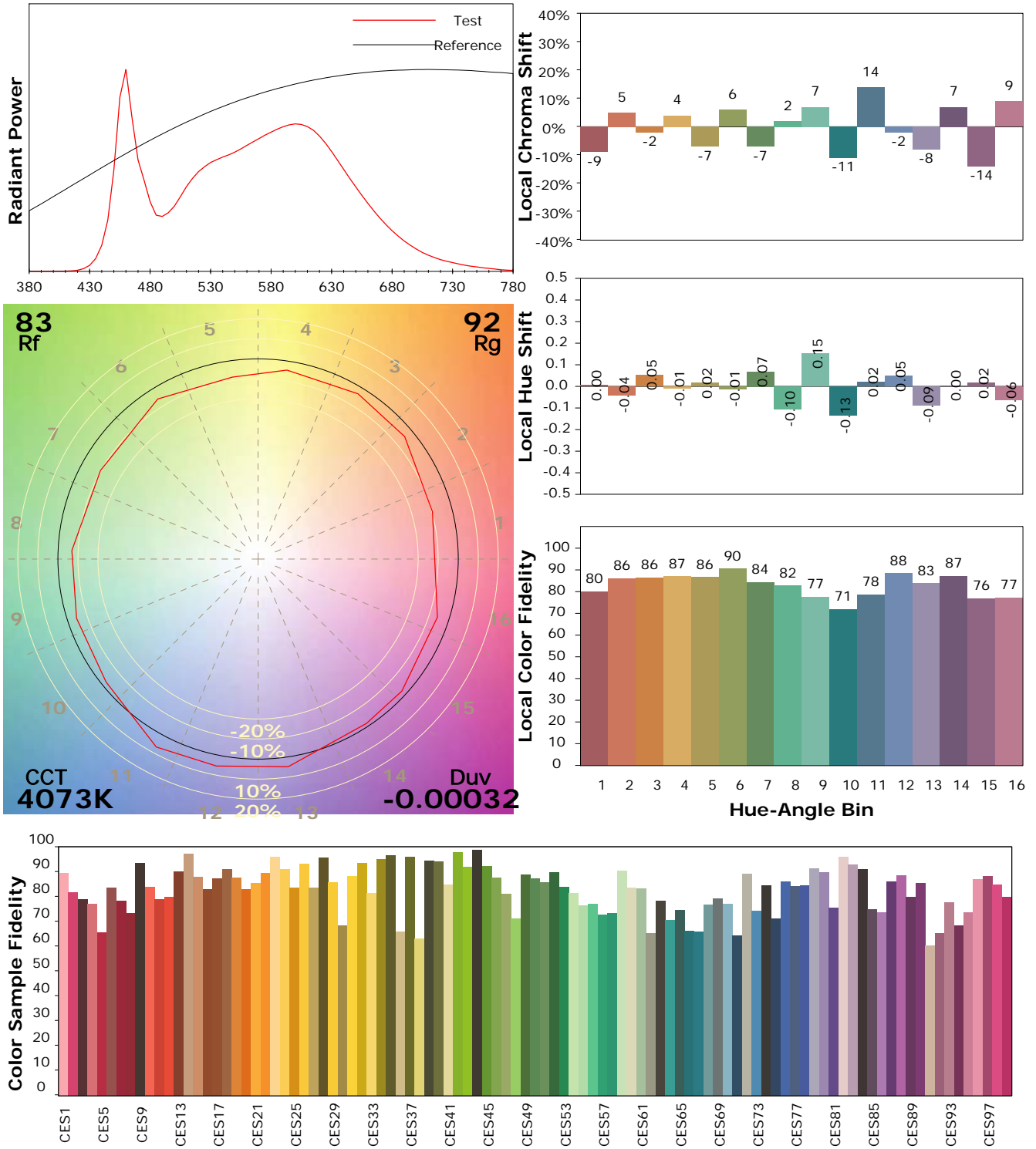
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IES TM-30-18 Color Rendition Report

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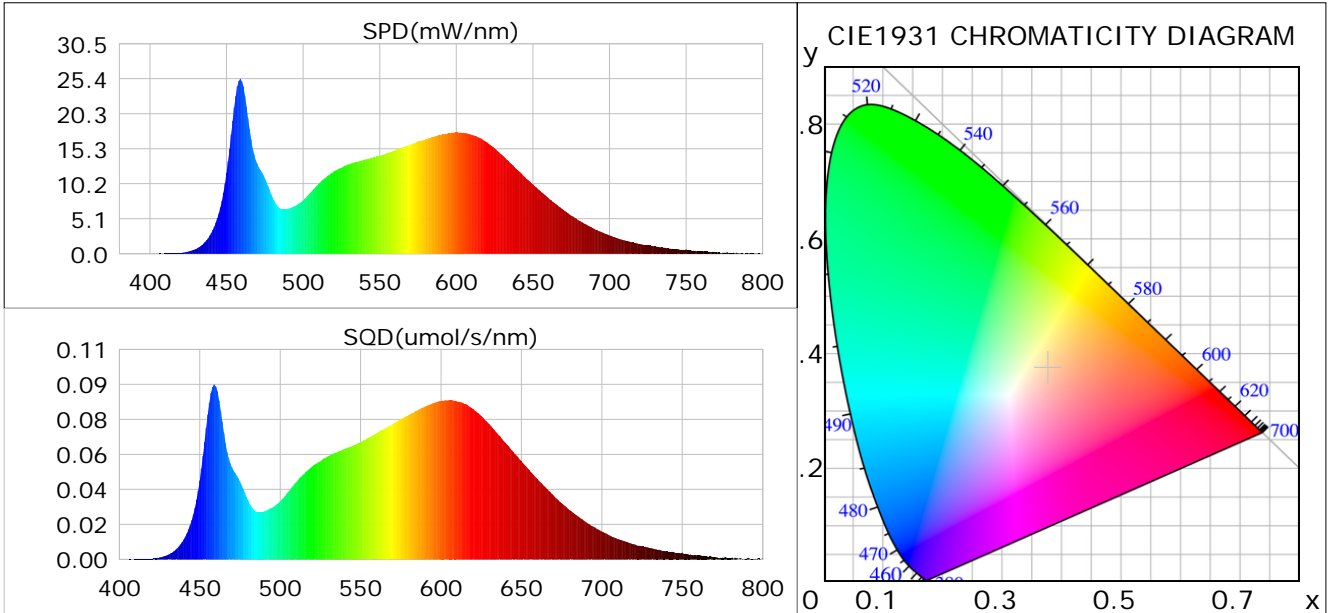
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Plant optical param data

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 CRI: $R_a=86.4$



Plant Optical Param

$ \mu_v(lm): 1035.00$	$Q_v(lm.s): 1035.00$
$ \mu_e, \dot{E}(W/nm): 3.23$	$Q_e(J): 3.23$
$ \mu_e(W): 3.16$	$ \mu_{fr}(W): 0.08$
$ \zeta_e: 0.36$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.70$	$K_{fr}: 0.05$
$Erb_Ratio: 1.42$	$PPF(umol/s): 14.82$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 2.82$
$PPF(500-600)(umol/s): 6.55$	$PPF(600-700)(umol/s): 5.45$
$PPF_r(700-800)(umol/s): 0.46$	$PPF.t(umol): 14.82$
$ \mu_{ch-A.t}(J): 0.23$	$ \mu_{ch-A}(W): 0.23$
$ \mu_{ch-B.t}(J): 0.16$	$ \mu_{ch-B}(W): 0.16$
$ \mu_b.t(J): 0.72$	$ \mu_b(W): 0.72$
$ \mu_y.t(J): 1.42$	$ \mu_y(W): 1.42$
$ \mu_r.t(J): 1.04$	$ \mu_r(W): 1.04$

Electric Parameters

Voltage: 229.18V	Current: 0.0700A	Power: 8.70W
Power Factor: 0.9180	Frequency: 49.99Hz	

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