

Lightsource Test Report

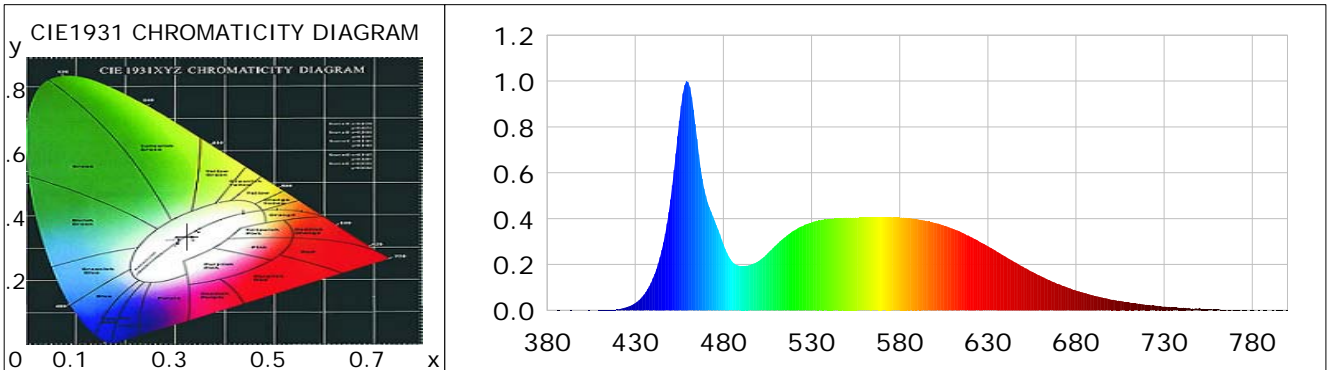
Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-120-8CWM-12W-Nano-135
 Manufacturer: METOLIGHT
 Buyer: 4656

Product Type: LED-Röhre-SCE
 Product Number: 1
 Submitted Unit: 104315

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3244$ $y=0.3373$ $u(u')=0.2028$ $v=0.3163$ $v'=0.4744$
 CCT: $T_c=5874K$ ($duv=0.00175$) Color Ratio: R=0.148 G=0.792 B=0.060
 Peak Wavelength: 459.3nm Half Bandwidth: 19.7nm
 Dominant Wavelength: 497.5nm Color Purity: 0.028
 CRI: Ra = 84.9, avgR(1~14)= 79.0, avgR(1~15)= 79.2 TM30: Rf= 81, Rg= 91
 GAI: GAI_BB_8=90.1, GAI_BB_15=97.0, GAI_EES=85.1
 R1 =85 R2 =95 R3 =94 R4 =79 R5 =83 R6 =88 R7 =85 R8 =71
 R9 =25 R10=83 R11=77 R12=55 R13=89 R14=98 R15=82
 Color Quality Scale: Qa= 80.7, Qf= 80.9, Qp= 79.8, Qg= 90.4
 Q1 =80 Q2 =96 Q3 =80 Q4 =68 Q5 =71 Q6 =74 Q7 =83 Q8 =89
 Q9 =97 Q10=91 Q11=85 Q12=84 Q13=84 Q14=76 Q15=79



Photometric Parameters

Luminous Flux: 1510.3 lm Efficiency: 128.87 lm/W Radiant Power: 4.860 W
 Total mains efficacy: 151.55 lm/W Energy Efficiency Class: D (EU 2019/2015)
 Pupil Flux: 2801.60 Plm Pupil Lumens Per Watt: 239.04 Plm/W Pupil Factor (Kp): 1.855
 Circopic Flux: 6515.76 lm

Electric Parameters

Voltage: 230.60V Current: 0.0540A Power: 11.72W
 Power Factor: 0.9390 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: 45476 (2241) CCD Integration Time: 95.99 ms

Condition: Tx: 18.1°C, Ti: 0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-25 14:32:46
 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	0.0099	525	0.3673	20.7349	670	0.1153	6.5085
385	0.0005	0.0281	530	0.3833	21.6398	675	0.1002	5.6551
390	0.0004	0.0240	535	0.3924	22.1534	680	0.0869	4.9056
395	0.0001	0.0083	540	0.3986	22.5065	685	0.0756	4.2705
400	0.0005	0.0269	545	0.4015	22.6680	690	0.0647	3.6520
405	0.0004	0.0232	550	0.4037	22.7931	695	0.0556	3.1373
410	0.0010	0.0557	555	0.4047	22.8489	700	0.0467	2.6373
415	0.0023	0.1277	560	0.4052	22.8790	705	0.0413	2.3290
420	0.0049	0.2755	565	0.4057	22.9036	710	0.0351	1.9804
425	0.0135	0.7602	570	0.4063	22.9404	715	0.0288	1.6276
430	0.0317	1.7870	575	0.4071	22.9850	720	0.0240	1.3537
435	0.0684	3.8628	580	0.4055	22.8963	725	0.0204	1.1517
440	0.1390	7.8460	585	0.4015	22.6709	730	0.0168	0.9472
445	0.2629	14.8421	590	0.3979	22.4638	735	0.0138	0.7788
450	0.4835	27.2983	595	0.3903	22.0362	740	0.0109	0.6171
455	0.8272	46.7033	600	0.3817	21.5532	745	0.0075	0.4215
460	0.9952	56.1882	605	0.3704	20.9152	750	0.0106	0.5974
465	0.7476	42.2095	610	0.3565	20.1282	755	0.0051	0.2905
470	0.5001	28.2344	615	0.3404	19.2161	760	0.0051	0.2879
475	0.3914	22.0999	620	0.3215	18.1517	765	0.0015	0.0847
480	0.2887	16.2987	625	0.3007	16.9782	770	0.0018	0.1043
485	0.2128	12.0152	630	0.2797	15.7898	775	0.0010	0.0565
490	0.1928	10.8881	635	0.2566	14.4889	780	0.0017	0.0941
495	0.1982	11.1894	640	0.2339	13.2040	785	0.0006	0.0356
500	0.2151	12.1470	645	0.2114	11.9374	790	0.0006	0.0354
505	0.2483	14.0172	650	0.1902	10.7409	795	0.0018	0.1004
510	0.2860	16.1469	655	0.1687	9.5222	800	0.0015	0.0830
515	0.3191	18.0185	660	0.1496	8.4441			
520	0.3482	19.6609	665	0.1319	7.4473			

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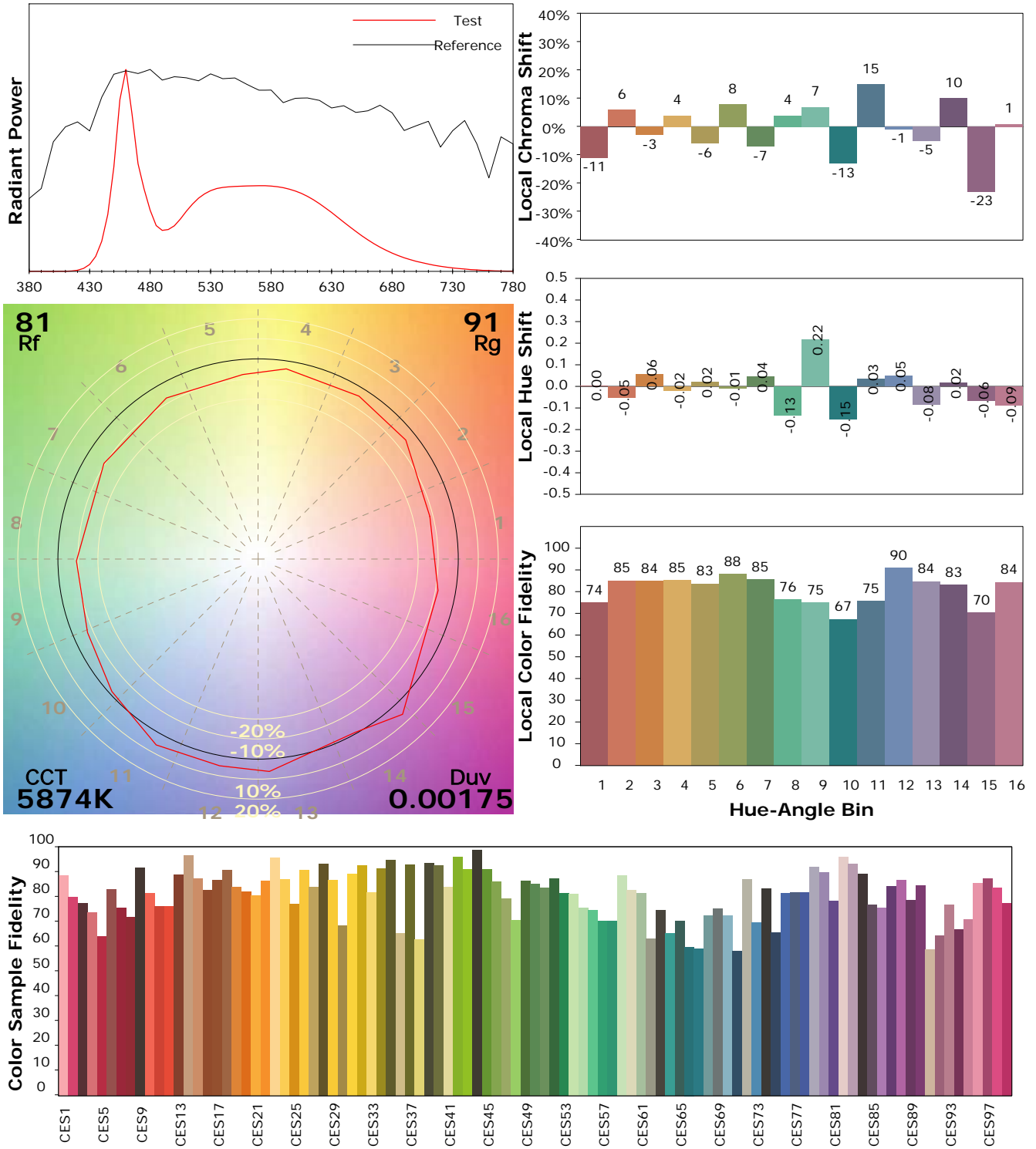
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IES TM-30-18 Color Rendition Report

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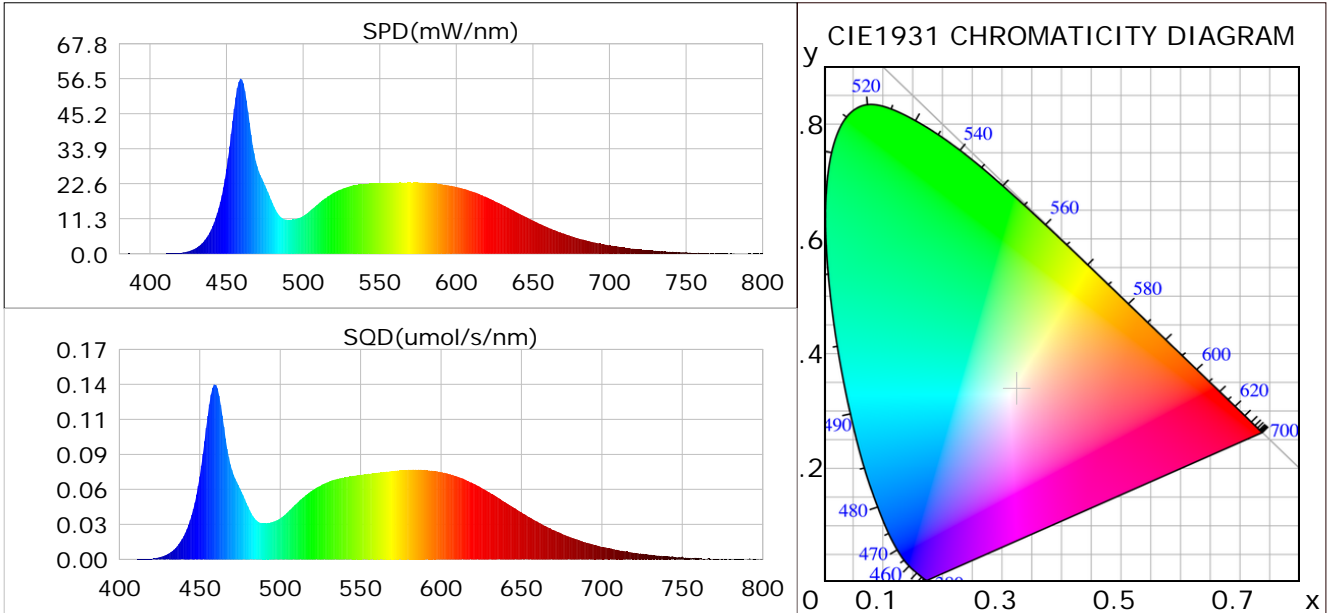
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Plant optical param data

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 Dominant Wavelength: 497.5nm Color Purity: 0.028
 CRI: $R_a=84.9$



Plant Optical Param

$ \mu_v(lm): 1510.30$	$Q_v(lm.s): 1510.30$
$ \mu_e, \dot{E}(W/nm): 4.86$	$Q_e(J): 4.86$
$ \mu_e(W): 4.79$	$ \mu_{fr}(W): 0.07$
$ \zeta_e: 0.41$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.86$	$K_{fr}: 0.04$
$Erb_Ratio: 0.73$	$PPF(umol/s): 21.78$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 6.01$
$PPF(500-600)(umol/s): 9.78$	$PPF(600-700)(umol/s): 5.98$
$PPF_r(700-800)(umol/s): 0.42$	$PPF.t(umol): 21.78$
$ \mu_{ch-A.t}(J): 0.36$	$ \mu_{ch-A}(W): 0.36$
$ \mu_{ch-B.t}(J): 0.29$	$ \mu_{ch-B}(W): 0.29$
$ \mu_b.t(J): 1.55$	$ \mu_b(W): 1.55$
$ \mu_y.t(J): 2.13$	$ \mu_y(W): 2.13$
$ \mu_r.t(J): 1.15$	$ \mu_r(W): 1.15$

Electric Parameters

Voltage: 230.60V	Current: 0.0540A	Power: 11.72W
Power Factor: 0.9390	Frequency: 49.99Hz	

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