

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-090-8NWM-14W-VDE-RM
 Manufacturer: METOLIGHT
 Buyer: 6361

Product Type: LED-Röhre-VDE
 Product Number: 1
 Submitted Unit: 101536

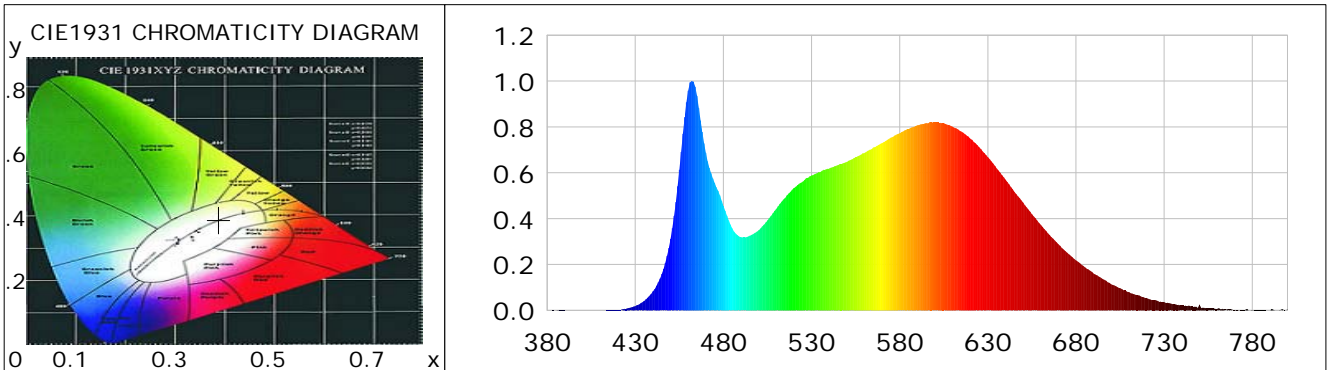
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3882$ $y=0.3890$ $u(u')=0.2253$ $v=0.3387$ $v'=0.5080$
 CCT: $T_c=3888K$ ($duv=0.00345$) Color Ratio: $R=0.191$ $G=0.764$ $B=0.044$
 Peak Wavelength: 462.1nm Half Bandwidth: 24.7nm
 Dominant Wavelength: 577.9nm Color Purity: 0.333
 CRI: $R_a=85.0$, $avgR(1\sim14)=79.8$, $avgR(1\sim15)=79.7$ TM30: $R_f=81$, $R_g=89$
 GAI: $GAI_BB_8=83.9$, $GAI_BB_15=93.5$, $GAI_EES=64.6$

R1 =86	R2 =96	R3 =95	R4 =78	R5 =83	R6 =93	R7 =82	R8 =67
R9 =24	R10=88	R11=77	R12=61	R13=89	R14=98	R15=79	

Color Quality Scale: $Q_a=83.6$, $Q_f=84.0$, $Q_p=81.6$, $Q_g=88.4$

Q1 =77	Q2 =91	Q3 =89	Q4 =78	Q5 =76	Q6 =76	Q7 =83	Q8 =89
Q9 =95	Q10=95	Q11=92	Q12=91	Q13=89	Q14=78	Q15=79	



Photometric Parameters

Luminous Flux: 1944.6 lm Efficiency: 135.32 lm/W Radiant Power: 5.922 W
 Total mains efficacy: 159.14 lm/W Energy Efficiency Class: D (EU 2019/2015)
 Pupil Flux: 3003.51 Plm Pupil Lumens Per Watt: 209.01 Plm/W Pupil Factor (Kp): 1.545
 Circopic Flux: 6297.96 lm

Electric Parameters

Voltage: 230.60V Current: 0.0670A Power: 14.37W
 Power Factor: 0.9250 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: 45445 (2590) CCD Integration Time: 155.81 ms

Condition: $T_x=22.1^{\circ}C$, $T_i=0.0^{\circ}C$, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-13 15:13:27
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0003	0.0121	525	0.5618	22.9976	670	0.2888	11.8223
385	0.0007	0.0270	530	0.5879	24.0657	675	0.2517	10.3037
390	0.0008	0.0334	535	0.6035	24.7047	680	0.2180	8.9260
395	0.0001	0.0055	540	0.6189	25.3378	685	0.1881	7.7021
400	0.0003	0.0112	545	0.6332	25.9218	690	0.1600	6.5505
405	0.0001	0.0023	550	0.6472	26.4945	695	0.1369	5.6047
410	0.0000	0.0006	555	0.6683	27.3577	700	0.1138	4.6581
415	0.0016	0.0643	560	0.6863	28.0951	705	0.0968	3.9634
420	0.0034	0.1383	565	0.7102	29.0738	710	0.0797	3.2608
425	0.0076	0.3105	570	0.7296	29.8687	715	0.0669	2.7368
430	0.0188	0.7676	575	0.7533	30.8378	720	0.0542	2.2174
435	0.0410	1.6784	580	0.7725	31.6255	725	0.0451	1.8458
440	0.0828	3.3896	585	0.7901	32.3467	730	0.0361	1.4785
445	0.1589	6.5033	590	0.8076	33.0615	735	0.0268	1.0966
450	0.3120	12.7731	595	0.8174	33.4621	740	0.0210	0.8591
455	0.6134	25.1127	600	0.8191	33.5316	745	0.0178	0.7280
460	0.9583	39.2323	605	0.8167	33.4341	750	0.0248	1.0163
465	0.9357	38.3065	610	0.8013	32.8037	755	0.0093	0.3818
470	0.6871	28.1286	615	0.7799	31.9283	760	0.0064	0.2615
475	0.5564	22.7760	620	0.7497	30.6920	765	0.0038	0.1562
480	0.4565	18.6869	625	0.7120	29.1483	770	0.0029	0.1200
485	0.3577	14.6427	630	0.6680	27.3455	775	0.0023	0.0928
490	0.3194	13.0747	635	0.6192	25.3480	780	0.0029	0.1183
495	0.3255	13.3266	640	0.5700	23.3335	785	0.0008	0.0344
500	0.3495	14.3062	645	0.5177	21.1951	790	0.0003	0.0130
505	0.3929	16.0848	650	0.4701	19.2464	795	0.0008	0.0338
510	0.4432	18.1445	655	0.4190	17.1541	800	0.0050	0.2048
515	0.4906	20.0845	660	0.3730	15.2702			
520	0.5340	21.8596	665	0.3292	13.4773			

Condition: Tx:22.1'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

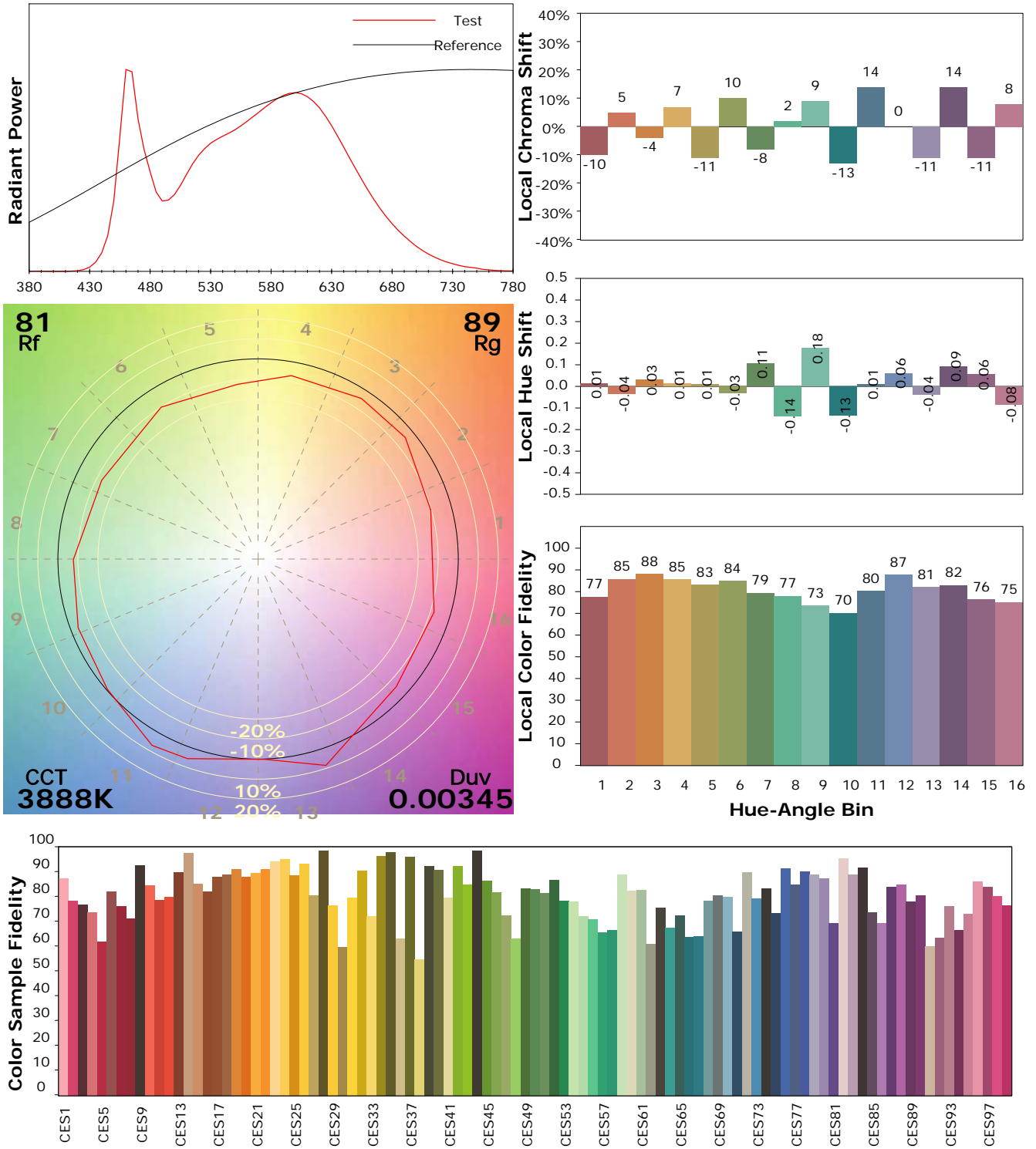
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IES TM-30-18 Color Rendition Report

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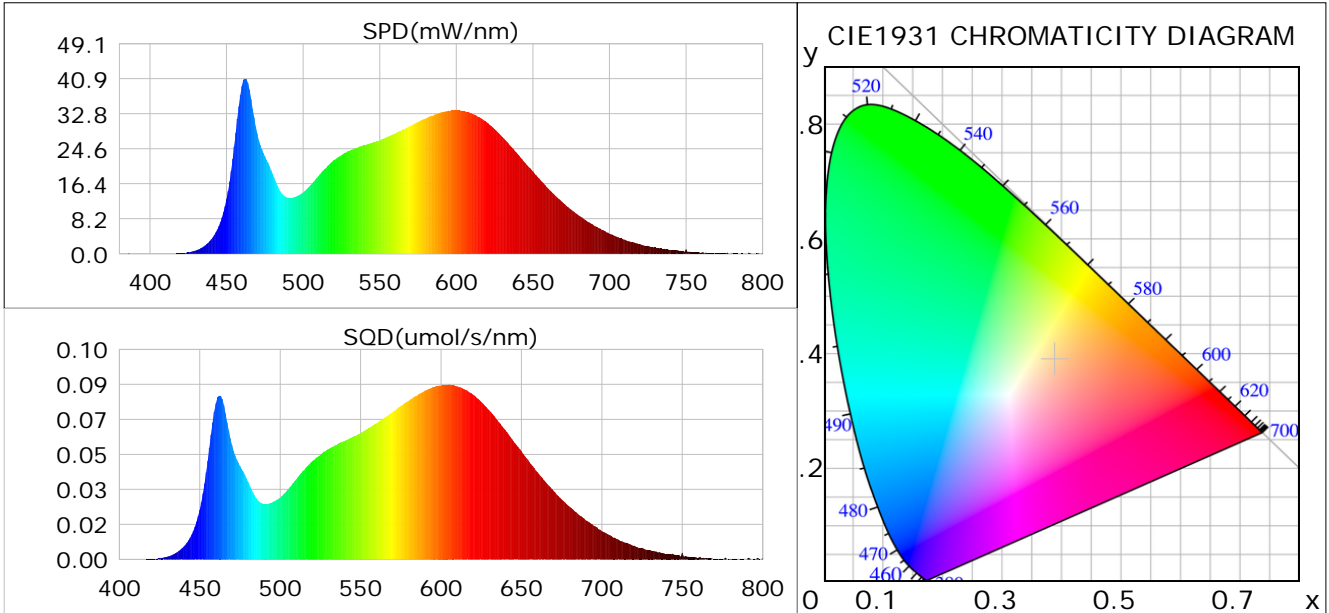
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Plant optical param data

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 CRI: $R_a=85.0$



Plant Optical Param

$ \mu_v(lm): 1944.60$	$Q_v(lm.s): 1944.60$
$ \mu_e, \dot{E}(W/nm): 5.92$	$Q_e(J): 5.92$
$ \mu_e(W): 5.81$	$ \mu_{fr}(W): 0.11$
$ \zeta_e: 0.40$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.91$	$K_{fr}: 0.05$
$Erb_Ratio: 1.57$	$PPF(umol/s): 27.42$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 4.85$
$PPF(500-600)(umol/s): 12.26$	$PPF(600-700)(umol/s): 10.31$
$PPF_{fr}(700-800)(umol/s): 0.66$	$PPF.t(umol): 27.42$
$ \mu_{ch-A.t}(J): 0.42$	$ \mu_{ch-A}(W): 0.42$
$ \mu_{ch-B.t}(J): 0.28$	$ \mu_{ch-B}(W): 0.28$
$ \mu_b.t(J): 1.24$	$ \mu_b(W): 1.24$
$ \mu_y.t(J): 2.65$	$ \mu_y(W): 2.65$
$ \mu_r.t(J): 1.97$	$ \mu_r(W): 1.97$

Electric Parameters

Voltage: 230.60V	Current: 0.0670A	Power: 14.37W
Power Factor: 0.9250	Frequency: 49.99Hz	

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