

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-150-8WWM-22W-ECOP
 Manufacturer: METOLIGHT
 Buyer: 4656

Product Type: LED-Röhre-ECO
 Product Number: 1
 Submitted Unit: 105090

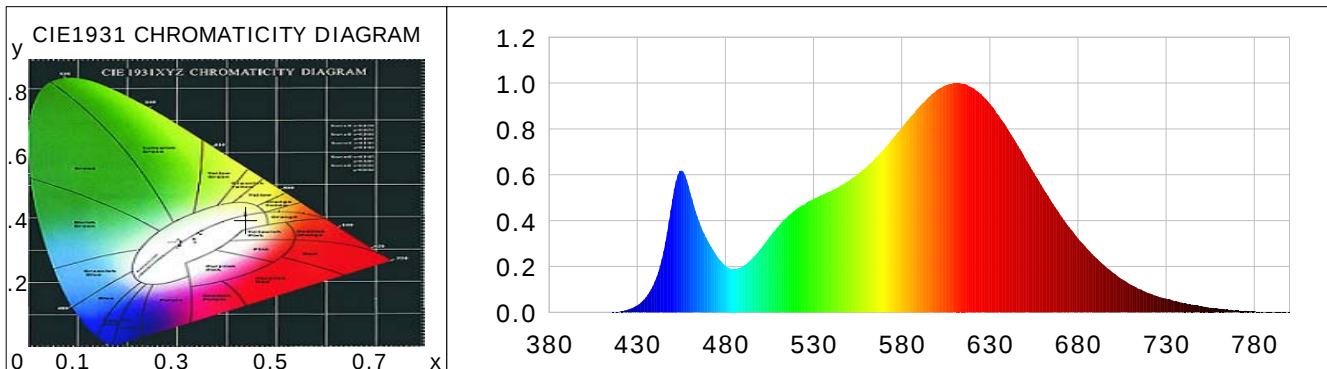
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.4391$ $y=0.3950$ $u(u')=0.2560$ $v=0.3454$ $v'=0.5181$
 CCT: $T_c=2888K$ ($duv=-0.00391$) Color Ratio: $R=0.247$ $G=0.726$ $B=0.027$
 Peak Wavelength: 612.1nm Half Bandwidth: 132.3nm
 Dominant Wavelength: 584.8nm Color Purity: 0.504
 CRI: $R_a=87.1$, $avgR(1\sim14)=83.3$, $avgR(1\sim15)=83.2$ TM30: $R_f=86$, $R_g=98$
 GAI: $GAI_BB_8=107.1$, $GAI_BB_15=114.8$, $GAI_EES=58.1$

R1 =88	R2 =95	R3 =96	R4 =86	R5 =88	R6 =94	R7 =83	R8 =67
R9 =30	R10=89	R11=86	R12=76	R13=90	R14=99	R15=82	

Color Quality Scale: $Q_a=85.0$, $Q_f=85.7$, $Q_p=89.2$, $Q_g=95.6$

Q1 =83	Q2 =95	Q3 =83	Q4 =81	Q5 =85	Q6 =87	Q7 =85	Q8 =86
Q9 =96	Q10=91	Q11=87	Q12=85	Q13=85	Q14=79	Q15=80	



Photometric Parameters

Luminous Flux: 2992.9 lm	Efficiency: 125.54 lm/W	Radiant Power: 9.507 W
Total mains efficacy: 147.64 lm/W	Energy Efficiency Class: D (EU 2019/2015)	
Pupil Flux: 3802.88 Plm	Pupil Lumens Per Watt: 159.52 Plm/W	Pupil Factor (Kp): 1.271
Cirtpic Flux: 7091.93 lm		

Electric Parameters

Voltage: 230.60V	Current: 0.1080A	Power: 23.84W
Power Factor: 0.9550	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: 44642 (1967)	CCD Integration Time: 125.29 ms

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

Test Device: Lisun LMS-9000B
 Test Time: 2021-02-19 09:47:35
 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	0.0165	525	0.4701	29.6886	670	0.4250	26.8447
385	0.0005	0.0304	530	0.4946	31.2383	675	0.3714	23.4574
390	0.0002	0.0102	535	0.5121	32.3461	680	0.3227	20.3838
395	0.0004	0.0247	540	0.5297	33.4544	685	0.2783	17.5795
400	0.0002	0.0146	545	0.5507	34.7795	690	0.2392	15.1099
405	0.0001	0.0056	550	0.5734	36.2130	695	0.2044	12.9102
410	0.0004	0.0226	555	0.6030	38.0833	700	0.1718	10.8475
415	0.0006	0.0377	560	0.6345	40.0727	705	0.1444	9.1169
420	0.0039	0.2457	565	0.6720	42.4441	710	0.1202	7.5886
425	0.0129	0.8128	570	0.7120	44.9698	715	0.1015	6.4081
430	0.0303	1.9155	575	0.7587	47.9183	720	0.0838	5.2933
435	0.0660	4.1679	580	0.8047	50.8230	725	0.0710	4.4846
440	0.1350	8.5242	585	0.8522	53.8207	730	0.0602	3.8008
445	0.2687	16.9690	590	0.8968	56.6408	735	0.0487	3.0730
450	0.4940	31.2019	595	0.9362	59.1307	740	0.0401	2.5295
455	0.6190	39.0929	600	0.9699	61.2589	745	0.0341	2.1531
460	0.5227	33.0134	605	0.9904	62.5512	750	0.0275	1.7362
465	0.3970	25.0764	610	0.9987	63.0785	755	0.0203	1.2802
470	0.3119	19.6975	615	0.9971	62.9760	760	0.0157	0.9922
475	0.2478	15.6488	620	0.9803	61.9159	765	0.0124	0.7858
480	0.2035	12.8546	625	0.9521	60.1356	770	0.0086	0.5443
485	0.1886	11.9123	630	0.9093	57.4311	775	0.0073	0.4638
490	0.2009	12.6899	635	0.8595	54.2823	780	0.0049	0.3095
495	0.2330	14.7148	640	0.8005	50.5589	785	0.0025	0.1575
500	0.2776	17.5331	645	0.7391	46.6829	790	0.0015	0.0948
505	0.3283	20.7349	650	0.6719	42.4375	795	0.0020	0.1253
510	0.3755	23.7157	655	0.6093	38.4824	800	0.0014	0.0855
515	0.4147	26.1939	660	0.5441	34.3659			
520	0.4488	28.3480	665	0.4823	30.4590			

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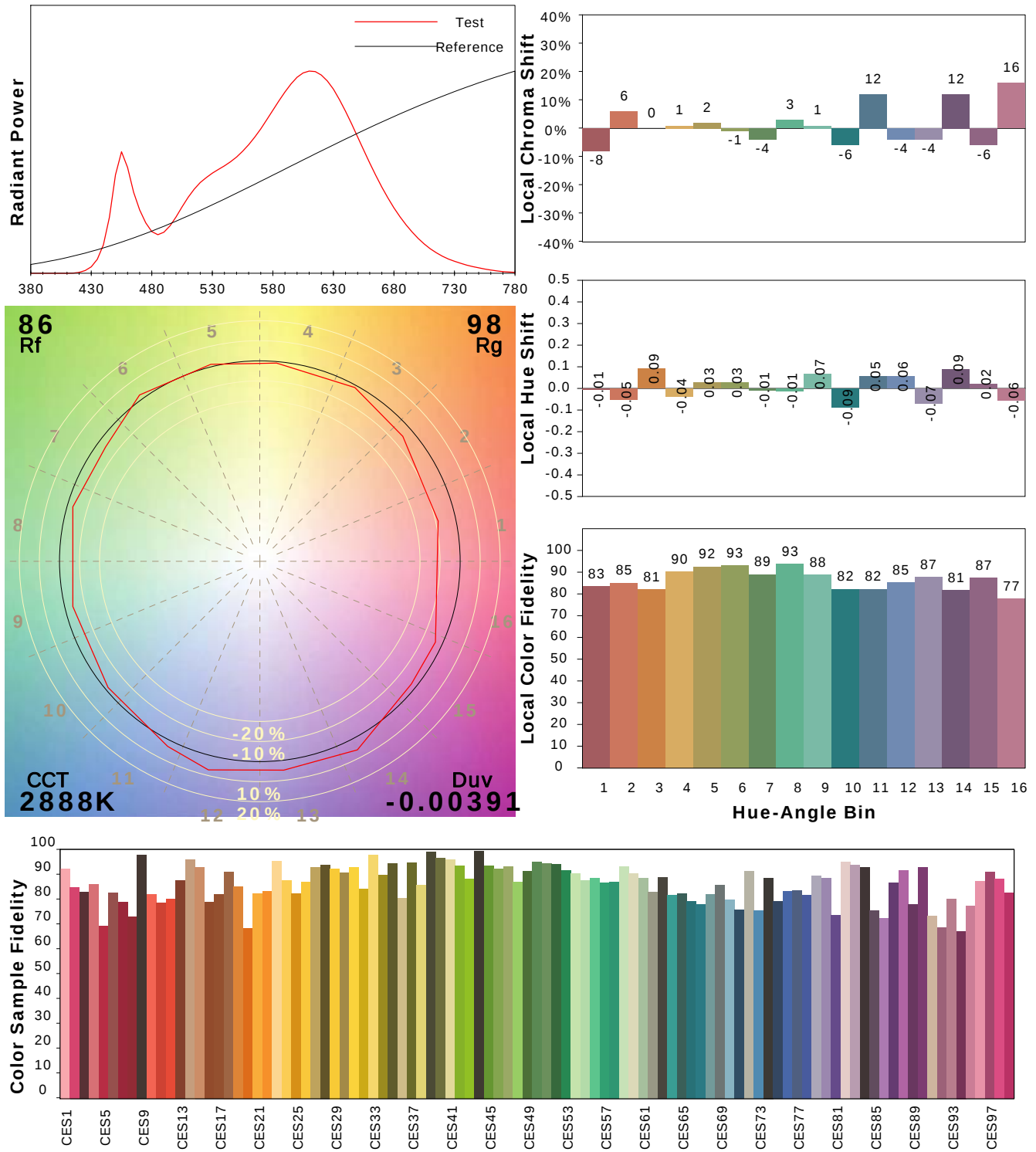
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IES TM-30-18 Color Rendition Report

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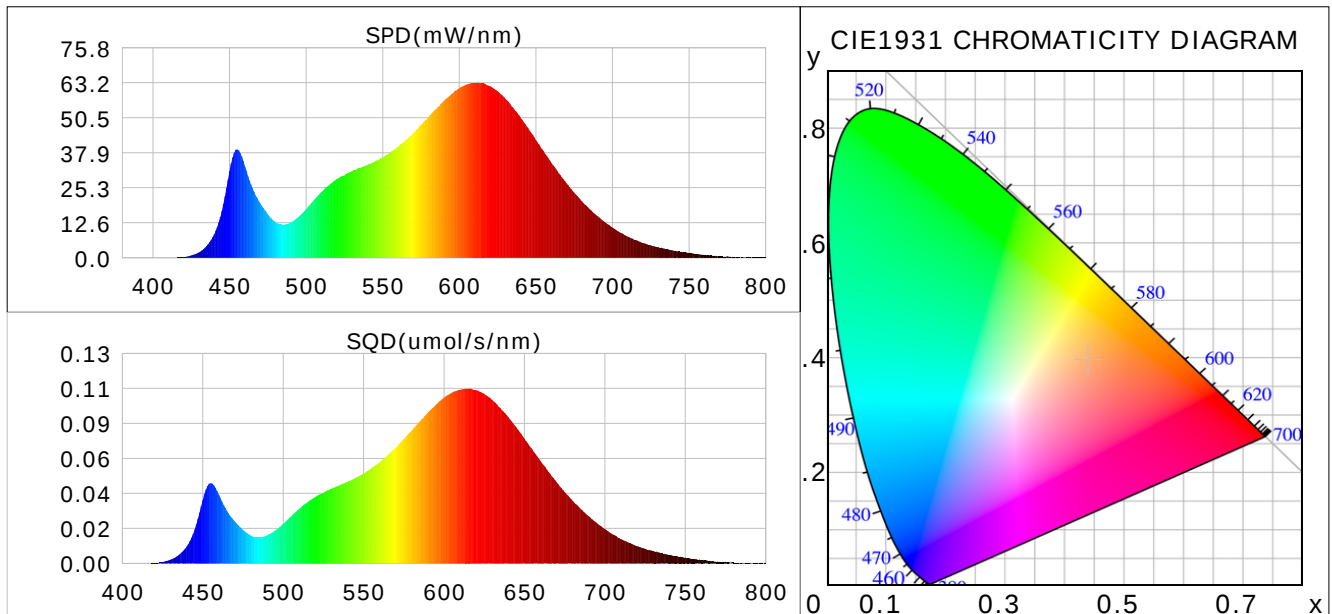
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Plant optical param data

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 CRI: Ra= 87.1



Plant Optical Param

$\mu_v(lm): 2992.90$	$Q_v(lm.s): 2992.90$
$\mu_e, \dot{E}(W/nm): 9.51$	$Q_e(J): 9.51$
$\mu_e(W): 9.23$	$\mu_{fr}(W): 0.29$
$\zeta_e: 0.39$	$\zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.88$	$K_{fr}: 0.07$
$Erb_Ratio: 3.14$	$PPF(umol/s): 44.81$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 5.03$
$PPF(500-600)(umol/s): 18.11$	$PPF(600-700)(umol/s): 21.67$
$PF_{fr}(700-800)(umol/s): 1.67$	$PPF.t(umol): 44.81$
$\mu_{ch-A.t}(J): 0.75$	$\mu_{ch-A}(W): 0.75$
$\mu_{ch-B.t}(J): 0.38$	$\mu_{ch-B}(W): 0.38$
$\mu_b.t(J): 1.29$	$\mu_b(W): 1.29$
$\mu_y.t(J): 3.89$	$\mu_y(W): 3.89$
$\mu_r.t(J): 4.13$	$\mu_r(W): 4.13$

Electric Parameters

Voltage: 230.60V	Current: 0.1080A	Power: 23.84W
Power Factor: 0.9550	Frequency: 49.99Hz	