

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-120-8Deli-20WM
 Manufacturer: METOLIGHT
 Buyer: 7116

Product Type: LED-Röhre-Spezial
 Product Number: 1
 Submitted Unit: 105186

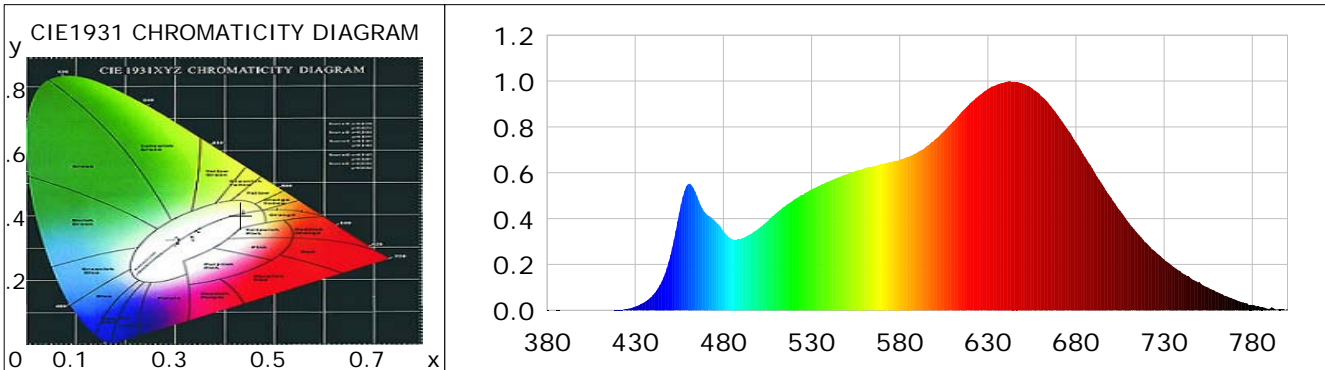
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.4327$ $y=0.4030$ $u(u')=0.2483$ $v=0.3469$ $v'=0.5203$
 CCT: $T_c=3065K$ ($duv=0.00019$) Color Ratio: $R=0.249$ $G=0.715$ $B=0.036$
 Peak Wavelength: 642.2nm Half Bandwidth: 175.3nm
 Dominant Wavelength: 582.5nm Color Purity: 0.508
 CRI: $R_a=95.9$, $avgR(1\sim14)=94.5$, $avgR(1\sim15)=94.5$ TM30: $R_f=89$, $R_g=97$
 GAI: $GAI_BB_8=98.4$, $GAI_BB_15=105.5$, $GAI_EES=58.2$

R1 =96	R2 =97	R3 =99	R4 =96	R5 =96	R6 =95	R7 =95	R8 =94
R9 =90	R10=95	R11=97	R12=80	R13=96	R14=98	R15=95	

Color Quality Scale: $Q_a=92.7$, $Q_f=93.5$, $Q_p=95.4$, $Q_g=97.5$

Q1 =86	Q2 =93	Q3 =96	Q4 =93	Q5 =91	Q6 =90	Q7 =95	Q8 =96
Q9 =94	Q10=93	Q11=96	Q12=95	Q13=96	Q14=96	Q15=91	



Photometric Parameters

Luminous Flux: 1696.6 lm Efficiency: 88.46 lm/W Radiant Power: 6.690 W
 Total mains efficacy: 104.03 lm/W Energy Efficiency Class: F (EU 2019/2015)
 Pupil Flux: 2375.53 Plm Pupil Lumens Per Watt: 123.85 Plm/W Pupil Factor (Kp): 1.400
 Circopic Flux: 4674.16 lm

Electric Parameters

Voltage: 230.60V Current: 0.0860A Power: 19.18W
 Power Factor: 0.9560 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: 47126 (2205) CCD Integration Time: 323.49 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0008	0.0307	525	0.5022	18.8105	670	0.8480	31.7642
385	0.0010	0.0385	530	0.5271	19.7425	675	0.7922	29.6745
390	0.0007	0.0273	535	0.5452	20.4229	680	0.7321	27.4249
395	0.0004	0.0162	540	0.5628	21.0801	685	0.6694	25.0753
400	0.0003	0.0103	545	0.5799	21.7226	690	0.6081	22.7790
405	0.0001	0.0048	550	0.5938	22.2412	695	0.5475	20.5085
410	0.0002	0.0076	555	0.6079	22.7710	700	0.4901	18.3588
415	0.0004	0.0143	560	0.6197	23.2146	705	0.4347	16.2820
420	0.0013	0.0478	565	0.6282	23.5305	710	0.3815	14.2921
425	0.0053	0.1971	570	0.6373	23.8719	715	0.3347	12.5366
430	0.0161	0.6035	575	0.6460	24.1964	720	0.2935	10.9945
435	0.0345	1.2929	580	0.6576	24.6309	725	0.2565	9.6077
440	0.0665	2.4916	585	0.6692	25.0664	730	0.2220	8.3170
445	0.1261	4.7230	590	0.6888	25.8009	735	0.1919	7.1868
450	0.2414	9.0431	595	0.7138	26.7383	740	0.1640	6.1430
455	0.4263	15.9676	600	0.7449	27.9041	745	0.1404	5.2584
460	0.5503	20.6138	605	0.7805	29.2376	750	0.1238	4.6372
465	0.4979	18.6495	610	0.8210	30.7546	755	0.0994	3.7227
470	0.4229	15.8419	615	0.8644	32.3794	760	0.0797	2.9861
475	0.3916	14.6671	620	0.9038	33.8567	765	0.0626	2.3448
480	0.3450	12.9232	625	0.9371	35.1039	770	0.0477	1.7855
485	0.3103	11.6218	630	0.9655	36.1674	775	0.0345	1.2913
490	0.3122	11.6940	635	0.9842	36.8669	780	0.0243	0.9105
495	0.3311	12.4008	640	0.9958	37.3009	785	0.0139	0.5199
500	0.3574	13.3867	645	0.9972	37.3546	790	0.0077	0.2881
505	0.3888	14.5648	650	0.9882	37.0159	795	0.0053	0.1989
510	0.4244	15.8989	655	0.9685	36.2801	800	0.0071	0.2641
515	0.4542	17.0143	660	0.9366	35.0849			
520	0.4828	18.0834	665	0.8965	33.5830			

Condition: Tx:16.3'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

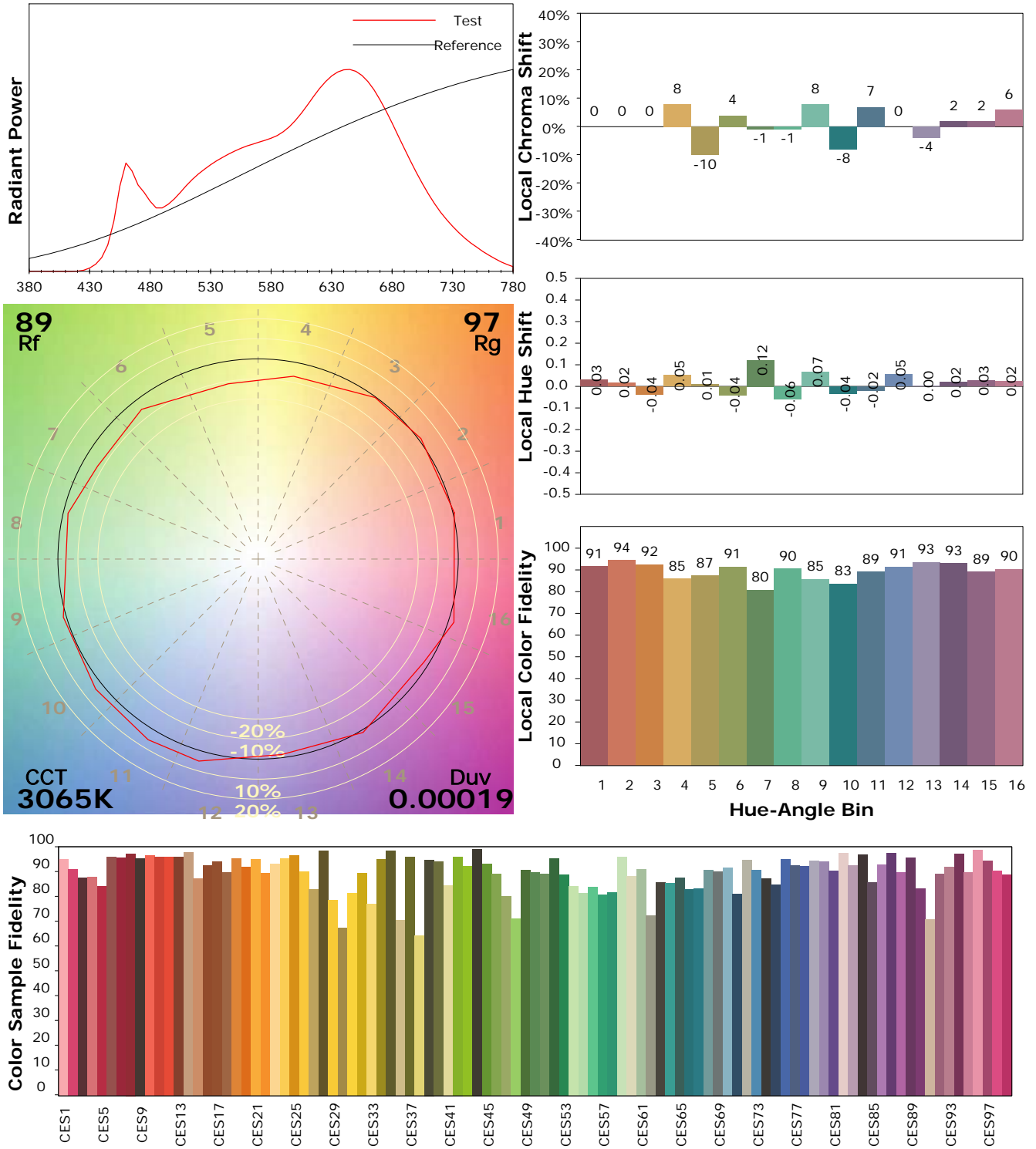
Test Device: Lisun LMS-9000B
 Test Time: 2021-01-18 14:08:56
 Inspector:

IES TM-30-18 Color Rendition Report

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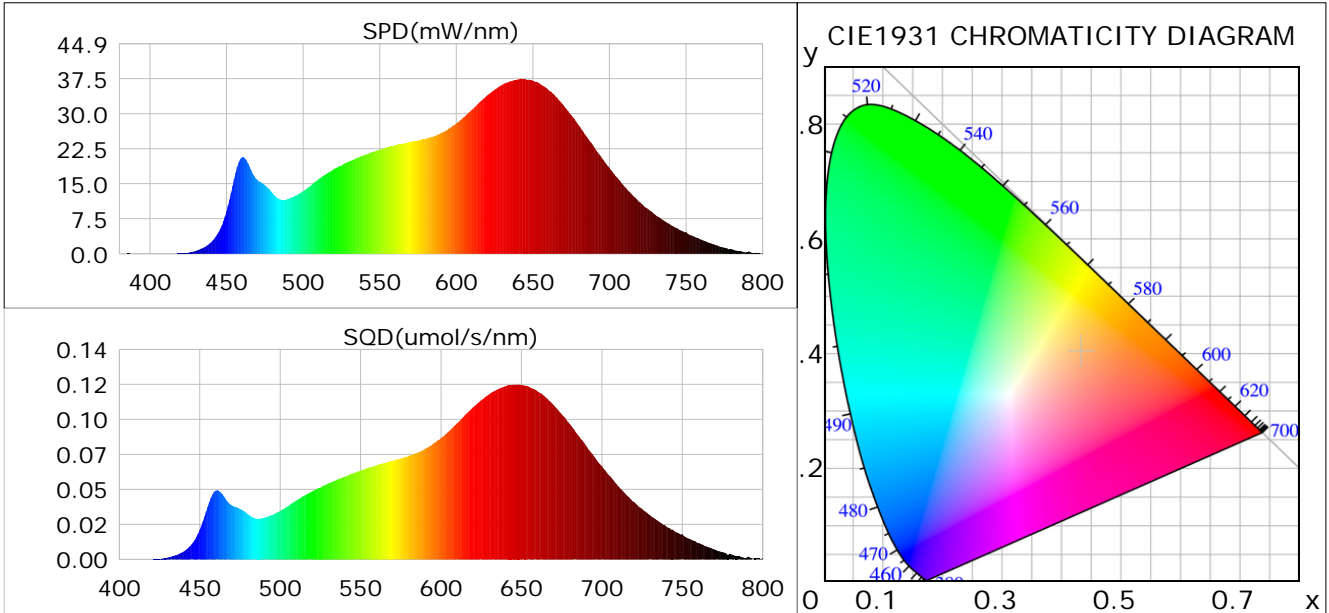
Condition: Tx: 16.3°C, Ti: 0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-18 14:08:56
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.4327$ $y=0.4030$ $u(u')=0.2483$ $v=0.3469$ $v'=0.5203$
 CCT: $T_c=3065K$ ($duv=0.00019$) Color Ratio: $R=0.249$ $G=0.715$ $B=0.036$
 Peak Wavelength: 642.2nm Half Bandwidth: 175.3nm
 Dominant Wavelength: 582.5nm Color Purity: 0.508
 CRI: $R_a=95.9$



Plant Optical Param

$ \mu_v(lm): 1696.60$	$Q_v(lm.s): 1696.60$
$ \mu_e, \dot{E}(W/nm): 6.69$	$Q_e(J): 6.69$
$ \mu_e(W): 6.12$	$ \mu_{fr}(W): 0.60$
$ \zeta_e: 0.32$	$ \zeta_{fr}: 0.03$
$PPE(umol/s/w): 1.58$	$K_{fr}: 0.18$
$Erb_Ratio: 3.92$	$PPF(umol/s): 30.25$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 3.17$
$PPF(500-600)(umol/s): 10.02$	$PPF(600-700)(umol/s): 17.07$
$PPF_{fr}(700-800)(umol/s): 3.53$	$PPF.t(umol): 30.25$
$ \mu_{ch-A.t}(J): 0.54$	$ \mu_{ch-A}(W): 0.54$
$ \mu_{ch-B.t}(J): 0.25$	$ \mu_{ch-B}(W): 0.25$
$ \mu_b.t(J): 0.80$	$ \mu_b(W): 0.80$
$ \mu_y.t(J): 2.17$	$ \mu_y(W): 2.17$
$ \mu_r.t(J): 3.18$	$ \mu_r(W): 3.18$

Electric Parameters

Voltage: 230.60V	Current: 0.0860A	Power: 19.18W
Power Factor: 0.9560	Frequency: 49.99Hz	

Condition: $T_x: 16.3^\circ C$, $T_i: 0.0^\circ C$, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-18 14:08:56
 Inspector: