

Lightsource Test Report

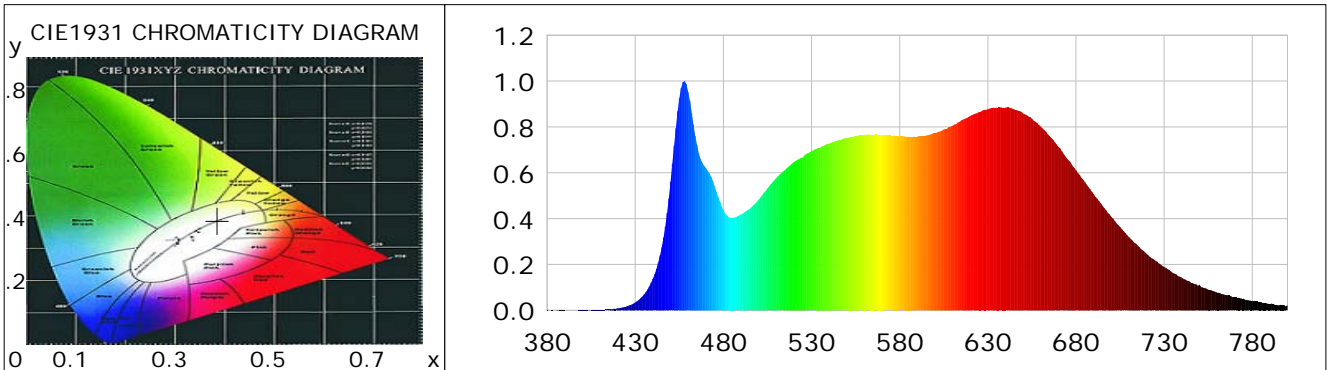
Product Information

Product Category: Ledtube
 Product Spec: LEDtube-150-8NWM-25W-CRI95
 Manufacturer: METOLIGHT
 Buyer: 4624-20630

Product Type: SCE-CRI95
 Product Number: 1
 Submitted Unit: 101104

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3854$ $y=0.3865$ $u(u')=0.2244$ $v=0.3377$ $v'=0.5065$
 CCT: $T_c=3942K$ ($duv=0.00311$) Color Ratio: $R=0.201$ $G=0.754$ $B=0.045$
 Peak Wavelength: 457.7nm Half Bandwidth: 27.7nm
 Dominant Wavelength: 577.8nm Color Purity: 0.317
 CRI: $R_a=95.5$, $avgR(1\sim14)=93.6$, $avgR(1\sim15)=93.7$ TM30: $R_f=89$, $R_g=96$
 GAI: $GAI_BB_8=92.7$, $GAI_BB_15=100.1$, $GAI_EES=72.3$
 R1 =97 R2 =99 R3 =98 R4 =92 R5 =94 R6 =96 R7 =94 R8 =94
 R9 =95 R10=95 R11=93 R12=68 R13=98 R14=98 R15=95
 Color Quality Scale: $Q_a=92.6$, $Q_f=92.4$, $Q_p=92.3$, $Q_g=96.8$
 Q1 =88 Q2 =95 Q3 =92 Q4 =87 Q5 =88 Q6 =89 Q7 =95 Q8 =97
 Q9 =96 Q10=95 Q11=98 Q12=98 Q13=99 Q14=98 Q15=94



Photometric Parameters

Luminous Flux: 2712.7 lm Efficiency: 107.73 lm/W Radiant Power: 9.935 W
 Total mains efficacy: 126.69 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 4318.71 Plm Pupil Lumens Per Watt: 171.51 Plm/W Pupil Factor (Kp): 1.592
 Circopic Flux: 9093.02 lm

Electric Parameters

Voltage: 230.90V Current: 0.1140A Power: 25.18W
 Power Factor: 0.9530 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: 47550 (2456) CCD Integration Time: 140.04 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0017	0.0865	525	0.6669	34.2248	670	0.7135	36.6155
385	0.0008	0.0418	530	0.6936	35.5952	675	0.6616	33.9542
390	0.0009	0.0447	535	0.7106	36.4692	680	0.6110	31.3535
395	0.0004	0.0218	540	0.7269	37.3029	685	0.5598	28.7260
400	0.0011	0.0590	545	0.7418	38.0685	690	0.5073	26.0318
405	0.0011	0.0572	550	0.7509	38.5362	695	0.4564	23.4221
410	0.0024	0.1243	555	0.7605	39.0294	700	0.4083	20.9514
415	0.0047	0.2394	560	0.7657	39.2956	705	0.3632	18.6366
420	0.0086	0.4413	565	0.7664	39.3294	710	0.3204	16.4416
425	0.0169	0.8653	570	0.7656	39.2909	715	0.2828	14.5125
430	0.0343	1.7593	575	0.7625	39.1313	720	0.2467	12.6593
435	0.0692	3.5538	580	0.7587	38.9347	725	0.2177	11.1713
440	0.1382	7.0922	585	0.7568	38.8392	730	0.1897	9.7326
445	0.2756	14.1434	590	0.7575	38.8715	735	0.1632	8.3764
450	0.5608	28.7791	595	0.7626	39.1335	740	0.1424	7.3086
455	0.9259	47.5149	600	0.7723	39.6335	745	0.1222	6.2687
460	0.9520	48.8552	605	0.7895	40.5162	750	0.1112	5.7060
465	0.7204	36.9724	610	0.8049	41.3081	755	0.0907	4.6528
470	0.6214	31.8918	615	0.8292	42.5515	760	0.0779	4.0001
475	0.5422	27.8251	620	0.8478	43.5057	765	0.0674	3.4608
480	0.4376	22.4572	625	0.8662	44.4522	770	0.0570	2.9228
485	0.4028	20.6719	630	0.8773	45.0221	775	0.0504	2.5873
490	0.4184	21.4731	635	0.8842	45.3736	780	0.0418	2.1426
495	0.4428	22.7221	640	0.8841	45.3701	785	0.0361	1.8534
500	0.4829	24.7823	645	0.8766	44.9853	790	0.0279	1.4327
505	0.5324	27.3199	650	0.8592	44.0941	795	0.0222	1.1383
510	0.5779	29.6546	655	0.8362	42.9124	800	0.0226	1.1599
515	0.6125	31.4347	660	0.8015	41.1318			
520	0.6465	33.1771	665	0.7602	39.0139			

Condition: Tx:20.8'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

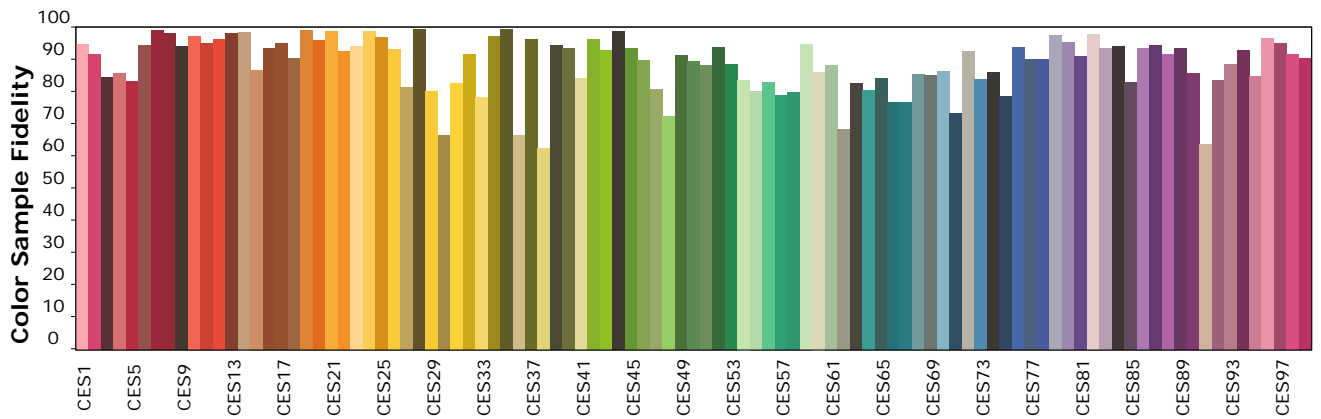
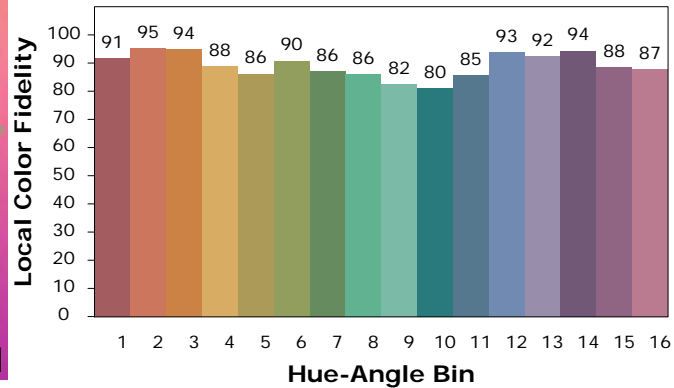
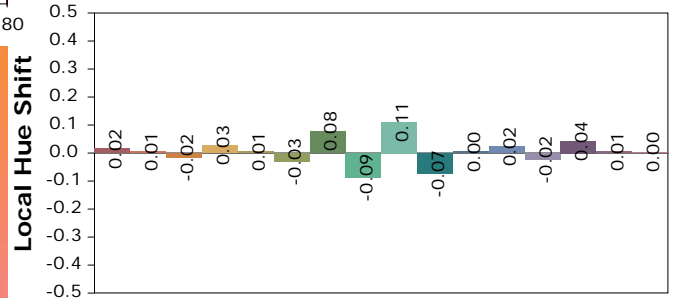
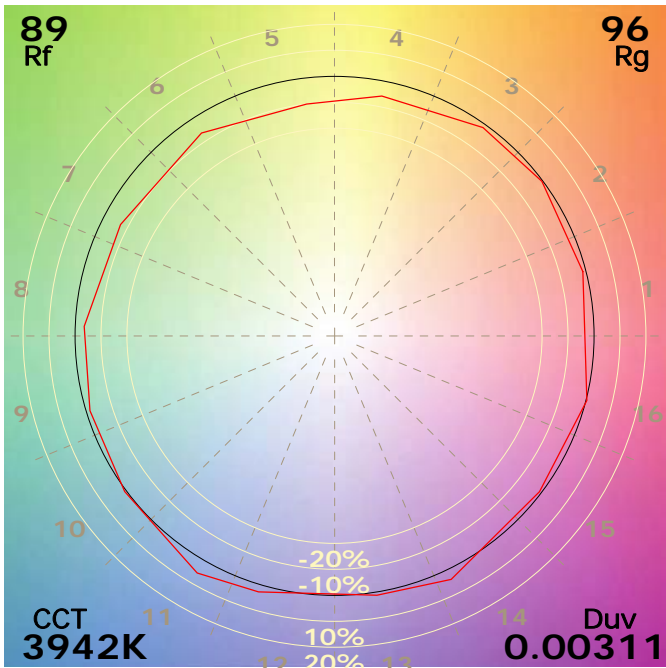
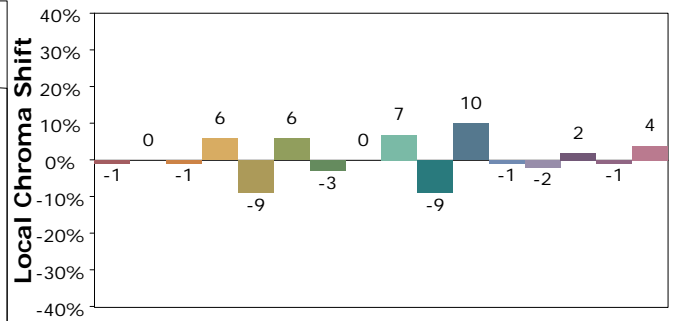
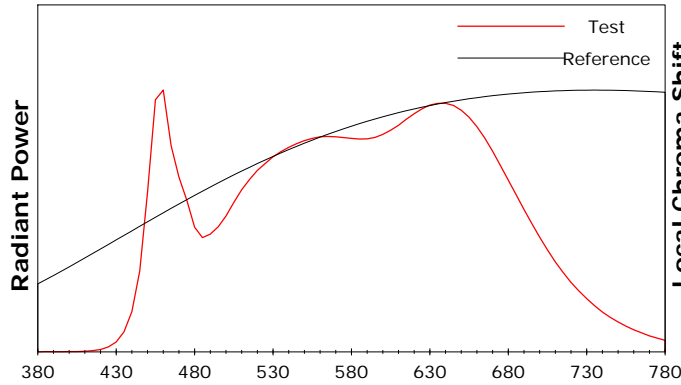
Test Device: Lisun LMS-9000B
 Test Time: 2020-11-30 10:53:54
 Inspector:

IES TM-30-18 Color Rendition Report

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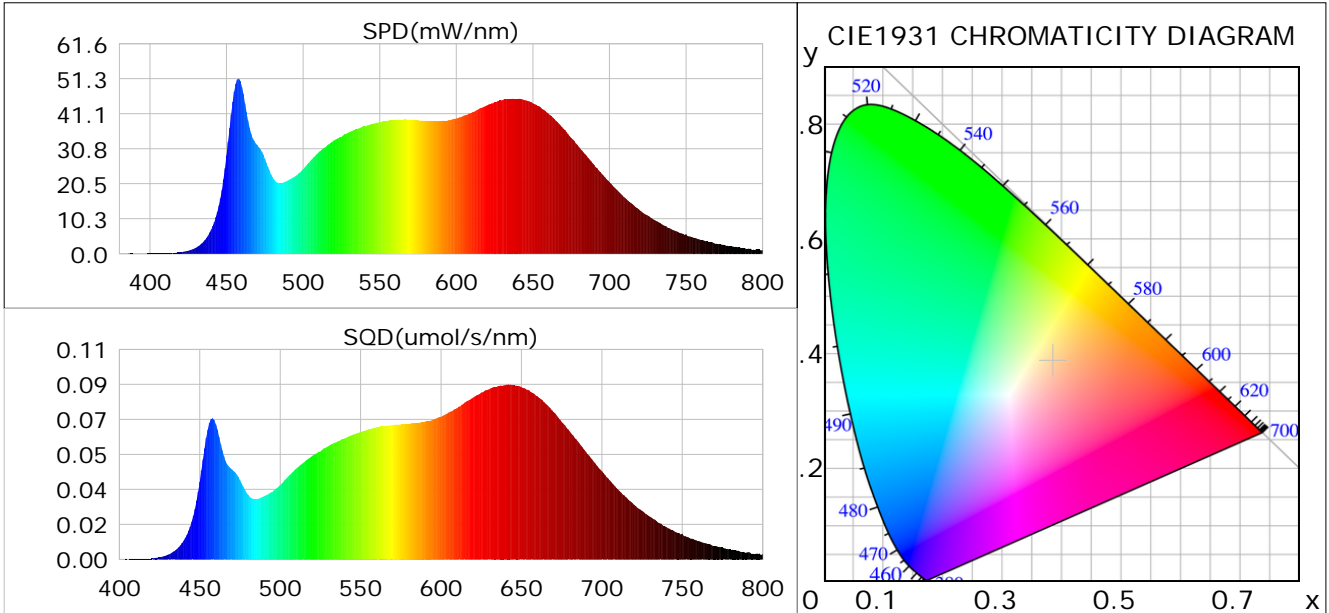
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 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2020-11-30 10:53:54
 Inspector:

Plant optical param data

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 Dominant Wavelength: 577.8nm Color Purity: 0.317
 CRI: $R_a=95.5$



Plant Optical Param

$ \mu_v(lm): 2712.65$	$Q_v(lm.s): 2712.65$
$ \mu_e, \dot{E}(W/nm): 9.94$	$Q_e(J): 9.94$
$ \mu_e(W): 9.25$	$ \mu_{fr}(W): 0.74$
$ \dot{C}_e: 0.37$	$ \dot{C}_{fr}: 0.03$
$PPE(umol/s/w): 1.77$	$K_{fr}: 0.17$
$Erb_Ratio: 2.18$	$PPF(umol/s): 44.49$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 6.89$
$PPF(500-600)(umol/s): 16.83$	$PPF(600-700)(umol/s): 20.77$
$PPF_{fr}(700-800)(umol/s): 4.38$	$PPF.t(umol): 44.49$
$ \mu_{ch-A.t}(J): 0.77$	$ \mu_{ch-A}(W): 0.77$
$ \mu_{ch-B.t}(J): 0.43$	$ \mu_{ch-B}(W): 0.43$
$ \mu_b.t(J): 1.76$	$ \mu_b(W): 1.76$
$ \mu_y.t(J): 3.66$	$ \mu_y(W): 3.66$
$ \mu_r.t(J): 3.89$	$ \mu_r(W): 3.89$

Electric Parameters

Voltage: 230.90V	Current: 0.1140A	Power: 25.18W
Power Factor: 0.9530	Frequency: 49.99Hz	

Condition: $T_x=20.8^\circ C$, $T_i=0.0^\circ C$, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2020-11-30 10:53:54
 Inspector: