

## Lightsource Test Report

### Product Information

Product Category: LED-Röhre	Product Type: LED-Röhre-Spezial
Product Spec: LEDtube-150-8Meat-RBW-25WM	Product Number: 1
Manufacturer: METOLIGHT	Submitted Unit: 104305
Buyer: 7116	

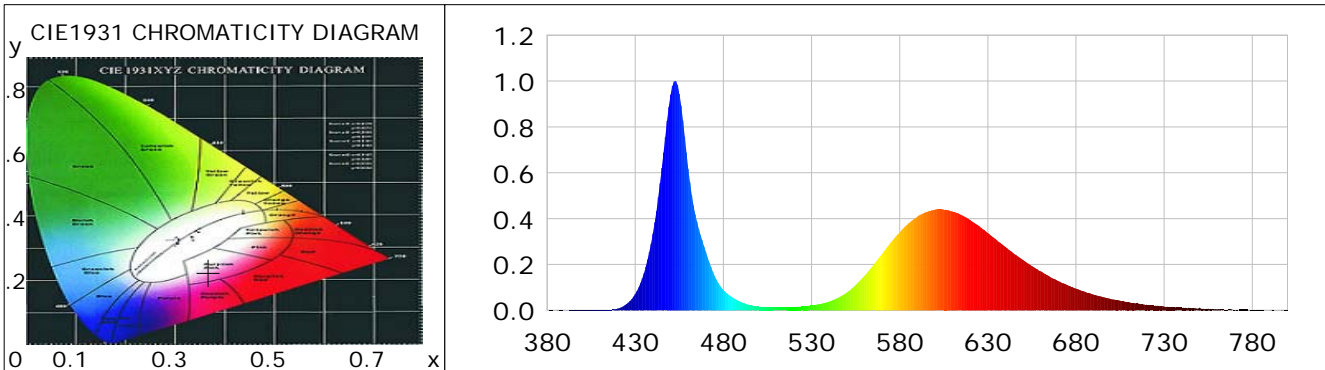
### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.3672$   $y=0.2235$   $u(u')=0.2969$   $v=0.2710$   $v'=0.4066$   
 CCT:  $T_c=2334K$  ( $duv=-0.08630$ ) Color Ratio:  $R=0.331$   $G=0.608$   $B=0.061$   
 Peak Wavelength: 452.6nm Half Bandwidth: 18.9nm  
 Dominant Wavelength: 0.0nm Color Purity: 0.000  
 CRI:  $R_a=38.2$ ,  $avgR(1\sim14)=34.5$ ,  $avgR(1\sim15)=38.1$  TM30:  $R_f=43$ ,  $R_g=97$   
 GAI:  $GAI\_BB\_8=275.1$ ,  $GAI\_BB\_15=222.4$ ,  $GAI\_EES=100.2$   

R1 =75	R2 =69	R3 =14	R4 =10	R5 =82	R6 =39	R7 =10	R8 =7
R9 =0	R10=33	R11=0	R12=0	R13=89	R14=55	R15=88	

 Color Quality Scale:  $Q_a=34.1$ ,  $Q_f=9.7$ ,  $Q_p=84.4$ ,  $Q_g=103.1$   

Q1 =64	Q2 =81	Q3 =21	Q4 =5	Q5 =23	Q6 =37	Q7 =47	Q8 =55
Q9 =92	Q10=52	Q11=24	Q12=10	Q13=9	Q14=47	Q15=59	



### Photometric Parameters

Luminous Flux: 2093.0 lm	Efficiency: 82.27 lm/W	Radiant Power: 9.381 W
Total mains efficacy: 96.75 lm/W	Energy Efficiency Class: F (EU 2019/2015)	
Pupil Flux: 3290.65 Plm	Pupil Lumens Per Watt: 129.35 Plm/W	Pupil Factor (Kp): 1.572
Cirtopic Flux: 8331.06 lm		

### Electric Parameters

Voltage: 230.80V	Current: 0.1170A	Power: 25.44W
Power Factor: 0.9410	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: 47214 (2599)	CCD Integration Time: 58.94 ms

Condition: Tx:23.3'C, Ti:0.0'C, R.H.:60%  
 Test Lab:  
 Operator: CRE

Test Device: Lisun LMS-9000B  
 Test Time: 2021-02-17 11:11:24  
 Inspector:

## Lightsource Test Report

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0006	0.0818	525	0.0180	2.6407	670	0.1282	18.7689
385	0.0004	0.0610	530	0.0218	3.1887	675	0.1104	16.1619
390	0.0007	0.1018	535	0.0285	4.1750	680	0.0951	13.9238
395	0.0010	0.1511	540	0.0384	5.6262	685	0.0811	11.8638
400	0.0013	0.1881	545	0.0546	7.9913	690	0.0686	10.0342
405	0.0014	0.2041	550	0.0778	11.3916	695	0.0583	8.5371
410	0.0017	0.2528	555	0.1100	16.0930	700	0.0492	7.1970
415	0.0027	0.3887	560	0.1505	22.0213	705	0.0425	6.2180
420	0.0078	1.1423	565	0.1969	28.8143	710	0.0358	5.2452
425	0.0274	4.0063	570	0.2466	36.0879	715	0.0304	4.4493
430	0.0714	10.4573	575	0.2970	43.4744	720	0.0249	3.6504
435	0.1624	23.7683	580	0.3402	49.7951	725	0.0206	3.0161
440	0.3350	49.0279	585	0.3791	55.4853	730	0.0174	2.5500
445	0.6208	90.8555	590	0.4086	59.8075	735	0.0135	1.9800
450	0.9399	137.5641	595	0.4285	62.7135	740	0.0120	1.7590
455	0.9450	138.3100	600	0.4392	64.2869	745	0.0106	1.5465
460	0.6182	90.4801	605	0.4394	64.3094	750	0.0118	1.7234
465	0.3865	56.5726	610	0.4308	63.0568	755	0.0073	1.0695
470	0.2565	37.5354	615	0.4164	60.9396	760	0.0047	0.6887
475	0.1501	21.9738	620	0.3939	57.6544	765	0.0034	0.4960
480	0.0888	13.0032	625	0.3673	53.7572	770	0.0018	0.2572
485	0.0572	8.3686	630	0.3367	49.2809	775	0.0023	0.3407
490	0.0366	5.3585	635	0.3066	44.8758	780	0.0014	0.2070
495	0.0237	3.4741	640	0.2764	40.4571	785	0.0023	0.3344
500	0.0172	2.5159	645	0.2460	36.0102	790	0.0004	0.0564
505	0.0142	2.0798	650	0.2196	32.1400	795	0.0006	0.0813
510	0.0130	1.9006	655	0.1933	28.2991	800	0.0016	0.2325
515	0.0132	1.9313	660	0.1704	24.9401			
520	0.0147	2.1528	665	0.1478	21.6396			

Condition: Tx:23.3'C, Ti:0.0'C, R.H.:60%  
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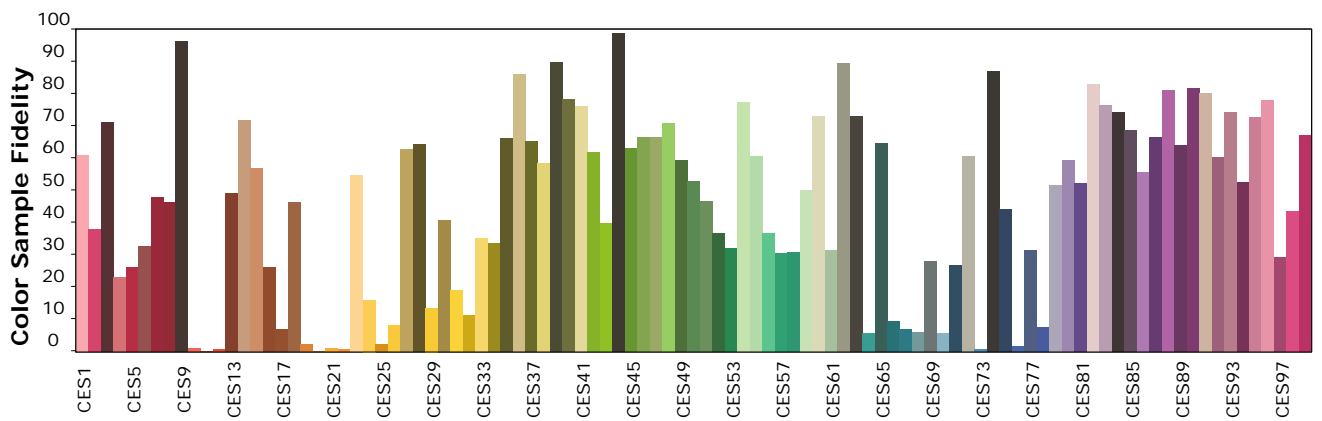
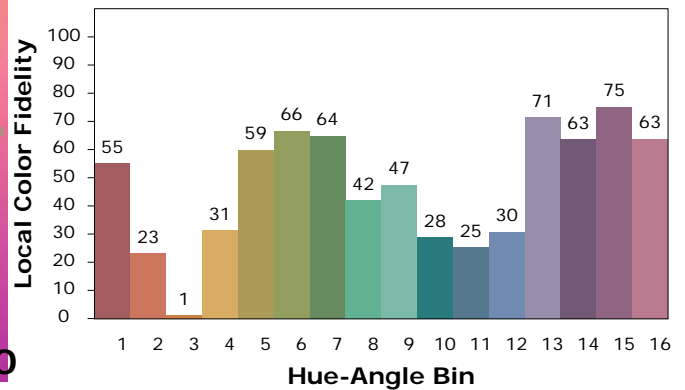
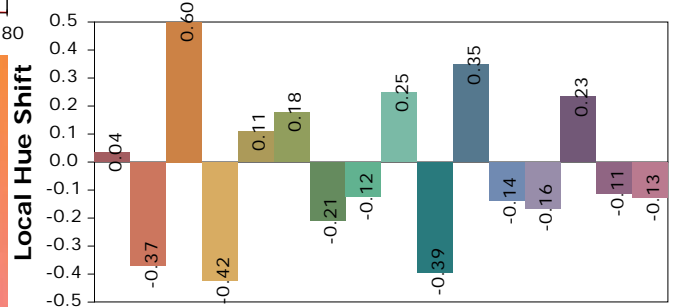
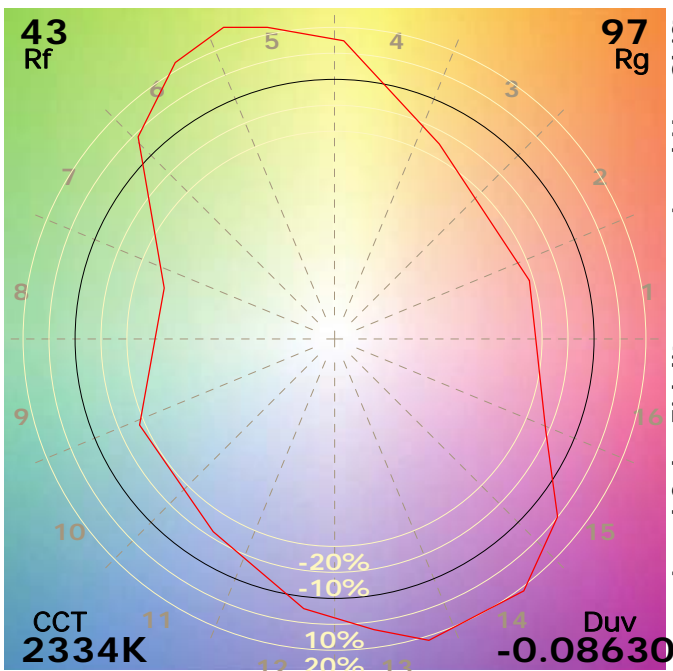
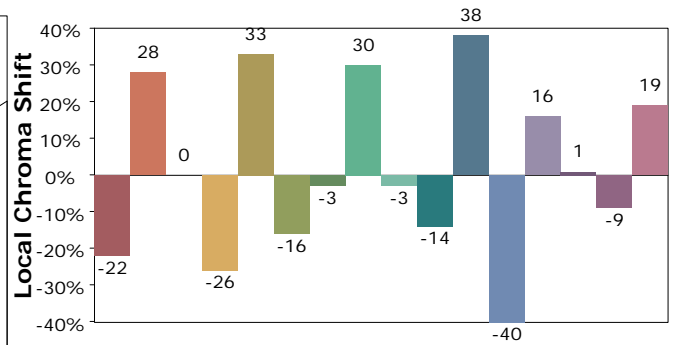
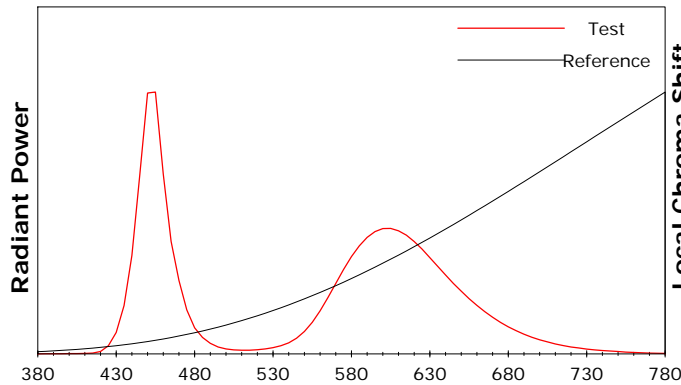
Test Device: Lisun LMS-9000B  
 Test Time: 2021-02-17 11:11:24  
 Inspector:

## IES TM-30-18 Color Rendition Report

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 Manufacturer: METOLIGHT  
 Buyer: 7116

Product Type: LED-Röhre-Spezial  
 Product Number: 1  
 Submitted Unit: 104305



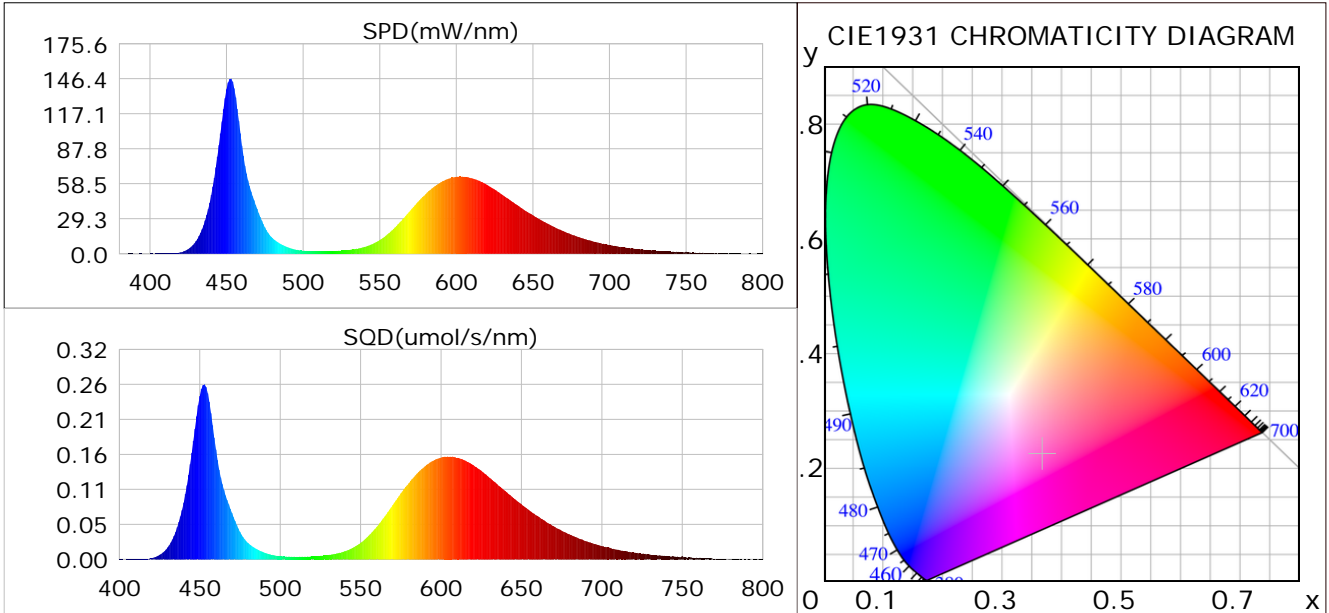
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 Test Lab:  
 Operator: CRE

Test Device: Lisun LMS-9000B  
 Test Time: 2021-02-17 11:11:24  
 Inspector:

## Plant optical param data

### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.3672$   $y=0.2235$   $u(u')=0.2969$   $v=0.2710$   $v'=0.4066$   
 CCT:  $T_c=2334K$  ( $duv=-0.08630$ ) Color Ratio:  $R=0.331$   $G=0.608$   $B=0.061$   
 Peak Wavelength: 452.6nm Half Bandwidth: 18.9nm  
 Dominant Wavelength: 0.0nm Color Purity: 0.000  
 CRI:  $R_a=38.2$



### Plant Optical Param

$ \mu_v(lm): 2093.00$	$Q_v(lm.s): 2093.00$
$ \mu_e, \dot{E}(W/nm): 9.38$	$Q_e(J): 9.38$
$ \mu_e(W): 9.19$	$ \mu_{fr}(W): 0.20$
$ \zeta_e: 0.36$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.67$	$K_{fr}: 0.05$
$Erb\_Ratio: 0.99$	$PPF(umol/s): 42.43$
$PF_{uv}(360-400)(umol/s): 0.01$	$PPF(400-500)(umol/s): 13.19$
$PPF(500-600)(umol/s): 11.02$	$PPF(600-700)(umol/s): 18.21$
$PPF_r(700-800)(umol/s): 1.15$	$PPF.t(umol): 42.43$
$ \mu_{ch-A.t}(J): 1.00$	$ \mu_{ch-A}(W): 1.00$
$ \mu_{ch-B.t}(J): 0.67$	$ \mu_{ch-B}(W): 0.67$
$ \mu_b.t(J): 3.47$	$ \mu_b(W): 3.47$
$ \mu_y.t(J): 2.29$	$ \mu_y(W): 2.29$
$ \mu_r.t(J): 3.50$	$ \mu_r(W): 3.50$

### Electric Parameters

Voltage: 230.80V	Current: 0.1170A	Power: 25.44W
Power Factor: 0.9410	Frequency: 49.99Hz	

Condition:  $T_x: 23.3^\circ C$ ,  $T_i: 0.0^\circ C$ , R.H.: 60%  
 Test Lab:  
 Operator: CRE

Test Device: Lisun LMS-9000B  
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