

## Lightsource Test Report

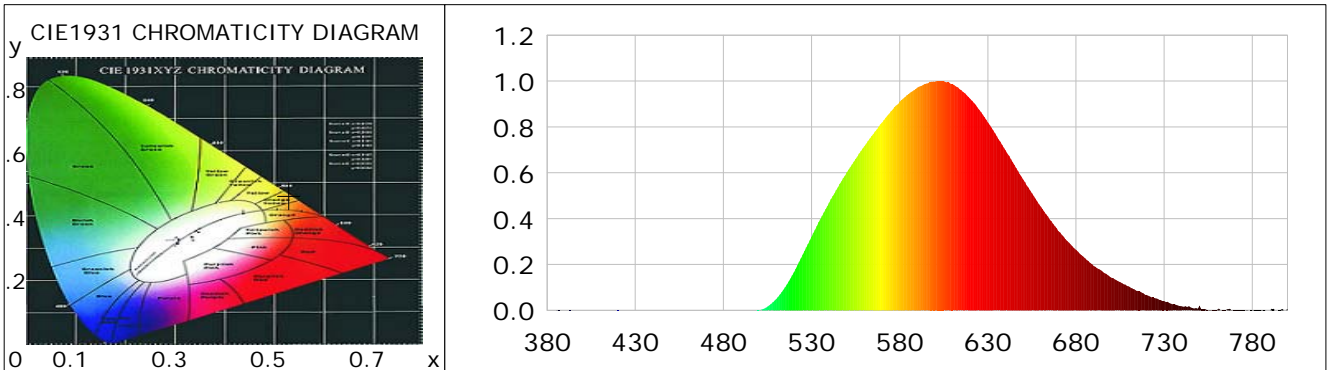
### Product Information

Product Category: Ledtube  
 Product Spec: Ledtube-UVL-470-060-T8-10W  
 Manufacturer: METOLIGHT

Product Type: Ledtube-UVL  
 Product Number: 1  
 Submitted Unit: 101240

### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.5302$   $y=0.4653$   $u(u')=0.2819$   $v=0.3711$   $v'=0.5566$   
 CCT:  $T_c=2288K$  ( $duv=0.01482$ ) Color Ratio:  $R=0.254$   $G=0.746$   $B=0.000$   
 Peak Wavelength: 602.6nm Half Bandwidth: 113.7nm  
 Dominant Wavelength: 583.1nm Color Purity: 0.989  
 CRI:  $R_a=52.9$ ,  $avgR(1\sim14)=42.8$ ,  $avgR(1\sim15)=43.1$  TM30:  $R_f=19$ ,  $R_g=11$   
 GAI:  $GAI\_BB\_8=1.1$ ,  $GAI\_BB\_15=1.2$ ,  $GAI\_EES=0.4$   
 R1 =54 R2 =65 R3 =65 R4 =42 R5 =47 R6 =49 R7 =67 R8 =34  
 R9 =0 R10=21 R11=20 R12=0 R13=54 R14=80 R15=47  
 Color Quality Scale:  $Q_a=0.4$ ,  $Q_f=0.9$ ,  $Q_p=0.0$ ,  $Q_g=6.0$   
 Q1 =46 Q2 =7 Q3 =0 Q4 =3 Q5 =23 Q6 =50 Q7 =35 Q8 =2  
 Q9 =0 Q10=0 Q11=0 Q12=0 Q13=0 Q14=2 Q15=50



### Photometric Parameters

Luminous Flux: 1039.0 lm Efficiency: 102.77 lm/W Radiant Power: 2.771 W  
 Total mains efficacy: 111.92 lm/W Energy Efficiency Class: E (EU 2019/2015)  
 Pupil Flux: 752.71 Plm Pupil Lumens Per Watt: 74.45 Plm/W Pupil Factor (Kp): 0.724  
 Circopic Flux: 790.82 lm

### Electric Parameters

Voltage: 230.70V Current: 0.0520A Power: 10.11W  
 Power Factor: 0.8370 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: 47021 (2199) CCD Integration Time: 489.73 ms

## Lightsource Test Report

### Product Information

Product Category: Ledtube  
 Product Spec: Ledtube-UVL-470-060-T8-10W  
 Manufacturer: METOLIGHT

Product Type: Ledtube-UVL  
 Product Number: 1  
 Submitted Unit: 101240

WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0002	0.0036	525	0.2433	5.7743	670	0.3459	8.2092
385	0.0007	0.0166	530	0.3210	7.6163	675	0.3027	7.1838
390	0.0006	0.0151	535	0.3979	9.4409	680	0.2644	6.2733
395	0.0000	0.0003	540	0.4697	11.1463	685	0.2281	5.4139
400	0.0004	0.0089	545	0.5366	12.7340	690	0.1939	4.6012
405	0.0000	0.0012	550	0.6020	14.2841	695	0.1695	4.0222
410	0.0002	0.0058	555	0.6602	15.6664	700	0.1425	3.3807
415	0.0004	0.0092	560	0.7160	16.9904	705	0.1232	2.9238
420	0.0010	0.0226	565	0.7690	18.2472	710	0.1043	2.4753
425	0.0002	0.0048	570	0.8195	19.4465	715	0.0849	2.0143
430	0.0003	0.0063	575	0.8678	20.5935	720	0.0676	1.6035
435	0.0004	0.0091	580	0.9107	21.6112	725	0.0525	1.2449
440	0.0002	0.0050	585	0.9433	22.3845	730	0.0399	0.9468
445	0.0003	0.0063	590	0.9712	23.0464	735	0.0259	0.6145
450	0.0004	0.0084	595	0.9891	23.4717	740	0.0181	0.4289
455	0.0003	0.0078	600	0.9977	23.6751	745	0.0130	0.3087
460	0.0002	0.0054	605	0.9991	23.7087	750	0.0202	0.4793
465	0.0000	0.0001	610	0.9864	23.4078	755	0.0035	0.0822
470	0.0002	0.0046	615	0.9604	22.7893	760	0.0033	0.0791
475	0.0006	0.0131	620	0.9227	21.8953	765	0.0022	0.0533
480	0.0003	0.0066	625	0.8751	20.7653	770	0.0019	0.0454
485	0.0001	0.0034	630	0.8193	19.4412	775	0.0012	0.0277
490	0.0002	0.0043	635	0.7598	18.0291	780	0.0016	0.0384
495	0.0003	0.0069	640	0.6980	16.5621	785	0.0031	0.0730
500	0.0011	0.0251	645	0.6349	15.0663	790	0.0002	0.0038
505	0.0167	0.3961	650	0.5706	13.5407	795	0.0016	0.0386
510	0.0500	1.1876	655	0.5105	12.1128	800	0.0075	0.1787
515	0.1010	2.3972	660	0.4527	10.7415			
520	0.1660	3.9399	665	0.3972	9.4255			

Condition: Tx: 15.5'C, Ti: 0.0'C, R.H.: 60%  
 Test Lab:  
 Operator: CRE

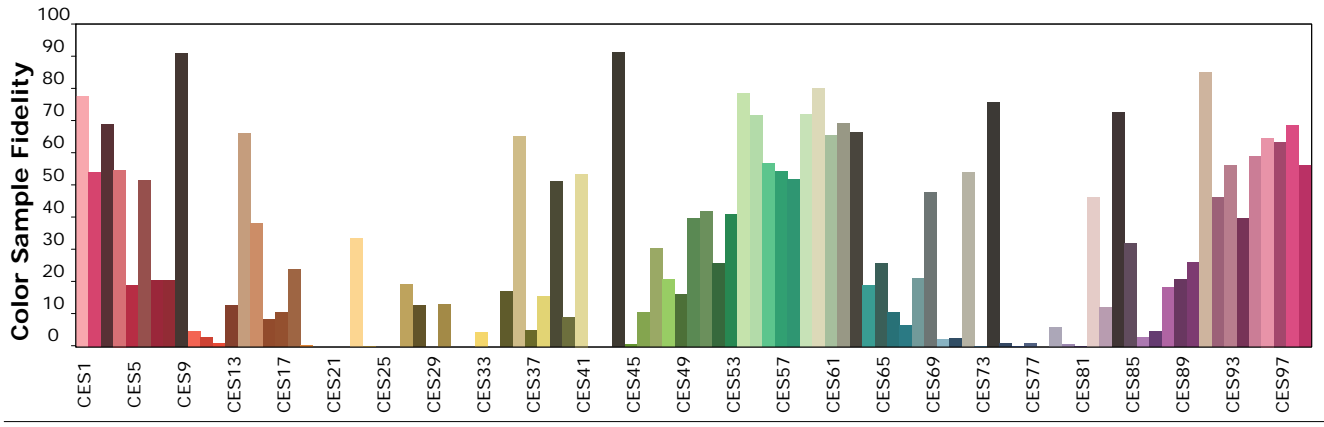
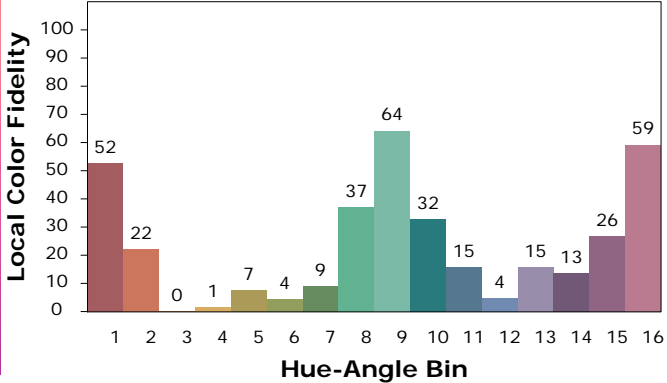
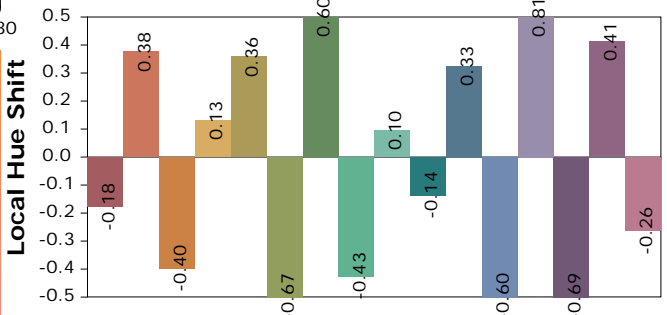
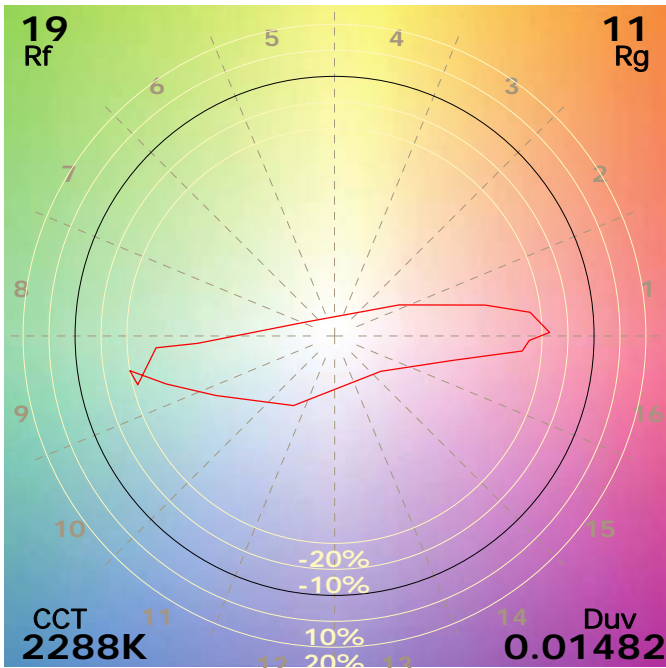
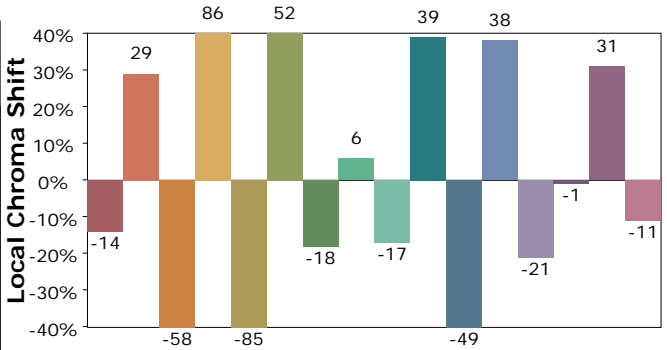
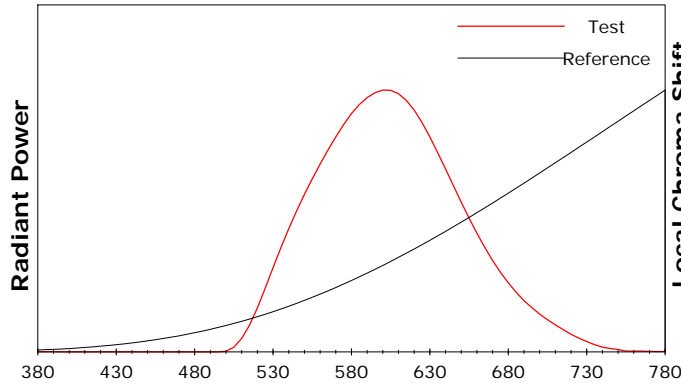
Test Device: Lisun LMS-9000B  
 Test Time: 2021-01-22 09:24:55  
 Inspector:

## IES TM-30-18 Color Rendition Report

### Product Information

Product Category: Ledtube  
 Product Spec: Ledtube-UVL-470-060-T8-10W  
 Manufacturer: METOLIGHT

Product Type: Ledtube-UVL  
 Product Number: 1  
 Submitted Unit: 101240



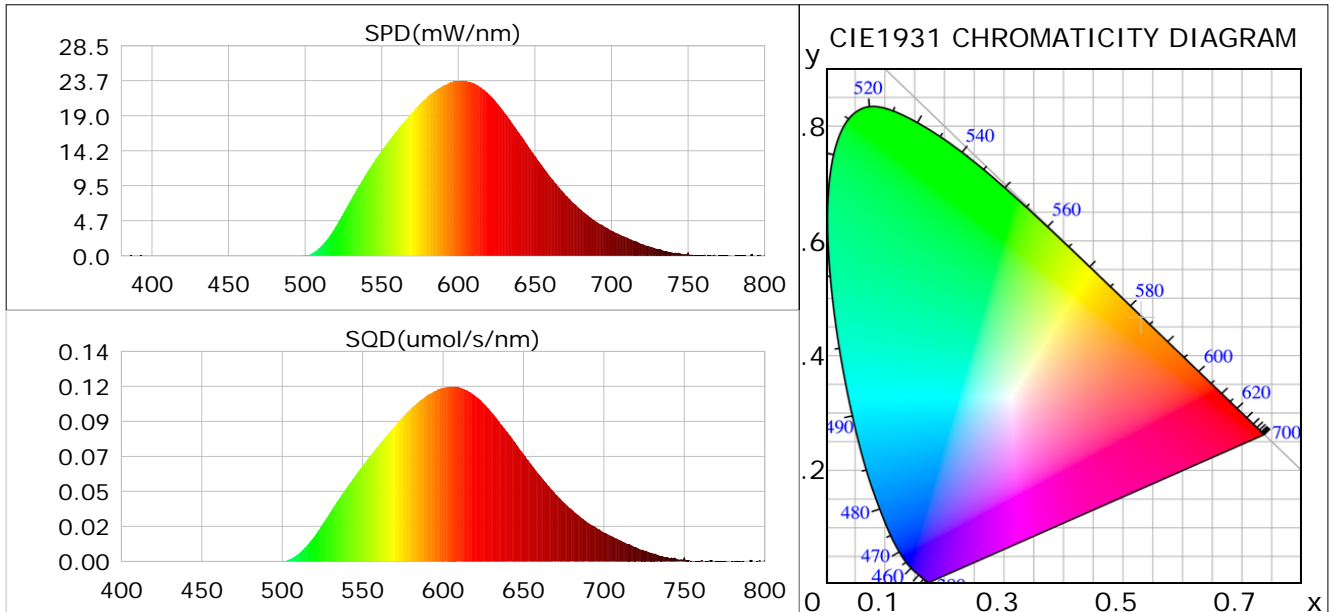
Condition: Tx: 15.5°C, Ti: 0.0°C, R.H.: 60%  
 Test Lab:  
 Operator: CRE

Test Device: Lisun LMS-9000B  
 Test Time: 2021-01-22 09:24:55  
 Inspector:

## Plant optical param data

### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.5302$   $y=0.4653$   $u(u')=0.2819$   $v=0.3711$   $v'=0.5566$   
 CCT:  $T_c=2288K$  ( $duv=0.01482$ ) Color Ratio:  $R=0.254$   $G=0.746$   $B=0.000$   
 Peak Wavelength: 602.6nm Half Bandwidth: 113.7nm  
 Dominant Wavelength: 583.1nm Color Purity: 0.989  
 CRI:  $R_a=52.9$



### Plant Optical Param

$ \mu_v(lm): 1039.00$	$Q_v(lm.s): 1039.00$
$ \mu_e, \dot{E}(W/nm): 2.77$	$Q_e(J): 2.77$
$ \mu_e(W): 2.70$	$ \mu_{fr}(W): 0.08$
$ \dot{C}_e: 0.27$	$ \dot{C}_{fr}: 0.01$
$PPE(umol/s/w): 1.34$	$K_{fr}: 0.04$
$Erb\_Ratio: 1476.22$	$PPF(umol/s): 13.59$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 0.00$
$PPF(500-600)(umol/s): 6.28$	$PPF(600-700)(umol/s): 7.31$
$PPF_{fr}(700-800)(umol/s): 0.44$	$PPF.t(umol): 13.59$
$ \mu_{ch-A.t}(J): 0.20$	$ \mu_{ch-A}(W): 0.20$
$ \mu_{ch-B.t}(J): 0.07$	$ \mu_{ch-B}(W): 0.07$
$ \mu_b.t(J): 0.00$	$ \mu_b(W): 0.00$
$ \mu_y.t(J): 1.32$	$ \mu_y(W): 1.32$
$ \mu_r.t(J): 1.40$	$ \mu_r(W): 1.40$

### Electric Parameters

Voltage: 230.70V	Current: 0.0520A	Power: 10.11W
Power Factor: 0.8370	Frequency: 49.99Hz	

Condition:  $T_x: 15.5^\circ C$ ,  $T_i: 0.0^\circ C$ , R.H.: 60%  
 Test Lab:  
 Operator: CRE

Test Device: Lisun LMS-9000B  
 Test Time: 2021-01-22 09:24:55  
 Inspector: