

## Lightsource Test Report

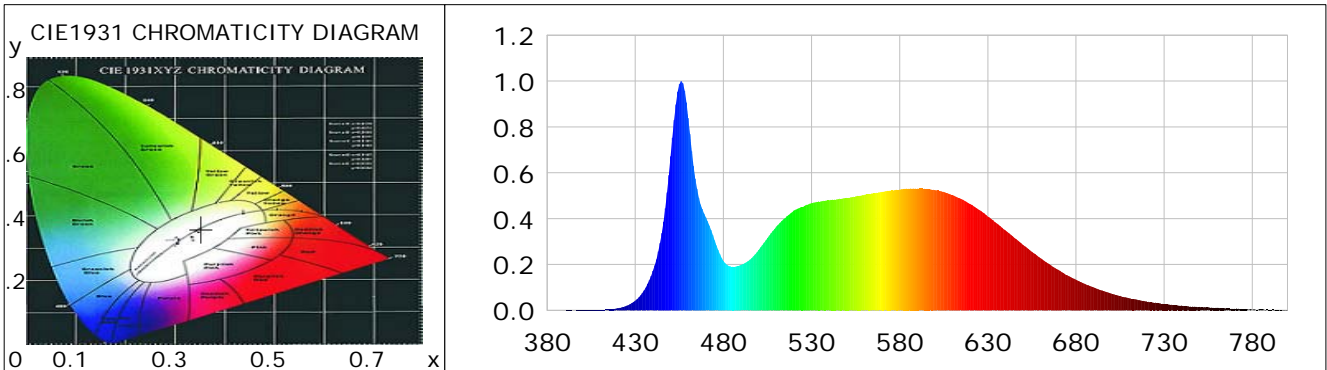
### Product Information

Product Category: LED-Lampen  
 Product Spec: LED-SLG28-Plus-E27-45-360-DWM  
 Manufacturer: METOLIGHT  
 Buyer: 3811

Product Type: LED-Strassenlampen  
 Product Number: 1  
 Submitted Unit: 102212

### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.3527$   $y=0.3596$   $u(u')=0.2134$   $v=0.3264$   $v'=0.4897$   
 CCT:  $T_c=4754K$  ( $duv=0.00102$ ) Color Ratio:  $R=0.167$   $G=0.788$   $B=0.045$   
 Peak Wavelength: 456.1nm Half Bandwidth: 18.0nm  
 Dominant Wavelength: 574.4nm Color Purity: 0.138  
 CRI:  $R_a=85.1$ ,  $avgR(1\sim14)=78.5$ ,  $avgR(1\sim15)=78.6$  TM30:  $R_f=82$ ,  $R_g=93$   
 GAI:  $GAI\_BB\_8=90.8$ ,  $GAI\_BB\_15=98.9$ ,  $GAI\_EES=80.6$   
 R1 =85 R2 =92 R3 =94 R4 =82 R5 =83 R6 =86 R7 =88 R8 =71  
 R9 =24 R10=77 R11=81 R12=52 R13=87 R14=97 R15=80  
 Color Quality Scale:  $Q_a=82.9$ ,  $Q_f=83.0$ ,  $Q_p=82.5$ ,  $Q_g=92.2$   
 Q1 =83 Q2 =97 Q3 =79 Q4 =72 Q5 =77 Q6 =80 Q7 =86 Q8 =90  
 Q9 =97 Q10=90 Q11=87 Q12=86 Q13=86 Q14=78 Q15=80



### Photometric Parameters

Luminous Flux: 4988.0 lm Efficiency: 110.62 lm/W Radiant Power: 15.576 W  
 Total mains efficacy: 110.62 lm/W Energy Efficiency Class: E (EU 2019/2015)  
 Pupil Flux: 8313.90 Plm Pupil Lumens Per Watt: 184.38 Plm/W Pupil Factor (Kp): 1.667  
 Circopic Flux: 17992.17 lm

### Electric Parameters

Voltage: 230.70V Current: 0.2080A Power: 45.09W  
 Power Factor: 0.9390 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: 51454 (2490) CCD Integration Time: 23.15 ms

Condition: Tx:21.4'C, Ti:0.0'C, R.H.:60%  
 Test Lab:  
 Operator: CRE

Test Device: Lisun LMS-9000B  
 Test Time: 2021-02-12 12:26:52  
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0011	0.1657	525	0.4509	66.5020	670	0.1767	26.0639
385	0.0014	0.2012	530	0.4672	68.9128	675	0.1530	22.5596
390	0.0004	0.0647	535	0.4741	69.9310	680	0.1337	19.7162
395	0.0004	0.0612	540	0.4801	70.8166	685	0.1152	16.9972
400	0.0013	0.1872	545	0.4851	71.5567	690	0.1001	14.7607
405	0.0013	0.1979	550	0.4903	72.3103	695	0.0859	12.6724
410	0.0027	0.3979	555	0.4968	73.2801	700	0.0734	10.8304
415	0.0049	0.7213	560	0.5038	74.3035	705	0.0631	9.3029
420	0.0093	1.3724	565	0.5109	75.3546	710	0.0531	7.8350
425	0.0201	2.9619	570	0.5167	76.2172	715	0.0455	6.7140
430	0.0425	6.2626	575	0.5227	77.0986	720	0.0386	5.6884
435	0.0869	12.8195	580	0.5269	77.7118	725	0.0338	4.9800
440	0.1720	25.3635	585	0.5301	78.1932	730	0.0279	4.1095
445	0.3370	49.7120	590	0.5311	78.3362	735	0.0235	3.4731
450	0.6717	99.0716	595	0.5294	78.0807	740	0.0213	3.1460
455	0.9869	145.5692	600	0.5244	77.3458	745	0.0166	2.4418
460	0.8387	123.6993	605	0.5169	76.2385	750	0.0152	2.2393
465	0.5304	78.2276	610	0.5029	74.1753	755	0.0134	1.9813
470	0.4060	59.8760	615	0.4858	71.6475	760	0.0114	1.6850
475	0.3057	45.0888	620	0.4642	68.4627	765	0.0080	1.1728
480	0.2157	31.8083	625	0.4382	64.6372	770	0.0067	0.9845
485	0.1902	28.0545	630	0.4090	60.3306	775	0.0055	0.8133
490	0.1983	29.2427	635	0.3798	56.0120	780	0.0031	0.4530
495	0.2213	32.6387	640	0.3488	51.4471	785	0.0045	0.6677
500	0.2635	38.8642	645	0.3163	46.6596	790	0.0029	0.4341
505	0.3159	46.5953	650	0.2852	42.0696	795	0.0031	0.4531
510	0.3652	53.8681	655	0.2552	37.6411	800	0.0042	0.6148
515	0.4025	59.3640	660	0.2275	33.5518			
520	0.4357	64.2646	665	0.2009	29.6374			

Condition: Tx:21.4'C, Ti:0.0'C, R.H.:60%  
 Test Lab:  
 Operator: CRE

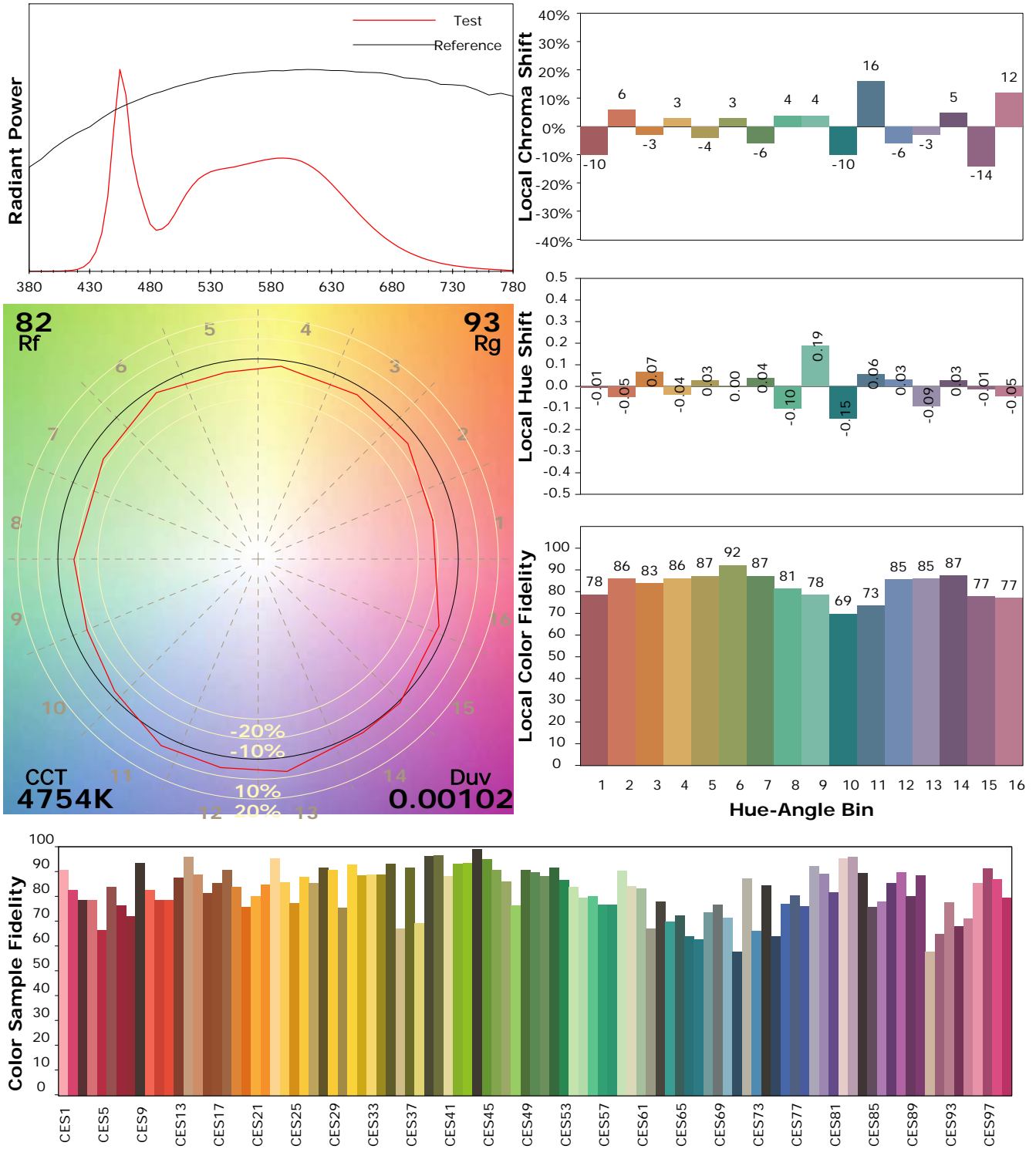
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## IES TM-30-18 Color Rendition Report

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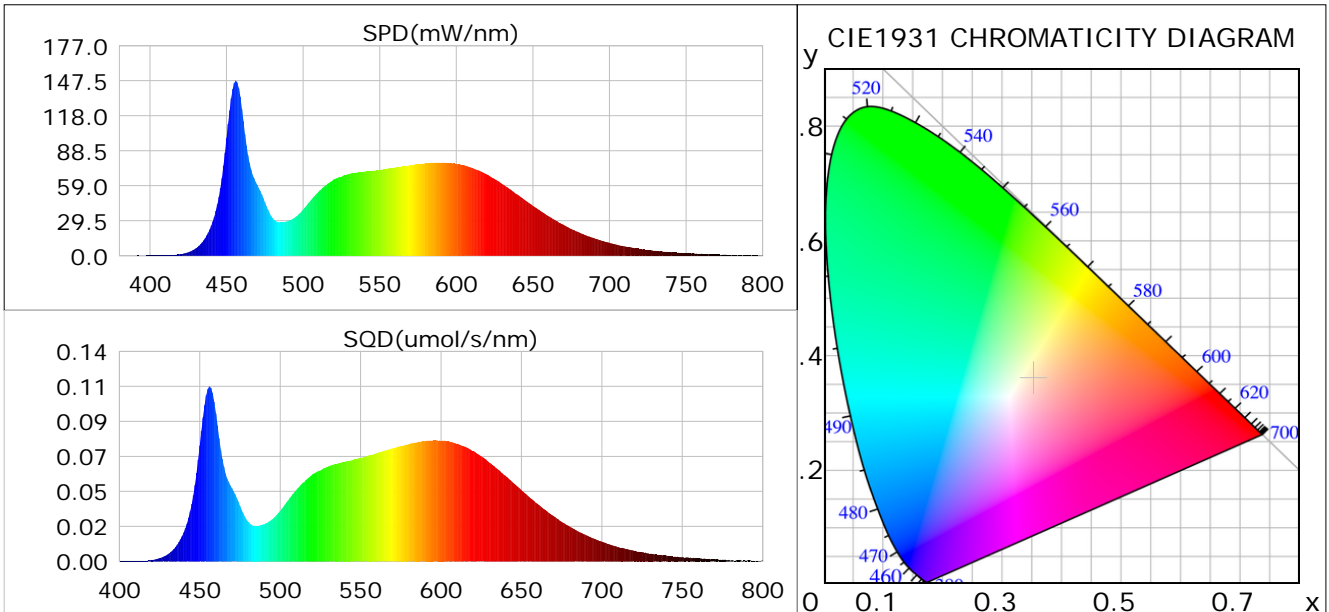
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 Test Lab:  
 Operator: CRE

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## Plant optical param data

### CIE Colorimetric Parameters

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 Peak Wavelength: 456.1nm Half Bandwidth: 18.0nm  
 Dominant Wavelength: 574.4nm Color Purity: 0.138  
 CRI:  $R_a=85.1$



### Plant Optical Param

$ \mu_v(lm): 4988.00$	$Q_v(lm.s): 4988.00$
$ \mu_e, \dot{E}(W/nm): 15.58$	$Q_e(J): 15.58$
$ \mu_e(W): 15.27$	$ \mu_{fr}(W): 0.32$
$ \zeta_e: 0.34$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.57$	$K_{fr}: 0.04$
$Erb\_Ratio: 1.08$	$PPF(umol/s): 70.63$
$PF_{uv}(360-400)(umol/s): 0.01$	$PPF(400-500)(umol/s): 15.39$
$PPF(500-600)(umol/s): 32.32$	$PPF(600-700)(umol/s): 22.93$
$PPF_{fr}(700-800)(umol/s): 1.90$	$PPF.t(umol): 70.63$
$ \mu_{ch-A.t}(J): 1.16$	$ \mu_{ch-A}(W): 1.16$
$ \mu_{ch-B.t}(J): 0.81$	$ \mu_{ch-B}(W): 0.81$
$ \mu_b.t(J): 3.98$	$ \mu_b(W): 3.98$
$ \mu_y.t(J): 7.02$	$ \mu_y(W): 7.02$
$ \mu_r.t(J): 4.39$	$ \mu_r(W): 4.39$

### Electric Parameters

Voltage: 230.70V	Current: 0.2080A	Power: 45.09W
Power Factor: 0.9390	Frequency: 49.99Hz	

Condition:  $T_x: 21.4^\circ C$ ,  $T_i: 0.0^\circ C$ , R.H.: 60%  
 Test Lab:  
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