

## Lightsource Test Report

### Product Information

Product Category: LED-Technik  
 Product Spec: LED-MODUL-210-25-CW  
 Manufacturer: METOLIGHT  
 Buyer: 5318

Product Type: LED-Technik-Module  
 Product Number: 1  
 Submitted Unit: 103241

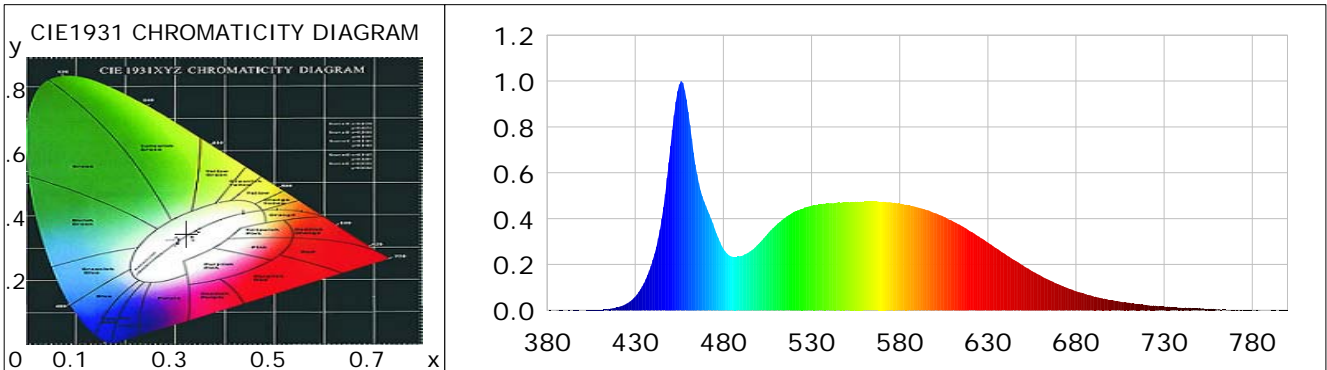
### CIE Colorimetric Parameters

Chromaticity coordinates:  $x=0.3229$   $y=0.3462$   $u(u')=0.1985$   $v=0.3191$   $v'=0.4787$   
 CCT:  $T_c=5918K$  ( $duv=0.00690$ ) Color Ratio:  $R=0.138$   $G=0.807$   $B=0.055$   
 Peak Wavelength: 456.2nm Half Bandwidth: 21.0nm  
 Dominant Wavelength: 509.0nm Color Purity: 0.032  
 CRI:  $R_a=82.4$ ,  $avgR(1\sim14)=74.8$ ,  $avgR(1\sim15)=74.8$  TM30:  $R_f=81$ ,  $R_g=91$   
 GAI:  $GAI\_BB\_8=86.4$ ,  $GAI\_BB\_15=93.3$ ,  $GAI\_EES=81.8$   

R1 =80	R2 =90	R3 =94	R4 =78	R5 =80	R6 =84	R7 =87	R8 =67
R9 =4	R10=74	R11=77	R12=53	R13=83	R14=97	R15=75	

Color Quality Scale:  $Q_a=80.7$ ,  $Q_f=81.0$ ,  $Q_p=79.3$ ,  $Q_g=89.2$   

Q1 =80	Q2 =97	Q3 =80	Q4 =71	Q5 =75	Q6 =77	Q7 =83	Q8 =88
Q9 =97	Q10=90	Q11=85	Q12=84	Q13=83	Q14=71	Q15=75	



### Photometric Parameters

Luminous Flux: 2721.8 lm	Efficiency: 107.58 lm/W	Radiant Power: 8.489 W
Total mains efficacy: 117.16 lm/W	Energy Efficiency Class: E (EU 2019/2015)	
Pupil Flux: 4995.14 Plm	Pupil Lumens Per Watt: 197.44 Plm/W	Pupil Factor (Kp): 1.835
Cirtopic Flux: 11363.30 lm		

### Electric Parameters

Voltage: 231.40V	Current: 0.2090A	Power: 25.30W
Power Factor: 0.5210	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: 45564 (2732)	CCD Integration Time: 63.35 ms

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

Test Device: Lisun LMS-9000B  
 Test Time: 2021-08-16 14:29:47  
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0002	0.0159	525	0.4432	39.0218	670	0.1145	10.0762
385	0.0010	0.0880	530	0.4560	40.1480	675	0.0980	8.6247
390	0.0006	0.0541	535	0.4627	40.7332	680	0.0832	7.3244
395	0.0010	0.0914	540	0.4667	41.0887	685	0.0717	6.3135
400	0.0009	0.0809	545	0.4707	41.4355	690	0.0605	5.3292
405	0.0013	0.1126	550	0.4709	41.4536	695	0.0521	4.5839
410	0.0025	0.2184	555	0.4737	41.7046	700	0.0444	3.9089
415	0.0064	0.5610	560	0.4747	41.7924	705	0.0383	3.3714
420	0.0132	1.1614	565	0.4756	41.8702	710	0.0336	2.9606
425	0.0287	2.5276	570	0.4730	41.6387	715	0.0274	2.4137
430	0.0599	5.2750	575	0.4705	41.4250	720	0.0237	2.0838
435	0.1185	10.4344	580	0.4659	41.0186	725	0.0207	1.8202
440	0.2203	19.3929	585	0.4584	40.3562	730	0.0173	1.5249
445	0.3997	35.1888	590	0.4492	39.5452	735	0.0129	1.1365
450	0.7168	63.1047	595	0.4379	38.5521	740	0.0106	0.9312
455	0.9854	86.7477	600	0.4240	37.3280	745	0.0106	0.9328
460	0.8662	76.2576	605	0.4078	35.8967	750	0.0109	0.9634
465	0.5941	52.2986	610	0.3895	34.2858	755	0.0064	0.5676
470	0.4565	40.1917	615	0.3692	32.5036	760	0.0037	0.3274
475	0.3565	31.3823	620	0.3443	30.3066	765	0.0039	0.3415
480	0.2683	23.6188	625	0.3214	28.2956	770	0.0015	0.1346
485	0.2340	20.6043	630	0.2955	26.0160	775	0.0032	0.2837
490	0.2373	20.8925	635	0.2698	23.7482	780	0.0008	0.0739
495	0.2567	22.5952	640	0.2437	21.4535	785	0.0004	0.0331
500	0.2902	25.5500	645	0.2194	19.3140	790	0.0003	0.0231
505	0.3331	29.3244	650	0.1955	17.2095	795	0.0009	0.0751
510	0.3728	32.8170	655	0.1712	15.0720	800	0.0011	0.1000
515	0.4039	35.5568	660	0.1513	13.3165			
520	0.4296	37.8200	665	0.1310	11.5371			

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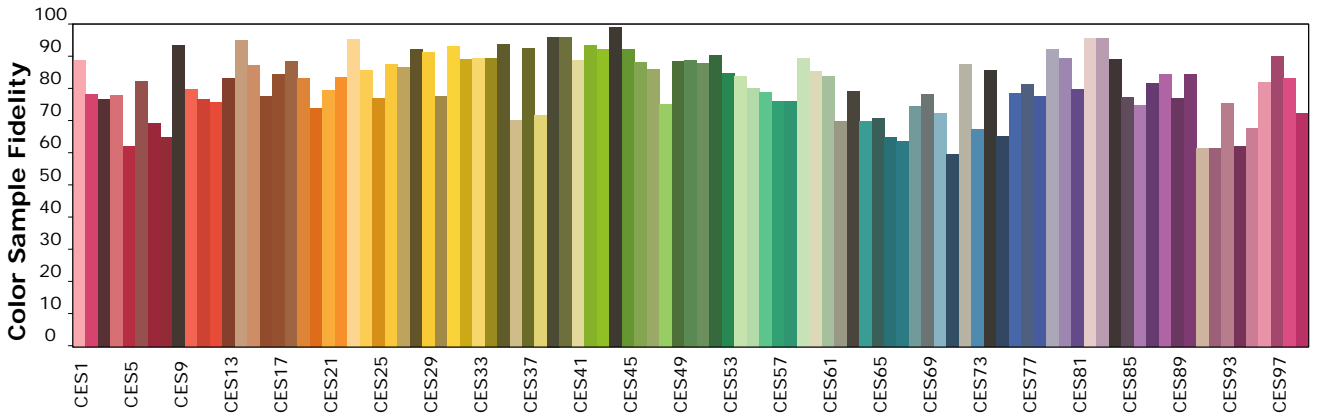
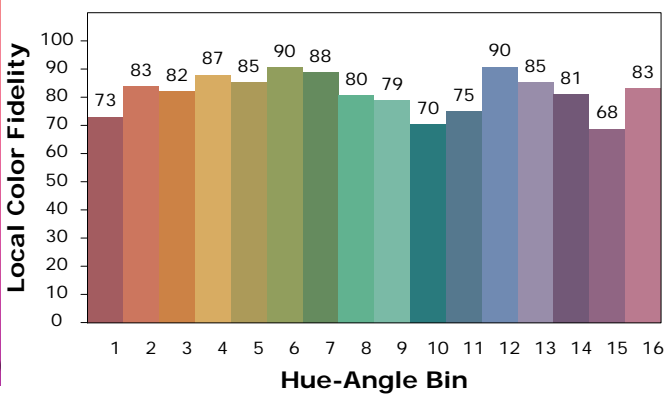
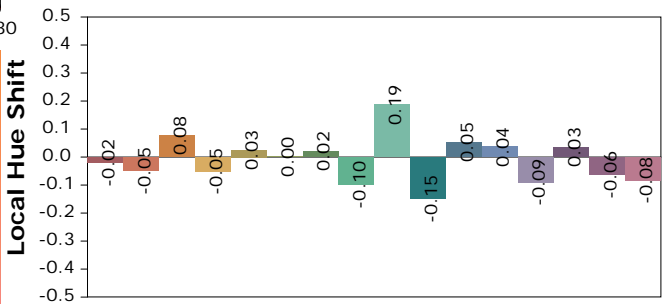
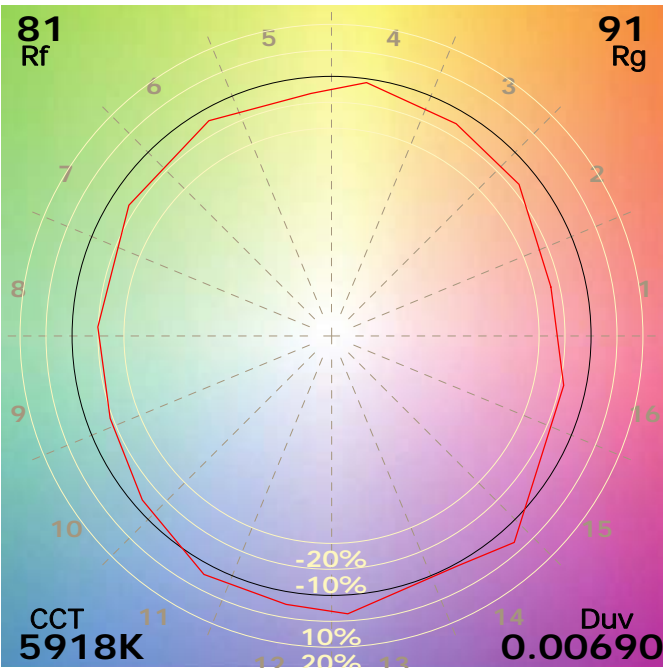
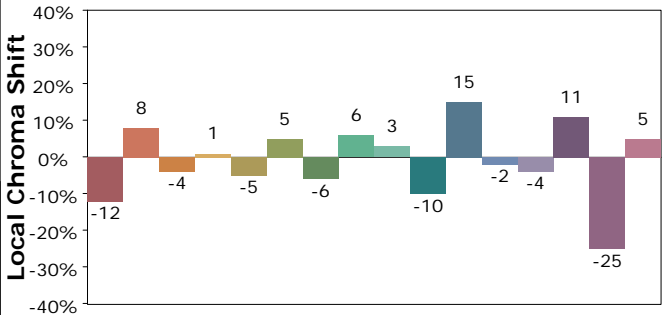
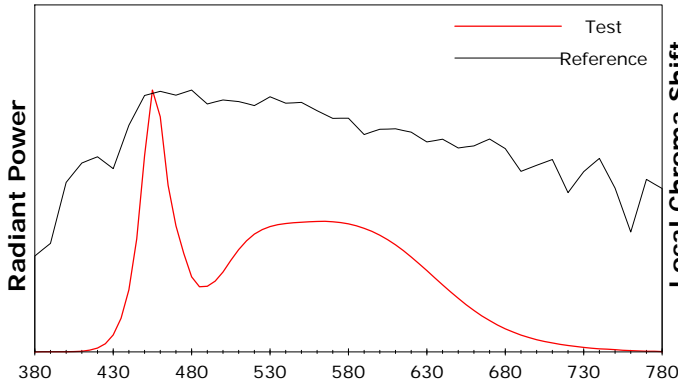
Test Device: Lisun LMS-9000B  
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 Inspector:

## IES TM-30-18 Color Rendition Report

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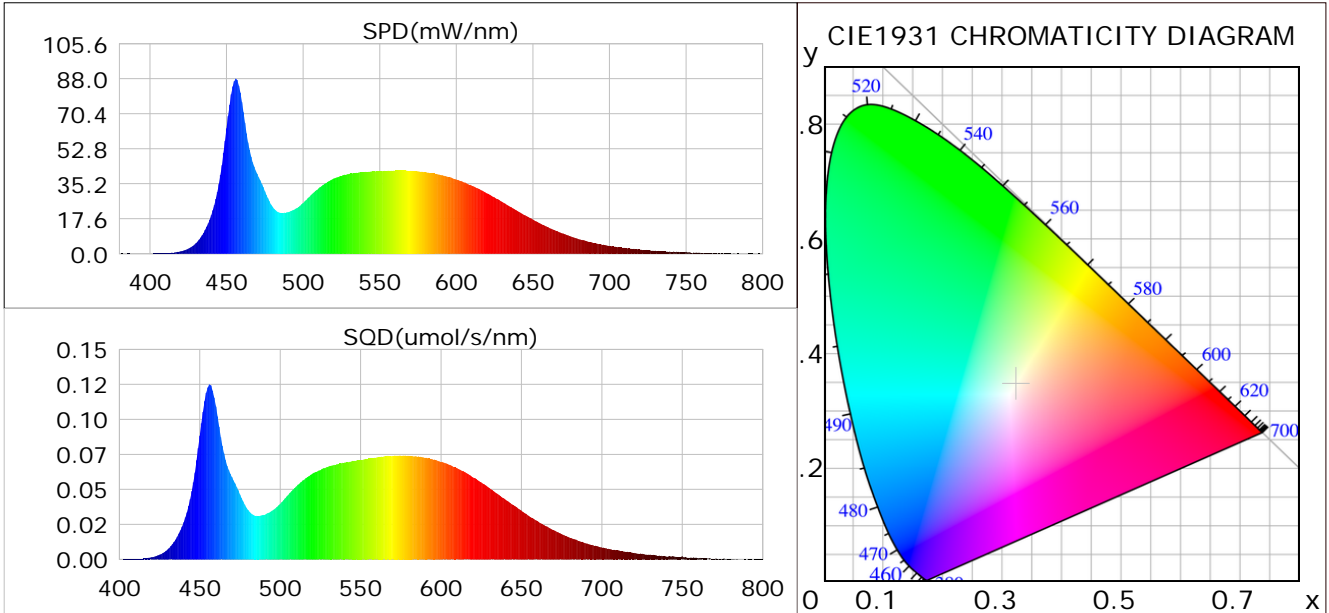
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Test Device: Lisun LMS-9000B  
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## Plant optical param data

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 Dominant Wavelength: 509.0nm Color Purity: 0.032  
 CRI:  $R_a=82.4$



### Plant Optical Param

$ \mu_v(lm): 2721.80$	$Q_v(lm.s): 2721.80$
$ \mu_e, \dot{E}(W/nm): 8.49$	$Q_e(J): 8.49$
$ \mu_e(W): 8.38$	$ \mu_{fr}(W): 0.11$
$ \zeta_e: 0.33$	$ \zeta_{fr}: 0.00$
$PPE(umol/s/w): 1.50$	$K_{fr}: 0.03$
$Erb\_Ratio: 0.70$	$PPF(umol/s): 37.98$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 10.21$
$PPF(500-600)(umol/s): 18.01$	$PPF(600-700)(umol/s): 9.77$
$PPF_{fr}(700-800)(umol/s): 0.65$	$PPF.t(umol): 37.98$
$ \mu_{ch-A.t}(J): 0.63$	$ \mu_{ch-A}(W): 0.63$
$ \mu_{ch-B.t}(J): 0.48$	$ \mu_{ch-B}(W): 0.48$
$ \mu_b.t(J): 2.64$	$ \mu_b(W): 2.64$
$ \mu_y.t(J): 3.93$	$ \mu_y(W): 3.93$
$ \mu_r.t(J): 1.88$	$ \mu_r(W): 1.88$

### Electric Parameters

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Power Factor: 0.5210	Frequency: 49.99Hz	

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