

Lightsource Test Report

Product Information

Product Category: LED-Technik
 Product Spec: LED-MODUL-142-15-CW
 Manufacturer: METOLIGHT
 Buyer: 5318

Product Type: LED-Technik-Module
 Product Number: 1
 Submitted Unit: 103235

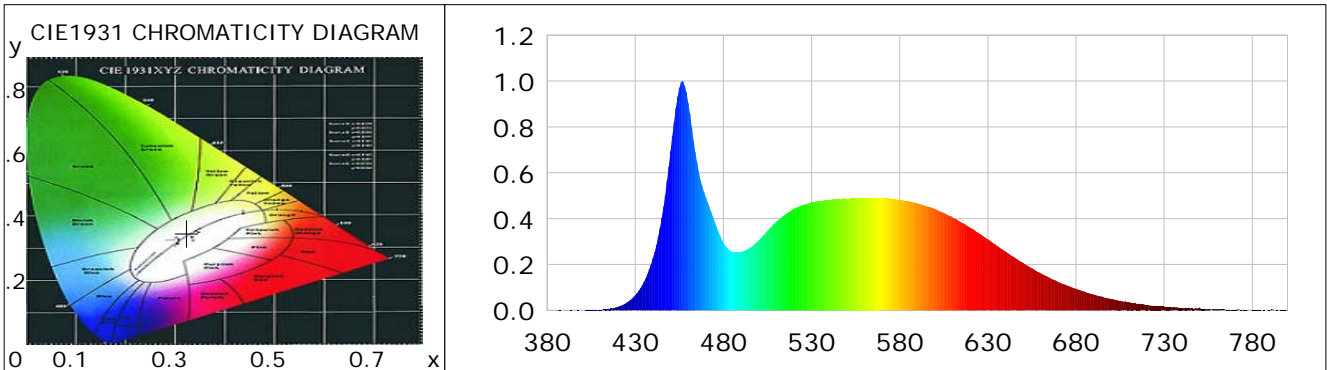
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3236$ $y=0.3469$ $u(u')=0.1986$ $v=0.3195$ $v'=0.4792$
 CCT: $T_c=5888K$ ($duv=0.00698$) Color Ratio: $R=0.139$ $G=0.805$ $B=0.056$
 Peak Wavelength: 456.7nm Half Bandwidth: 22.8nm
 Dominant Wavelength: 511.5nm Color Purity: 0.031
 CRI: $R_a=82.8$, $avgR(1\sim14)=75.5$, $avgR(1\sim15)=75.5$ TM30: $R_f=82$, $R_g=91$
 GAI: $GAI_BB_8=86.3$, $GAI_BB_15=93.1$, $GAI_EES=81.6$

R1 =81	R2 =90	R3 =94	R4 =78	R5 =80	R6 =85	R7 =86	R8 =67
R9 =7	R10=75	R11=77	R12=55	R13=84	R14=97	R15=76	

Color Quality Scale: $Q_a=81.1$, $Q_f=81.5$, $Q_p=79.5$, $Q_g=89.1$

Q1 =80	Q2 =97	Q3 =81	Q4 =72	Q5 =75	Q6 =77	Q7 =83	Q8 =89
Q9 =97	Q10=90	Q11=86	Q12=85	Q13=84	Q14=72	Q15=76	



Photometric Parameters

Luminous Flux: 1698.5 lm Efficiency: 99.21 lm/W Radiant Power: 5.318 W
 Total mains efficacy: 116.67 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 3124.87 Plm Pupil Lumens Per Watt: 182.53 Plm/W Pupil Factor (Kp): 1.840
 Circopic Flux: 7127.00 lm

Electric Parameters

Voltage: 231.30V Current: 0.1290A Power: 17.12W
 Power Factor: 0.5720 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: 43573 (2740) CCD Integration Time: 93.41 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0048	525	0.4580	24.2563	670	0.1241	6.5739
385	0.0004	0.0230	530	0.4711	24.9530	675	0.1087	5.7571
390	0.0005	0.0278	535	0.4772	25.2745	680	0.0943	4.9968
395	0.0004	0.0237	540	0.4810	25.4784	685	0.0809	4.2841
400	0.0006	0.0311	545	0.4854	25.7098	690	0.0691	3.6623
405	0.0010	0.0518	550	0.4872	25.8059	695	0.0594	3.1461
410	0.0029	0.1521	555	0.4899	25.9452	700	0.0488	2.5863
415	0.0071	0.3771	560	0.4910	26.0034	705	0.0423	2.2393
420	0.0150	0.7948	565	0.4915	26.0295	710	0.0360	1.9041
425	0.0328	1.7392	570	0.4891	25.9058	715	0.0289	1.5296
430	0.0658	3.4846	575	0.4872	25.8021	720	0.0234	1.2368
435	0.1243	6.5834	580	0.4824	25.5487	725	0.0199	1.0565
440	0.2272	12.0357	585	0.4757	25.1973	730	0.0174	0.9219
445	0.4042	21.4101	590	0.4670	24.7364	735	0.0125	0.6600
450	0.6938	36.7478	595	0.4551	24.1032	740	0.0111	0.5901
455	0.9705	51.4043	600	0.4421	23.4136	745	0.0082	0.4329
460	0.9048	47.9203	605	0.4246	22.4894	750	0.0122	0.6437
465	0.6461	34.2188	610	0.4050	21.4485	755	0.0063	0.3332
470	0.4941	26.1702	615	0.3838	20.3300	760	0.0045	0.2372
475	0.3872	20.5079	620	0.3609	19.1142	765	0.0022	0.1187
480	0.2959	15.6734	625	0.3352	17.7528	770	0.0027	0.1445
485	0.2563	13.5762	630	0.3098	16.4090	775	0.0029	0.1558
490	0.2552	13.5185	635	0.2823	14.9534	780	0.0028	0.1478
495	0.2726	14.4359	640	0.2568	13.5990	785	0.0026	0.1391
500	0.3048	16.1452	645	0.2312	12.2433	790	0.0010	0.0538
505	0.3463	18.3396	650	0.2069	10.9581	795	0.0002	0.0114
510	0.3872	20.5055	655	0.1838	9.7349	800	0.0040	0.2118
515	0.4174	22.1086	660	0.1619	8.5751			
520	0.4433	23.4817	665	0.1420	7.5197			

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

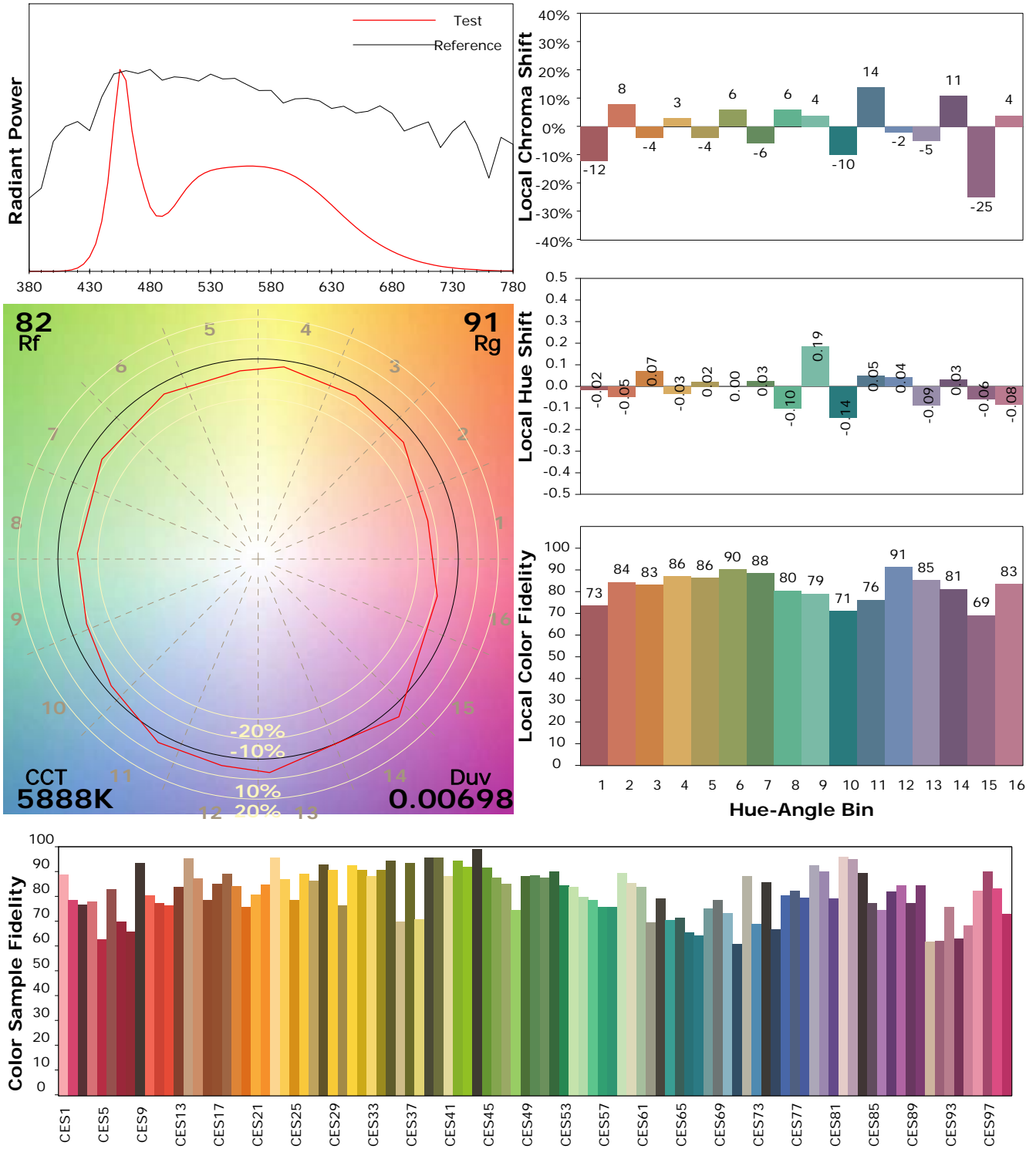
Test Device: Lisun LMS-9000B
 Test Time: 2021-08-16 11:54:32
 Inspector:

IES TM-30-18 Color Rendition Report

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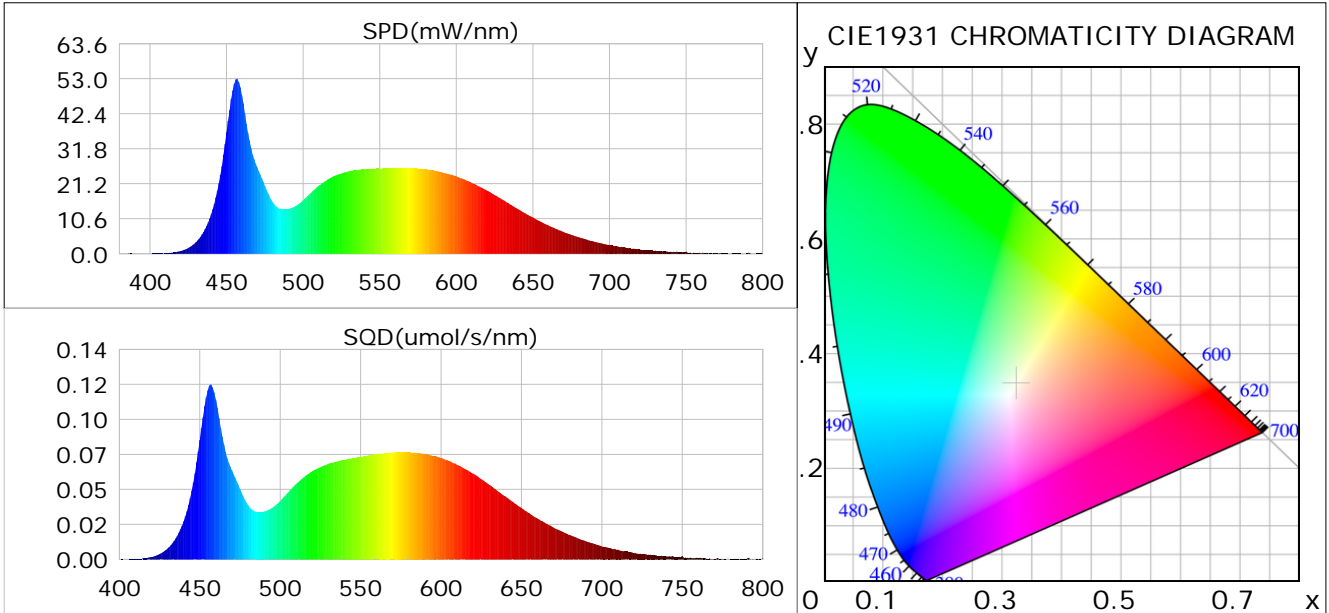
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-08-16 11:54:32
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Plant optical param data

CIE Colorimetric Parameters

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 Dominant Wavelength: 511.5nm Color Purity: 0.031
 CRI: $R_a=82.8$



Plant Optical Param

$ \mu_v(lm): 1698.50$	$Q_v(lm.s): 1698.50$
$ \mu_e, \dot{E}(W/nm): 5.32$	$Q_e(J): 5.32$
$ \mu_e(W): 5.25$	$ \mu_{fr}(W): 0.07$
$ \zeta_e: 0.31$	$ \zeta_{fr}: 0.00$
$PPE(umol/s/w): 1.39$	$K_{fr}: 0.02$
$Erb_Ratio: 0.71$	$PPF(umol/s): 23.82$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 6.39$
$PPF(500-600)(umol/s): 11.21$	$PPF(600-700)(umol/s): 6.22$
$PPF_{fr}(700-800)(umol/s): 0.41$	$PPF.t(umol): 23.82$
$ \mu_{ch-A.t}(J): 0.40$	$ \mu_{ch-A}(W): 0.40$
$ \mu_{ch-B.t}(J): 0.30$	$ \mu_{ch-B}(W): 0.30$
$ \mu_b.t(J): 1.65$	$ \mu_b(W): 1.65$
$ \mu_y.t(J): 2.45$	$ \mu_y(W): 2.45$
$ \mu_r.t(J): 1.20$	$ \mu_r(W): 1.20$

Electric Parameters

Voltage: 231.30V	Current: 0.1290A	Power: 17.12W
Power Factor: 0.5720	Frequency: 49.99Hz	

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

Test Device: Lisun LMS-9000B
 Test Time: 2021-08-16 11:54:32
 Inspector: