

Lightsource Test Report

Product Information

Product Category: LED-Technik
 Product Spec: LED-MODUL-110-10-WW
 Manufacturer: METOLIGHT
 Buyer: 5318

Product Type: LED-Technik-Module
 Product Number: 1
 Submitted Unit: 103230

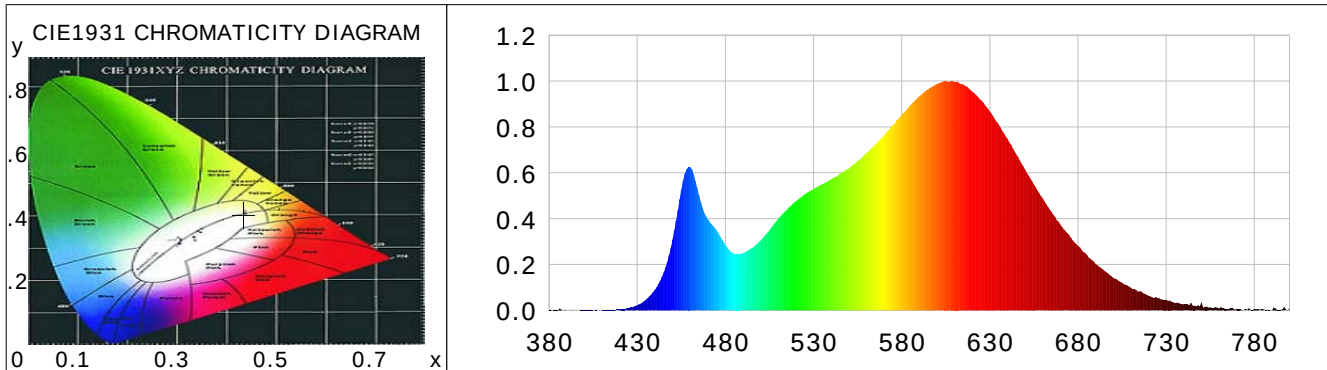
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.4347$ $y=0.4051$ $u(u')=0.2487$ $v=0.3476$ $v'=0.5215$
 CCT: $T_c=3046K$ ($duv=0.00072$) Color Ratio: $R=0.231$ $G=0.739$ $B=0.030$
 Peak Wavelength: 604.9nm Half Bandwidth: 134.9nm
 Dominant Wavelength: 582.4nm Color Purity: 0.521
 CRI: $R_a=84.9$, $avgR(1\sim14)=80.0$, $avgR(1\sim15)=79.9$ TM30: $R_f=84$, $R_g=93$
 GAI: $GAI_BB_8=89.5$, $GAI_BB_15=99.4$, $GAI_EES=52.5$

R1 =85	R2 =94	R3 =96	R4 =82	R5 =84	R6 =93	R7 =82	R8 =63
R9 =19	R10=86	R11=81	R12=70	R13=87	R14=99	R15=78	

Color Quality Scale: $Q_a=84.2$, $Q_f=85.9$, $Q_p=83.8$, $Q_g=89.7$

Q1 =80	Q2 =93	Q3 =86	Q4 =80	Q5 =81	Q6 =82	Q7 =85	Q8 =89
Q9 =96	Q10=93	Q11=90	Q12=87	Q13=86	Q14=76	Q15=78	



Photometric Parameters

Luminous Flux: 958.50 lm	Efficiency: 109.79 lm/W	Radiant Power: 2.911 W
Total mains efficacy: 119.57 lm/W	Energy Efficiency Class: E (EU 2019/2015)	
Pupil Flux: 1250.07 Plm	Pupil Lumens Per Watt: 143.19 Plm/W	Pupil Factor (Kp): 1.304
Cirtpic Flux: 2362.55 lm		

Electric Parameters

Voltage: 231.30V	Current: 0.0740A	Power: 8.73W
Power Factor: 0.5060	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: 45494 (3035)	CCD Integration Time: 396.01 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 11:23:31
 Inspector:

Lightsource Test Report

Product Infomation

Product Category: LED-Technik
 Product Spec: LED-MODUL-110-10-WW
 Manufacturer: METOLIGHT
 Buyer: 5318

Product Type: LED-Technik-Module
 Product Number: 1
 Submitted Unit: 103230

WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0016	0.0304	525	0.5066	9.7986	670	0.3746	7.2451
385	0.0013	0.0256	530	0.5284	10.2196	675	0.3281	6.3463
390	0.0011	0.0204	535	0.5503	10.6432	680	0.2812	5.4391
395	0.0005	0.0092	540	0.5724	11.0712	685	0.2417	4.6740
400	0.0012	0.0224	545	0.5949	11.5059	690	0.2017	3.9010
405	0.0002	0.0032	550	0.6190	11.9729	695	0.1721	3.3293
410	0.0009	0.0172	555	0.6512	12.5956	700	0.1424	2.7543
415	0.0025	0.0481	560	0.6864	13.2758	705	0.1205	2.3300
420	0.0048	0.0919	565	0.7235	13.9932	710	0.0987	1.9095
425	0.0087	0.1684	570	0.7638	14.7728	715	0.0837	1.6190
430	0.0223	0.4322	575	0.8087	15.6412	720	0.0640	1.2381
435	0.0465	0.8992	580	0.8534	16.5062	725	0.0545	1.0548
440	0.0896	1.7324	585	0.8944	17.2990	730	0.0457	0.8831
445	0.1659	3.2094	590	0.9340	18.0656	735	0.0319	0.6161
450	0.3092	5.9803	595	0.9638	18.6413	740	0.0259	0.5011
455	0.5263	10.1797	600	0.9866	19.0817	745	0.0210	0.4053
460	0.6247	12.0836	605	1.0000	19.3416	750	0.0347	0.6720
465	0.5017	9.7032	610	0.9954	19.2531	755	0.0136	0.2636
470	0.3976	7.6893	615	0.9848	19.0475	760	0.0082	0.1583
475	0.3480	6.7301	620	0.9538	18.4483	765	0.0056	0.1079
480	0.2847	5.5065	625	0.9162	17.7215	770	0.0068	0.1306
485	0.2467	4.7708	630	0.8667	16.7643	775	0.0052	0.1001
490	0.2498	4.8318	635	0.8103	15.6723	780	0.0061	0.1181
495	0.2716	5.2524	640	0.7481	14.4694	785	0.0046	0.0889
500	0.3047	5.8937	645	0.6806	13.1633	790	0.0006	0.0109
505	0.3504	6.7772	650	0.6130	11.8566	795	0.0018	0.0343
510	0.4003	7.7423	655	0.5483	10.6048	800	0.0092	0.1787
515	0.4403	8.5154	660	0.4880	9.4393			
520	0.4758	9.2029	665	0.4288	8.2931			

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

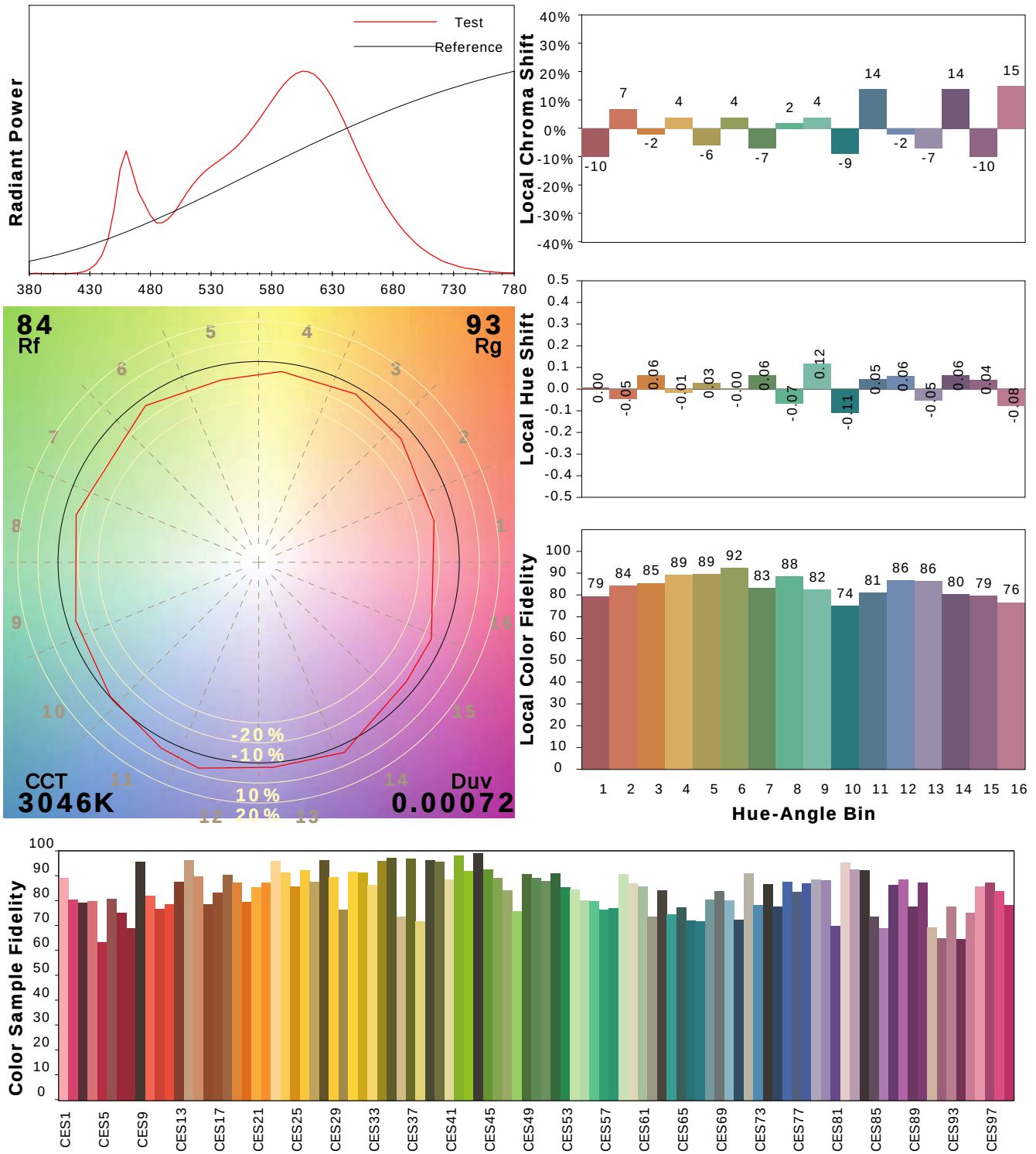
Test Device: Lisun LMS-9000B
 Test Time: 2021-08-16 11:23:31
 Inspector:

IES TM-30-18 Color Rendition Report

Product Information

Product Category: LED-Technik
 Product Spec: LED-MODUL-110-10-WW
 Manufacturer: METOLIGHT
 Buyer: 5318

Product Type: LED-Technik-Module
 Product Number: 1
 Submitted Unit: 103230



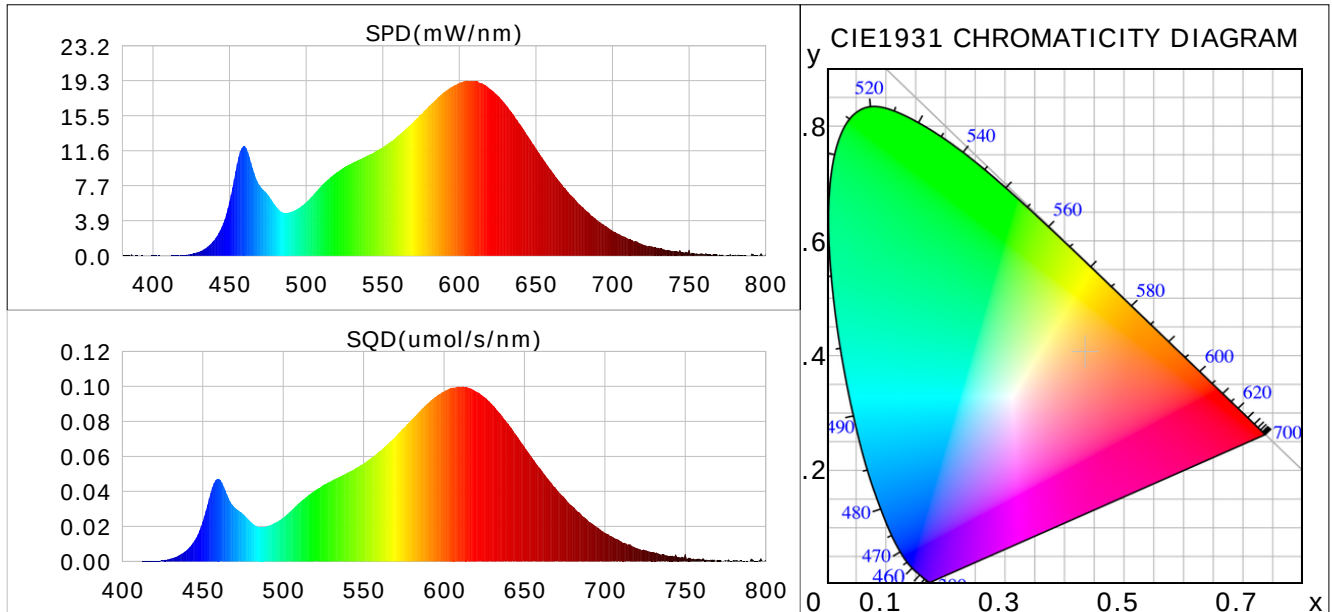
Condition: Tx:0.0°C, Ti:0.0°C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-08-16 11:23:31
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.4347$ $y=0.4051$ $u(u')=0.2487$ $v=0.3476$ $v'=0.5215$
 CCT: $T_c=3046K$ ($duv=0.00072$) Color Ratio: $R=0.231$ $G=0.739$ $B=0.030$
 Peak Wavelength: 604.9nm Half Bandwidth: 134.9nm
 Dominant Wavelength: 582.4nm Color Purity: 0.521
 CRI: Ra= 84.9



Plant Optical Param

$\mu_v(lm): 958.50$	$Q_v(lm.s): 958.50$
$\mu_e, \dot{E}(W/nm): 2.91$	$Q_e(J): 2.91$
$\mu_e(W): 2.85$	$\mu_{fr}(W): 0.07$
$\dot{C}_e: 0.33$	$\dot{C}_{fr}: 0.01$
$PPE(umol/s/w): 1.57$	$K_{fr}: 0.05$
$Erb_Ratio: 2.83$	$PPF(umol/s): 13.74$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 1.62$
$PPF(500-600)(umol/s): 5.89$	$PPF(600-700)(umol/s): 6.23$
$PF_{fr}(700-800)(umol/s): 0.40$	$PPF.t(umol): 13.74$
$\mu_{ch-A.t}(J): 0.22$	$\mu_{ch-A}(W): 0.22$
$\mu_{ch-B.t}(J): 0.12$	$\mu_{ch-B}(W): 0.12$
$\mu_b.t(J): 0.41$	$\mu_b(W): 0.41$
$\mu_y.t(J): 1.27$	$\mu_y(W): 1.27$
$\mu_r.t(J): 1.19$	$\mu_r(W): 1.19$

Electric Parameters

Voltage: 231.30V	Current: 0.0740A	Power: 8.73W
Power Factor: 0.5060	Frequency: 49.99Hz	

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 11:23:31
 Inspector: