

Lightsource Test Report

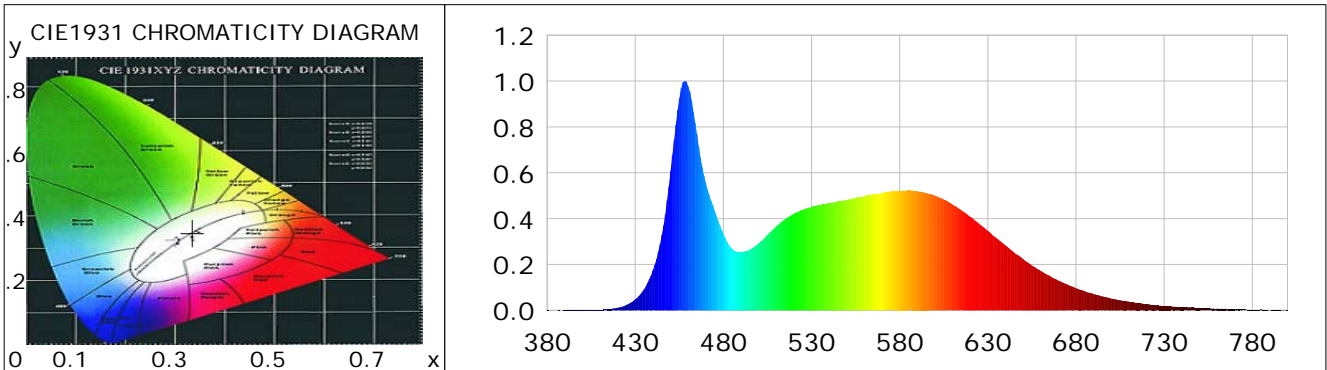
Product Information

Product Category: LED-HiPower
 Product Spec: LED-FL-200-W2-CW
 Manufacturer: METOLIGHT
 Buyer: 5069

Product Type: LED-HiPower-Fluter
 Product Number: 1
 Submitted Unit: 101529

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3352$ $y=0.3480$ $u(u')=0.2061$ $v=0.3209$ $v'=0.4814$
 CCT: $T_c=5388K$ ($duv=0.00231$) Color Ratio: $R=0.152$ $G=0.791$ $B=0.056$
 Peak Wavelength: 458.2nm Half Bandwidth: 23.8nm
 Dominant Wavelength: 559.7nm Color Purity: 0.050
 CRI: $R_a=83.7$, $avgR(1\sim14)=77.4$, $avgR(1\sim15)=77.5$ TM30: $R_f=81$, $R_g=91$
 GAI: $GAI_BB_8=89.2$, $GAI_BB_15=96.0$, $GAI_EES=81.3$
 R1 =83 R2 =94 R3 =94 R4 =78 R5 =82 R6 =88 R7 =83 R8 =66
 R9 =11 R10=83 R11=77 R12=59 R13=87 R14=98 R15=78
 Color Quality Scale: $Q_a=80.7$, $Q_f=81.1$, $Q_p=79.1$, $Q_g=89.6$
 Q1 =78 Q2 =96 Q3 =81 Q4 =71 Q5 =74 Q6 =76 Q7 =83 Q8 =89
 Q9 =97 Q10=91 Q11=85 Q12=83 Q13=82 Q14=72 Q15=75



Photometric Parameters

Luminous Flux: 26666 lm Efficiency: 131.18 lm/W Radiant Power: 83.590 W
 Total mains efficacy: 154.27 lm/W Energy Efficiency Class: D (EU 2019/2015)
 Pupil Flux: 47805.43 Plm Pupil Lumens Per Watt: 235.17 Plm/W Pupil Factor (Kp): 1.793
 Circopic Flux: 108819.87 lm

Electric Parameters

Voltage: 230.80V Current: 0.8950A Power: 203.28W
 Power Factor: 0.9820 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: 45599 (2615) CCD Integration Time: 8.97 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0008	0.6625	525	0.4363	351.5313	670	0.1303	105.0134
385	0.0006	0.5188	530	0.4518	364.0185	675	0.1136	91.5719
390	0.0007	0.5766	535	0.4601	370.7341	680	0.0968	77.9931
395	0.0017	1.3405	540	0.4661	375.6038	685	0.0831	66.9692
400	0.0013	1.0303	545	0.4765	383.9416	690	0.0708	57.0899
405	0.0024	1.9504	550	0.4817	388.1610	695	0.0608	48.9682
410	0.0032	2.5614	555	0.4906	395.2856	700	0.0520	41.8814
415	0.0056	4.5033	560	0.4976	400.9645	705	0.0441	35.5337
420	0.0112	9.0131	565	0.5062	407.9269	710	0.0378	30.4737
425	0.0238	19.1618	570	0.5124	412.8780	715	0.0319	25.7056
430	0.0476	38.3372	575	0.5191	418.3053	720	0.0272	21.9106
435	0.0917	73.8935	580	0.5215	420.2579	725	0.0233	18.7845
440	0.1746	140.6771	585	0.5225	421.0456	730	0.0199	16.0492
445	0.3283	264.5110	590	0.5201	419.0831	735	0.0161	12.9607
450	0.6072	489.2435	595	0.5120	412.5387	740	0.0140	11.3190
455	0.9247	745.1393	600	0.5001	402.9802	745	0.0119	9.6256
460	0.9774	787.5816	605	0.4836	389.6630	750	0.0106	8.5261
465	0.7676	618.5550	610	0.4612	371.6692	755	0.0089	7.1656
470	0.5561	448.1197	615	0.4367	351.9052	760	0.0081	6.5271
475	0.4355	350.9219	620	0.4082	328.9526	765	0.0076	6.1131
480	0.3336	268.8420	625	0.3783	304.8637	770	0.0062	4.9837
485	0.2685	216.3889	630	0.3464	279.1281	775	0.0037	2.9798
490	0.2542	204.8636	635	0.3141	253.1387	780	0.0031	2.5252
495	0.2658	214.2175	640	0.2827	227.8344	785	0.0046	3.6667
500	0.2920	235.2961	645	0.2519	203.0164	790	0.0014	1.1040
505	0.3290	265.0957	650	0.2236	180.1830	795	0.0031	2.5087
510	0.3669	295.6842	655	0.1958	157.7961	800	0.0009	0.7519
515	0.3967	319.6332	660	0.1720	138.6003			
520	0.4224	340.3538	665	0.1510	121.6533			

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

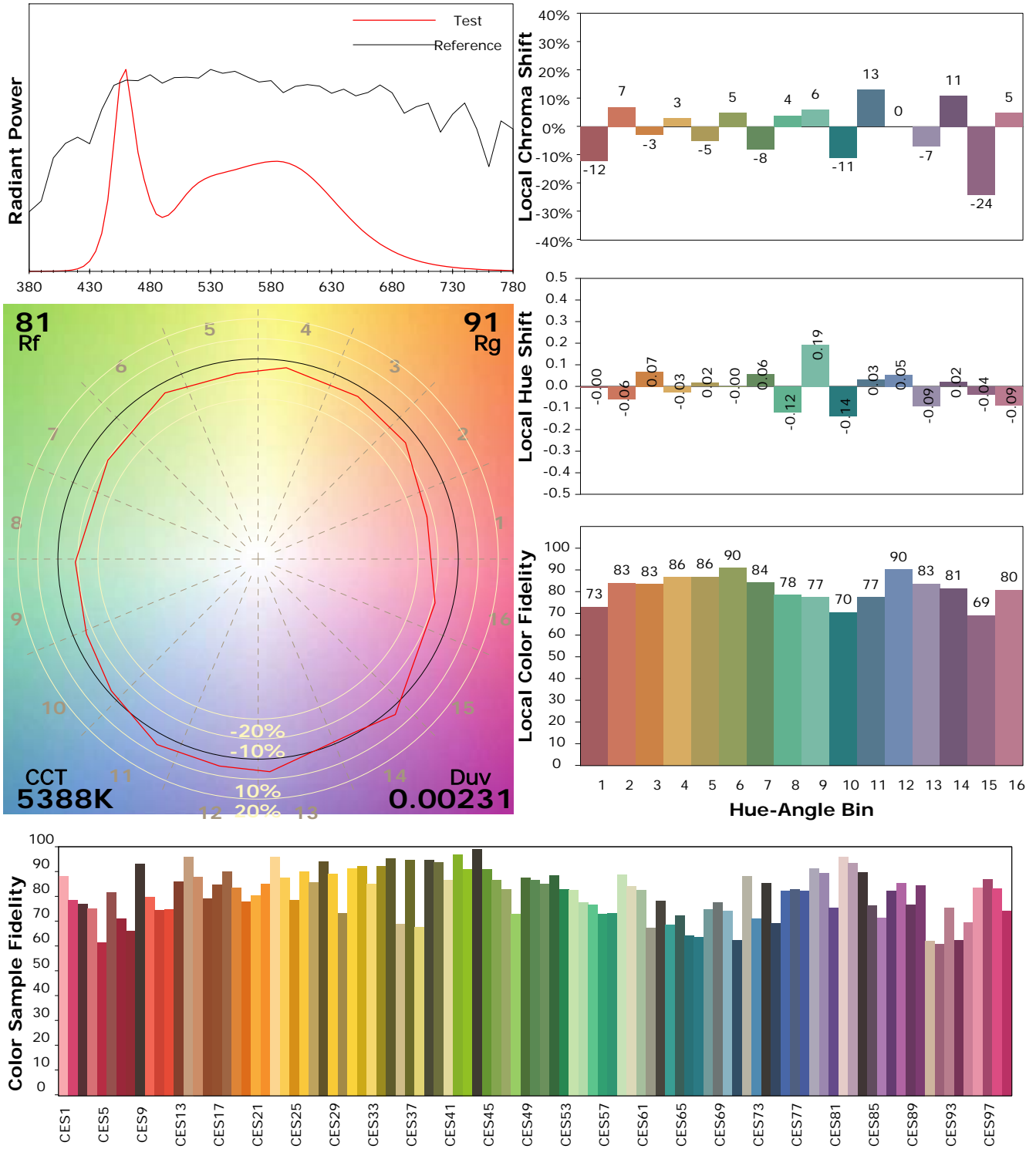
Test Device: Lisun LMS-9000B
 Test Time: 2021-08-18 13:09:54
 Inspector:

IES TM-30-18 Color Rendition Report

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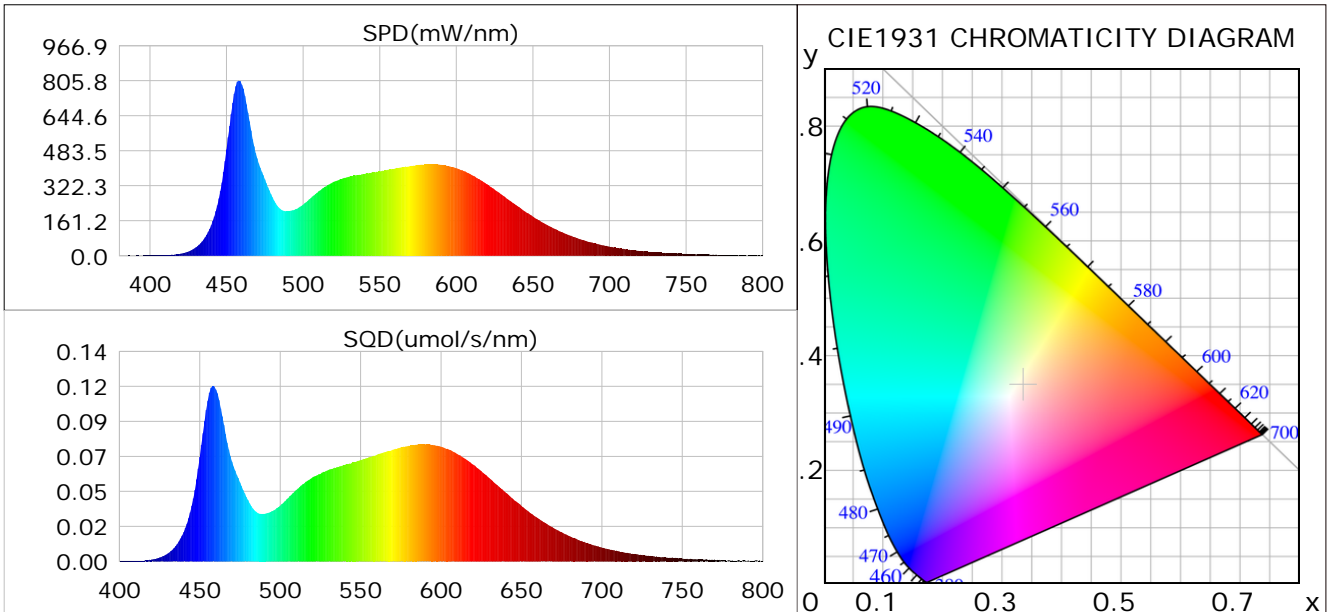
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Plant optical param data

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 Dominant Wavelength: 559.7nm Color Purity: 0.050
 CRI: $R_a=83.7$



Plant Optical Param

$ \mu_v(lm): 26666.00$	$Q_v(lm.s): 26666.00$
$ \mu_e, \dot{E}(W/nm): 83.59$	$Q_e(J): 83.59$
$ \mu_e(W): 82.40$	$ \mu_{fr}(W): 1.26$
$ \zeta_e: 0.41$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.85$	$K_{fr}: 0.04$
$Erb_Ratio: 0.78$	$PPF(umol/s): 375.87$
$PF_{uv}(360-400)(umol/s): 0.05$	$PPF(400-500)(umol/s): 97.76$
$PPF(500-600)(umol/s): 173.64$	$PPF(600-700)(umol/s): 104.46$
$PPF_{fr}(700-800)(umol/s): 7.40$	$PPF.t(umol): 375.87$
$ \mu_{ch-A.t}(J): 6.09$	$ \mu_{ch-A}(W): 6.09$
$ \mu_{ch-B.t}(J): 4.76$	$ \mu_{ch-B}(W): 4.76$
$ \mu_b.t(J): 25.18$	$ \mu_b(W): 25.18$
$ \mu_y.t(J): 37.75$	$ \mu_y(W): 37.75$
$ \mu_r.t(J): 20.12$	$ \mu_r(W): 20.12$

Electric Parameters

Voltage: 230.80V	Current: 0.8950A	Power: 203.28W
Power Factor: 0.9820	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
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