

Lightsource Test Report

Product Information

Product Category: LED-Leuchten Product Type: LED-Leuchten-Downlight-Magic
 Product Spec: LED-DEL-M-160-190-18S-WWM-WF-D Product Number: 1
 Manufacturer: METOLIGHT Submitted Unit: 104227
 Buyer: 2320

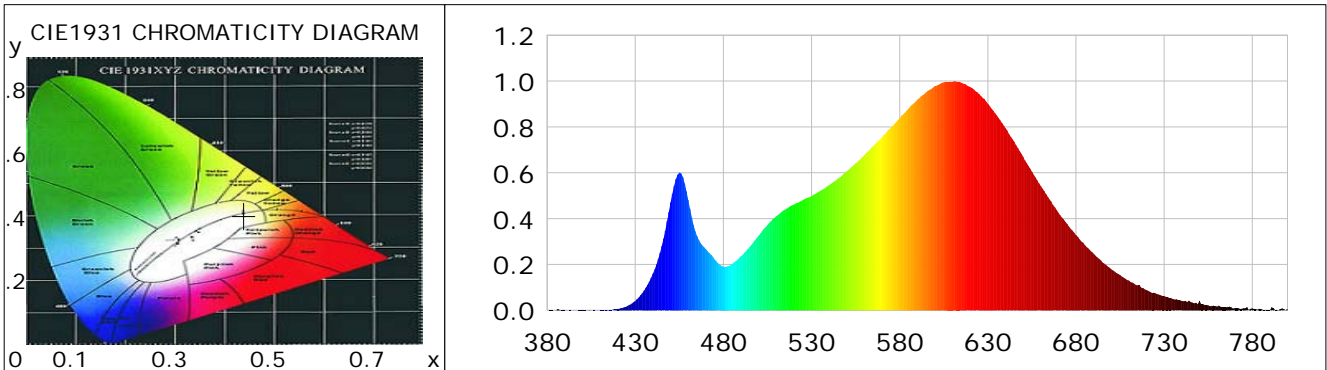
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.4391$ $y=0.4019$ $u(u')=0.2529$ $v=0.3472$ $v'=0.5208$
 CCT: $T_c=2946K$ ($duv=-0.00116$) Color Ratio: $R=0.239$ $G=0.734$ $B=0.027$
 Peak Wavelength: 611.1nm Half Bandwidth: 133.2nm
 Dominant Wavelength: 583.5nm Color Purity: 0.524
 CRI: $R_a=86.1$, $avgR(1\sim14)=81.8$, $avgR(1\sim15)=81.6$ TM30: $R_f=86$, $R_g=96$
 GAI: $GAI_BB_8=97.8$, $GAI_BB_15=105.7$, $GAI_EES=54.7$

R1 =85	R2 =94	R3 =97	R4 =84	R5 =86	R6 =93	R7 =84	R8 =66
R9 =26	R10=85	R11=84	R12=74	R13=87	R14=99	R15=79	

Color Quality Scale: $Q_a=85.1$, $Q_f=86.6$, $Q_p=87.1$, $Q_g=93.2$

Q1 =82	Q2 =95	Q3 =85	Q4 =82	Q5 =85	Q6 =86	Q7 =86	Q8 =88
Q9 =96	Q10=91	Q11=88	Q12=86	Q13=85	Q14=78	Q15=79	



Photometric Parameters

Luminous Flux: 1812.1 lm Efficiency: 95.93 lm/W Radiant Power: 5.679 W
 Total mains efficacy: 112.81 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 2302.61 Plm Pupil Lumens Per Watt: 121.90 Plm/W Pupil Factor (Kp): 1.271
 Circopic Flux: 4256.68 lm

Electric Parameters

Voltage: 230.70V Current: 0.0820A Power: 18.89W
 Power Factor: 0.8820 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: 45620 (2949) CCD Integration Time: 300.14 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0006	0.0204	525	0.4812	17.8312	670	0.4272	15.8319
385	0.0010	0.0387	530	0.4979	18.4518	675	0.3770	13.9723
390	0.0009	0.0319	535	0.5213	19.3177	680	0.3285	12.1739
395	0.0006	0.0207	540	0.5460	20.2354	685	0.2847	10.5494
400	0.0010	0.0359	545	0.5746	21.2943	690	0.2465	9.1345
405	0.0002	0.0074	550	0.6060	22.4582	695	0.2094	7.7597
410	0.0011	0.0414	555	0.6413	23.7671	700	0.1794	6.6468
415	0.0029	0.1070	560	0.6767	25.0795	705	0.1541	5.7112
420	0.0070	0.2583	565	0.7176	26.5942	710	0.1303	4.8301
425	0.0162	0.5990	570	0.7557	28.0049	715	0.1089	4.0375
430	0.0409	1.5173	575	0.7985	29.5907	720	0.0885	3.2801
435	0.0864	3.2018	580	0.8381	31.0604	725	0.0754	2.7937
440	0.1598	5.9223	585	0.8797	32.5993	730	0.0627	2.3241
445	0.2806	10.4004	590	0.9188	34.0511	735	0.0501	1.8580
450	0.4706	17.4392	595	0.9512	35.2494	740	0.0418	1.5484
455	0.6005	22.2548	600	0.9784	36.2604	745	0.0363	1.3460
460	0.4819	17.8602	605	0.9946	36.8605	750	0.0414	1.5343
465	0.3244	12.0236	610	0.9968	36.9393	755	0.0220	0.8143
470	0.2675	9.9117	615	0.9930	36.7994	760	0.0164	0.6092
475	0.2220	8.2259	620	0.9739	36.0914	765	0.0137	0.5084
480	0.1906	7.0645	625	0.9435	34.9672	770	0.0093	0.3451
485	0.2022	7.4924	630	0.9011	33.3930	775	0.0086	0.3182
490	0.2361	8.7481	635	0.8506	31.5226	780	0.0085	0.3148
495	0.2776	10.2873	640	0.7943	29.4380	785	0.0063	0.2322
500	0.3254	12.0596	645	0.7353	27.2505	790	0.0013	0.0465
505	0.3728	13.8140	650	0.6700	24.8289	795	0.0031	0.1146
510	0.4108	15.2226	655	0.6049	22.4180	800	0.0075	0.2774
515	0.4395	16.2868	660	0.5426	20.1091			
520	0.4613	17.0941	665	0.4834	17.9129			

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

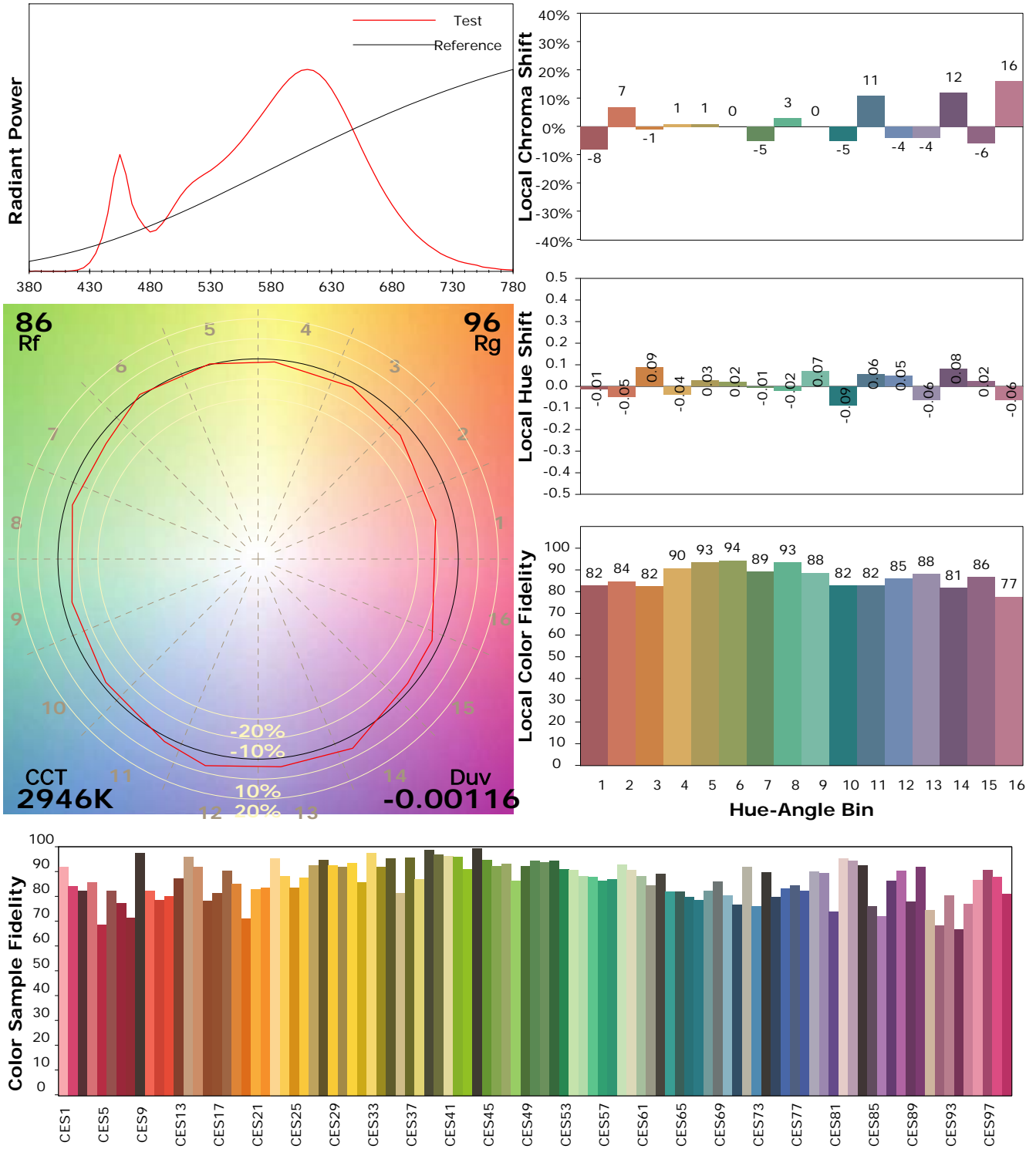
Test Device: Lisun LMS-9000B
 Test Time: 2021-08-12 14:27:37
 Inspector:

IES TM-30-18 Color Rendition Report

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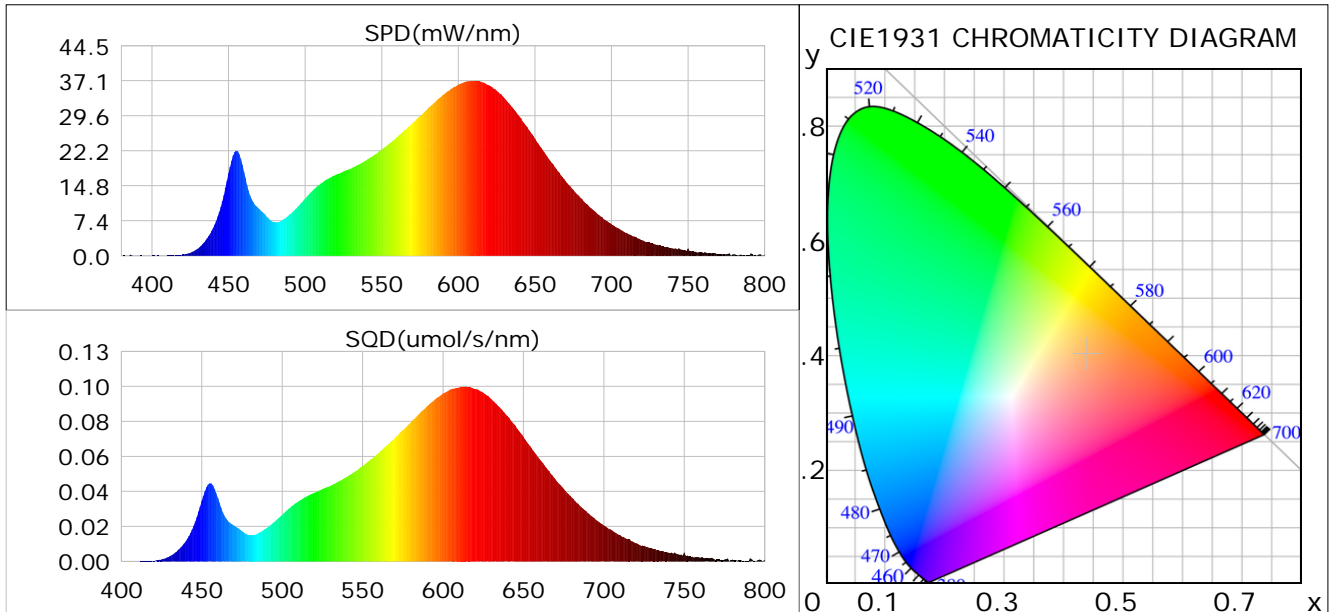
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%
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Plant optical param data

CIE Colorimetric Parameters

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 Dominant Wavelength: 583.5nm Color Purity: 0.524
 CRI: $R_a=86.1$



Plant Optical Param

$ \mu_v(lm)$: 1812.10	$Q_v(lm.s)$: 1812.10
$ \mu_e, \dot{E}(W/nm)$: 5.68	$Q_e(J)$: 5.68
$ \mu_e(W)$: 5.51	$ \mu_{fr}(W)$: 0.18
$ \zeta_e$: 0.29	$ \zeta_{fr}$: 0.01
PPE(umol/s/w): 1.41	Kfr: 0.06
Erb_Ratio: 3.17	PPF(umol/s): 26.72
PFuv(360-400)(umol/s): 0.00	PPF(400-500)(umol/s): 2.92
PPF(500-600)(umol/s): 11.09	PPF(600-700)(umol/s): 12.71
PPfr(700-800)(umol/s): 1.05	PPF.t(umol): 26.72
$ \mu_{ch-A.t}(J)$: 0.44	$ \mu_{ch-A}(W)$: 0.44
$ \mu_{ch-B.t}(J)$: 0.22	$ \mu_{ch-B}(W)$: 0.22
$ \mu_b.t(J)$: 0.75	$ \mu_b(W)$: 0.75
$ \mu_y.t(J)$: 2.39	$ \mu_y(W)$: 2.39
$ \mu_r.t(J)$: 2.42	$ \mu_r(W)$: 2.42

Electric Parameters

Voltage: 230.70V	Current: 0.0820A	Power: 18.89W
Power Factor: 0.8820	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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