

Lightsource Test Report

Product Information

Product Category: LED-Leuchten
 Product Spec: LED-DEL-M-Modul-150-30W-CWM
 Manufacturer: METOLIGHT
 Buyer: 2320
 Product Type: LED-Leuchten-Downlight-Magic
 Product Number: 1
 Submitted Unit: 104255

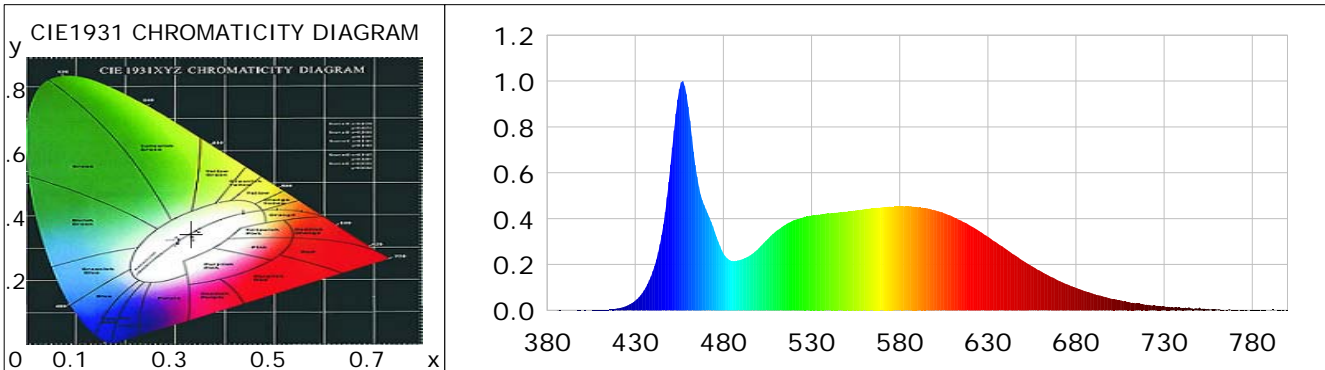
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3329$ $y=0.3449$ $u(u')=0.2057$ $v=0.3197$ $v'=0.4795$
 CCT: $T_c=5484K$ ($duv=0.00176$) Color Ratio: $R=0.154$ $G=0.792$ $B=0.055$
 Peak Wavelength: 456.7nm Half Bandwidth: 19.1nm
 Dominant Wavelength: 552.7nm Color Purity: 0.034
 CRI: $R_a=85.7$, $avgR(1\sim14)=79.7$, $avgR(1\sim15)=79.8$ TM30: $R_f=83$, $R_g=93$
 GAI: $GAI_BB_8=91.8$, $GAI_BB_15=98.3$, $GAI_EES=84.3$

R1 =85	R2 =93	R3 =95	R4 =82	R5 =84	R6 =88	R7 =86	R8 =71
R9 =22	R10=82	R11=82	R12=58	R13=89	R14=98	R15=81	

Color Quality Scale: $Q_a=82.5$, $Q_f=82.6$, $Q_p=81.9$, $Q_g=91.8$

Q1 =82	Q2 =97	Q3 =80	Q4 =72	Q5 =77	Q6 =80	Q7 =86	Q8 =90
Q9 =98	Q10=90	Q11=86	Q12=84	Q13=84	Q14=76	Q15=79	



Photometric Parameters

Luminous Flux: 3158.6 lm Efficiency: 108.25 lm/W Radiant Power: 10.022 W
 Total mains efficacy: 117.88 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 5687.86 Plm Pupil Lumens Per Watt: 194.92 Plm/W Pupil Factor (Kp): 1.801
 Circopic Flux: 12916.88 lm

Electric Parameters

Voltage: 230.00V Current: 0.1300A Power: 29.18W
 Power Factor: 0.8950 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: 46103 (2669) CCD Integration Time: 92.73 ms

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0004	0.0385	525	0.4045	43.2246	670	0.1300	13.8939
385	0.0006	0.0660	530	0.4134	44.1706	675	0.1137	12.1510
390	0.0005	0.0495	535	0.4186	44.7296	680	0.0983	10.5031
395	0.0002	0.0208	540	0.4230	45.1986	685	0.0843	9.0120
400	0.0005	0.0496	545	0.4270	45.6217	690	0.0713	7.6183
405	0.0005	0.0491	550	0.4300	45.9436	695	0.0612	6.5422
410	0.0016	0.1729	555	0.4361	46.6010	700	0.0508	5.4276
415	0.0038	0.4059	560	0.4415	47.1787	705	0.0440	4.6972
420	0.0085	0.9055	565	0.4455	47.6004	710	0.0370	3.9526
425	0.0192	2.0538	570	0.4495	48.0318	715	0.0304	3.2533
430	0.0423	4.5215	575	0.4521	48.3105	720	0.0248	2.6539
435	0.0870	9.2978	580	0.4531	48.4168	725	0.0211	2.2558
440	0.1710	18.2733	585	0.4534	48.4449	730	0.0176	1.8804
445	0.3296	35.2162	590	0.4509	48.1845	735	0.0124	1.3298
450	0.6349	67.8455	595	0.4454	47.5953	740	0.0111	1.1818
455	0.9644	103.0514	600	0.4366	46.6477	745	0.0096	1.0229
460	0.8881	94.8937	605	0.4243	45.3379	750	0.0120	1.2780
465	0.5835	62.3473	610	0.4089	43.6887	755	0.0065	0.6907
470	0.4415	47.1771	615	0.3914	41.8265	760	0.0036	0.3845
475	0.3432	36.6693	620	0.3698	39.5176	765	0.0027	0.2832
480	0.2483	26.5299	625	0.3460	36.9702	770	0.0029	0.3082
485	0.2161	23.0952	630	0.3206	34.2617	775	0.0015	0.1599
490	0.2212	23.6395	635	0.2949	31.5102	780	0.0015	0.1592
495	0.2388	25.5117	640	0.2686	28.6997	785	0.0010	0.1032
500	0.2703	28.8817	645	0.2424	25.9060	790	0.0010	0.1113
505	0.3096	33.0814	650	0.2162	23.1022	795	0.0013	0.1433
510	0.3462	36.9984	655	0.1922	20.5391	800	0.0014	0.1443
515	0.3724	39.7938	660	0.1705	18.2183			
520	0.3932	42.0183	665	0.1491	15.9319			

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

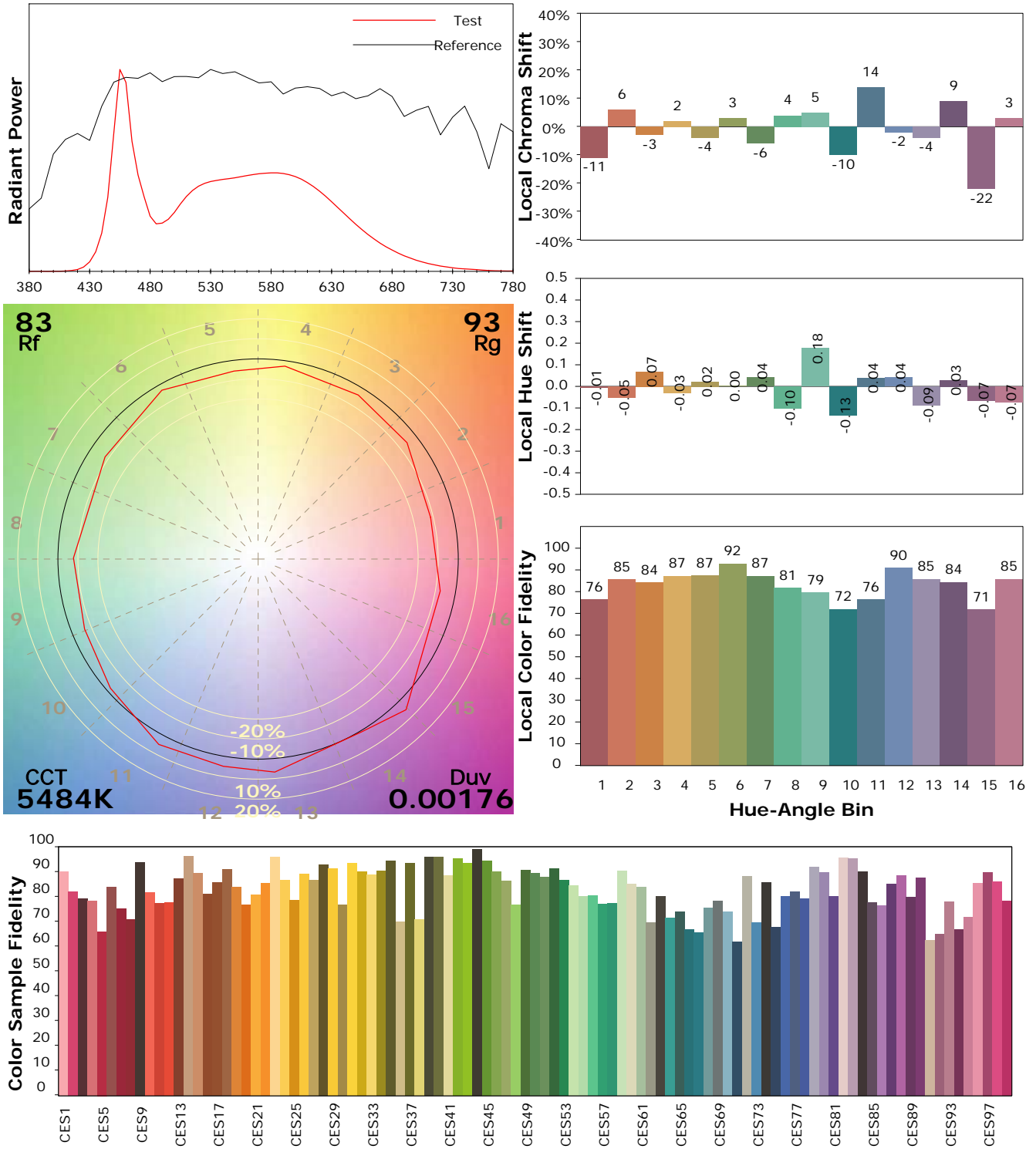
Test Device: Lisun LMS-9000B
 Test Time: 2021-08-12 11:05:50
 Inspector:

IES TM-30-18 Color Rendition Report

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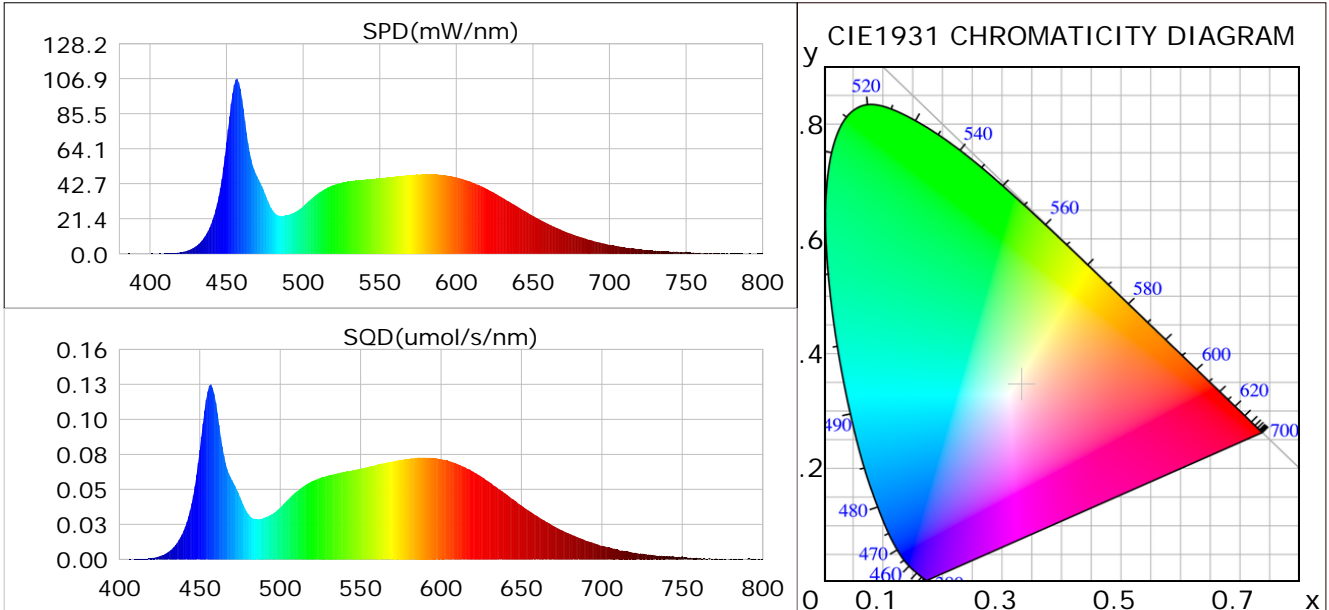
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-08-12 11:05:50
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3329$ $y=0.3449$ $u(u')=0.2057$ $v=0.3197$ $v'=0.4795$
 CCT: $T_c=5484K$ ($duv=0.00176$) Color Ratio: $R=0.154$ $G=0.792$ $B=0.055$
 Peak Wavelength: 456.7nm Half Bandwidth: 19.1nm
 Dominant Wavelength: 552.7nm Color Purity: 0.034
 CRI: $R_a=85.7$



Plant Optical Param

$ \mu_v(lm): 3158.60$	$Q_v(lm.s): 3158.60$
$ \mu_e, \dot{E}(W/nm): 10.02$	$Q_e(J): 10.02$
$ \mu_e(W): 9.88$	$ \mu_{fr}(W): 0.14$
$ \zeta_e: 0.34$	$ \zeta_{fr}: 0.00$
$PPE(umol/s/w): 1.55$	$K_{fr}: 0.03$
$Erb_Ratio: 0.81$	$PPF(umol/s): 45.12$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 11.60$
$PPF(500-600)(umol/s): 20.60$	$PPF(600-700)(umol/s): 12.92$
$PPF_{fr}(700-800)(umol/s): 0.84$	$PPF.t(umol): 45.12$
$ \mu_{ch-A.t}(J): 0.75$	$ \mu_{ch-A}(W): 0.75$
$ \mu_{ch-B.t}(J): 0.57$	$ \mu_{ch-B}(W): 0.57$
$ \mu_b.t(J): 2.99$	$ \mu_b(W): 2.99$
$ \mu_y.t(J): 4.49$	$ \mu_y(W): 4.49$
$ \mu_r.t(J): 2.48$	$ \mu_r(W): 2.48$

Electric Parameters

Voltage: 230.00V	Current: 0.1300A	Power: 29.18W
Power Factor: 0.8950	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: 2021-08-12 11:05:50
 Inspector: