

Lightsource Test Report

Product Information

Product Category: LED-Leuchten
 Product Spec: LED-MML-M9R-20-CW
 Manufacturer: METOLIGHT
 Buyer: 7001

Product Type: LED-Leuchten-Maschineneleuchten
 Product Number: 1
 Submitted Unit: 103823

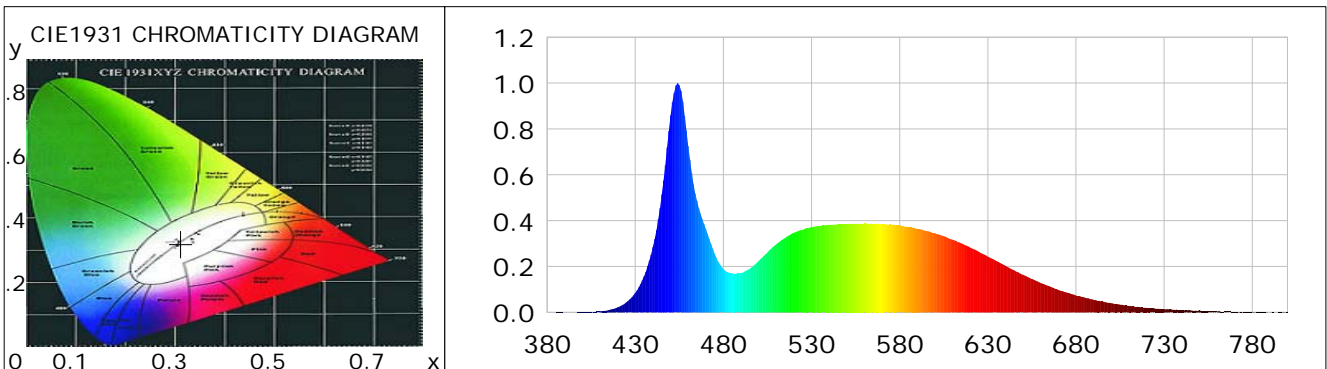
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3115$ $y=0.3201$ $u(u')=0.2004$ $v=0.3089$ $v'=0.4633$
 CCT: $T_c=6652K$ ($duv=-0.00082$) Color Ratio: $R=0.139$ $G=0.805$ $B=0.056$
 Peak Wavelength: 454.0nm Half Bandwidth: 19.8nm
 Dominant Wavelength: 483.5nm Color Purity: 0.085
 CRI: $R_a=84.5$, $avgR(1\sim14)=77.7$, $avgR(1\sim15)=78.0$ TM30: $R_f=81$, $R_g=95$
 GAI: $GAI_BB_8=93.4$, $GAI_BB_15=99.0$, $GAI_EES=91.7$

R1 =84	R2 =89	R3 =89	R4 =84	R5 =83	R6 =82	R7 =89	R8 =75
R9 =23	R10=72	R11=82	R12=53	R13=86	R14=94	R15=83	

Color Quality Scale: $Q_a=79.9$, $Q_f=79.4$, $Q_p=81.6$, $Q_g=93.0$

Q1 =86	Q2 =98	Q3 =74	Q4 =66	Q5 =74	Q6 =79	Q7 =87	Q8 =91
Q9 =94	Q10=84	Q11=79	Q12=79	Q13=81	Q14=75	Q15=79	



Photometric Parameters

Luminous Flux: 2029.8 lm Efficiency: 102.88 lm/W Radiant Power: 6.668 W
 Total mains efficacy: 112.04 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 3827.53 Plm Pupil Lumens Per Watt: 194.00 Plm/W Pupil Factor (Kp): 1.886
 Circopic Flux: 8879.38 lm

Electric Parameters

Voltage: 24.020V Current: 0.8200A Power: 19.73W
 Power Factor: 0.7340 Frequency: 50.00Hz

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: 46065 (2349) CCD Integration Time: 76.82 ms

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

Test Device: Lisun LMS-9000B
 Test Time: 2021-05-27 12:59:54
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0013	0.1068	525	0.3601	29.0227	670	0.0980	7.8998
385	0.0008	0.0657	530	0.3715	29.9363	675	0.0861	6.9412
390	0.0004	0.0335	535	0.3776	30.4329	680	0.0735	5.9256
395	0.0009	0.0743	540	0.3814	30.7341	685	0.0647	5.2168
400	0.0015	0.1203	545	0.3848	31.0123	690	0.0550	4.4294
405	0.0019	0.1547	550	0.3855	31.0636	695	0.0475	3.8307
410	0.0045	0.3660	555	0.3873	31.2119	700	0.0399	3.2131
415	0.0102	0.8246	560	0.3878	31.2545	705	0.0336	2.7096
420	0.0217	1.7505	565	0.3863	31.1341	710	0.0286	2.3055
425	0.0440	3.5489	570	0.3849	31.0142	715	0.0243	1.9560
430	0.0847	6.8289	575	0.3837	30.9185	720	0.0200	1.6154
435	0.1573	12.6725	580	0.3792	30.5597	725	0.0167	1.3483
440	0.2843	22.9086	585	0.3711	29.9062	730	0.0145	1.1703
445	0.5148	41.4873	590	0.3644	29.3697	735	0.0113	0.9080
450	0.8580	69.1472	595	0.3555	28.6522	740	0.0093	0.7501
455	0.9909	79.8493	600	0.3453	27.8289	745	0.0085	0.6844
460	0.7256	58.4765	605	0.3329	26.8274	750	0.0103	0.8261
465	0.4863	39.1931	610	0.3163	25.4922	755	0.0050	0.4048
470	0.3640	29.3356	615	0.3015	24.2995	760	0.0038	0.3044
475	0.2562	20.6457	620	0.2828	22.7881	765	0.0043	0.3439
480	0.1892	15.2486	625	0.2636	21.2460	770	0.0027	0.2148
485	0.1697	13.6771	630	0.2428	19.5645	775	0.0012	0.0978
490	0.1719	13.8514	635	0.2236	18.0166	780	0.0014	0.1131
495	0.1904	15.3435	640	0.2024	16.3147	785	0.0024	0.1924
500	0.2247	18.1114	645	0.1829	14.7421	790	0.0001	0.0056
505	0.2617	21.0930	650	0.1639	13.2066	795	0.0007	0.0604
510	0.2972	23.9505	655	0.1452	11.7038	800	0.0020	0.1588
515	0.3245	26.1500	660	0.1281	10.3269			
520	0.3472	27.9805	665	0.1132	9.1199			

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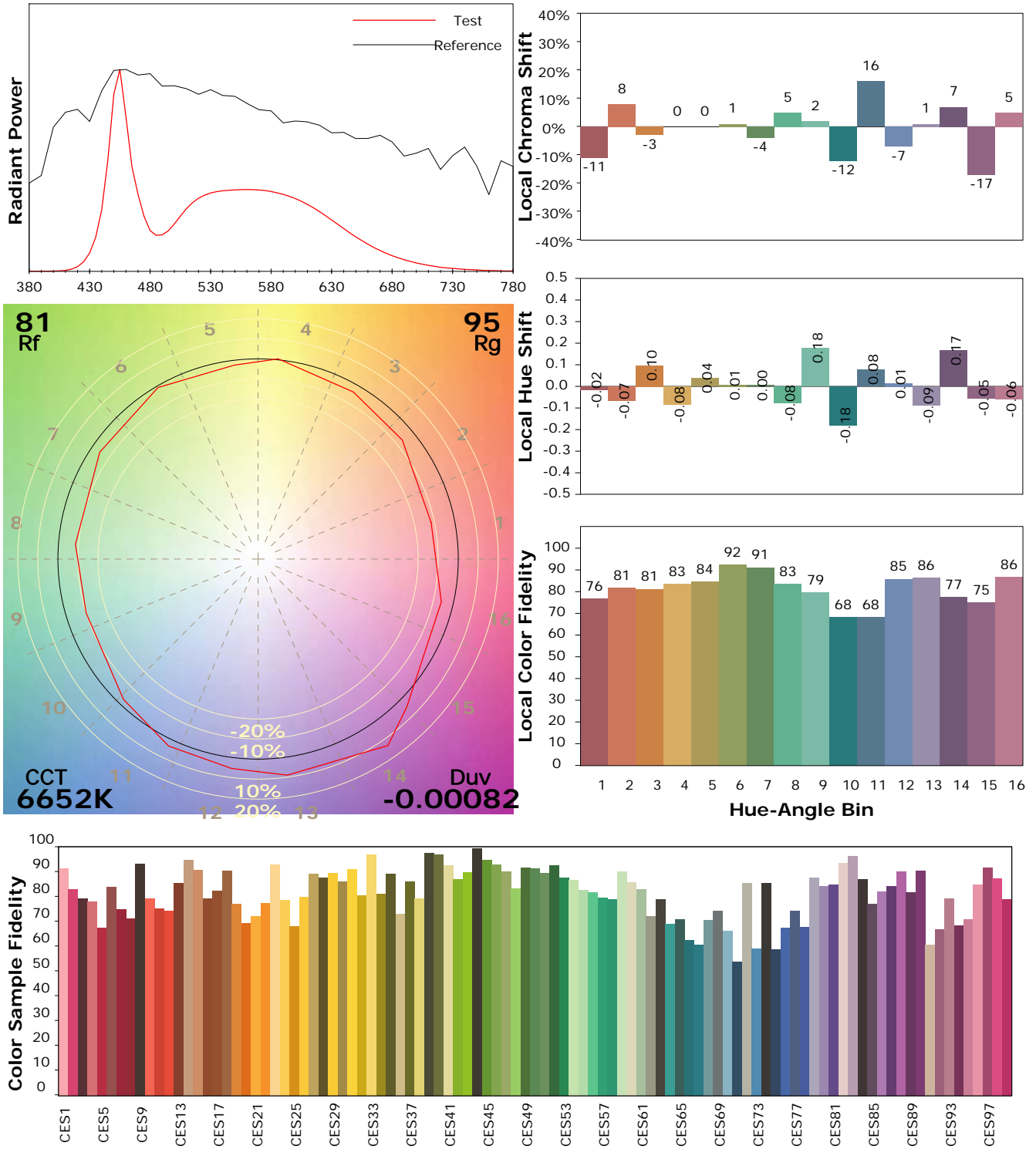
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IES TM-30-18 Color Rendition Report

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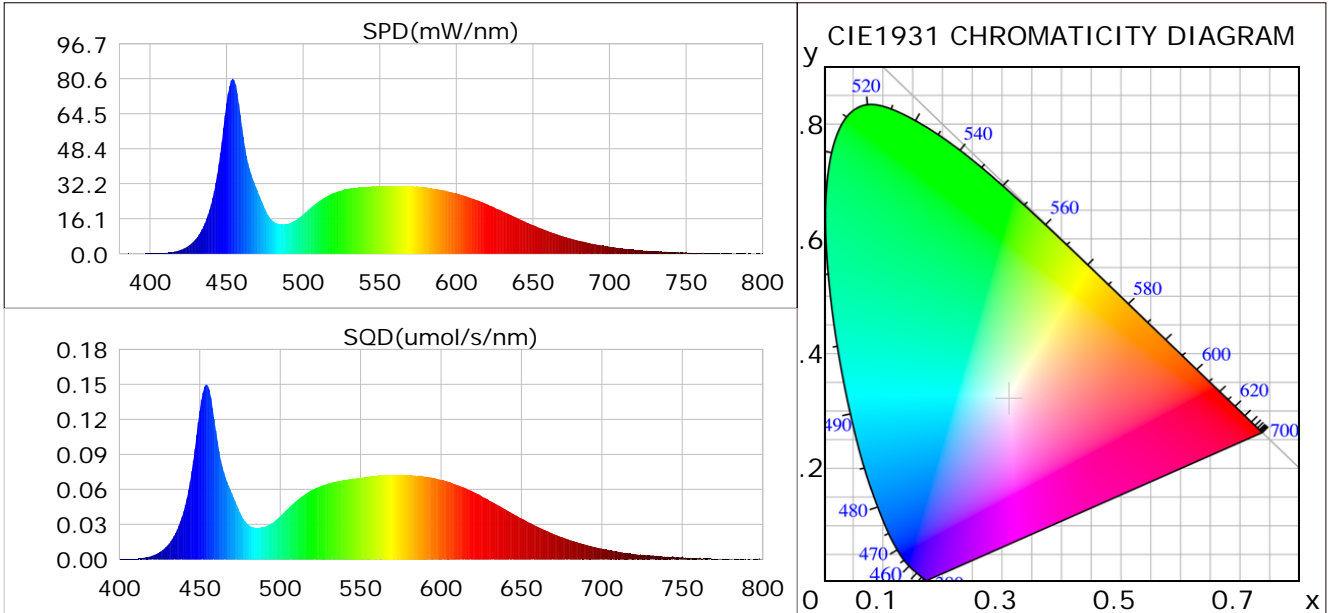
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Plant optical param data

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 Dominant Wavelength: 483.5nm Color Purity: 0.085
 CRI: $R_a=84.5$



Plant Optical Param

$ \mu_v(lm): 2029.80$	$Q_v(lm.s): 2029.80$
$ \mu_e, \dot{E}(W/nm): 6.67$	$Q_e(J): 6.67$
$ \mu_e(W): 6.58$	$ \mu_{fr}(W): 0.09$
$ \zeta_e: 0.33$	$ \zeta_{fr}: 0.00$
$PPE(umol/s/w): 1.50$	$K_{fr}: 0.03$
$Erb_Ratio: 0.62$	$PPF(umol/s): 29.59$
$PF_{uv}(360-400)(umol/s): 0.01$	$PPF(400-500)(umol/s): 8.76$
$PPF(500-600)(umol/s): 13.38$	$PPF(600-700)(umol/s): 7.45$
$PPF_r(700-800)(umol/s): 0.52$	$PPF.t(umol): 29.59$
$ \mu_{ch-A.t}(J): 0.55$	$ \mu_{ch-A}(W): 0.55$
$ \mu_{ch-B.t}(J): 0.40$	$ \mu_{ch-B}(W): 0.40$
$ \mu_b.t(J): 2.28$	$ \mu_b(W): 2.28$
$ \mu_y.t(J): 2.92$	$ \mu_y(W): 2.92$
$ \mu_r.t(J): 1.43$	$ \mu_r(W): 1.43$

Electric Parameters

Voltage: 24.020V	Current: 0.8200A	Power: 19.73W
Power Factor: 0.7340	Frequency: 50.00Hz	

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