

Lightsource Test Report

Product Information

Product Category: LED-Leuchte
 Product Spec: LED-MML-M9T-16-CW
 Manufacturer: METOLIGHT
 Buyer: 7001

Product Type: LED-Maschinenleuchte
 Product Number: 2
 Submitted Unit: 103820

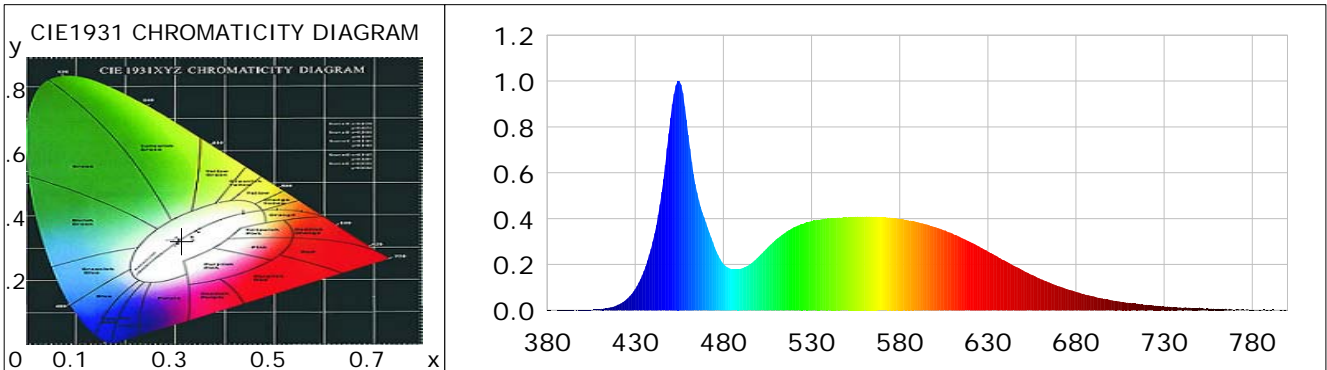
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3133$ $y=0.3228$ $u(u')=0.2006$ $v=0.3100$ $v'=0.4651$
 CCT: $T_c=6520K$ ($duv=-0.00033$) Color Ratio: $R=0.139$ $G=0.805$ $B=0.056$
 Peak Wavelength: 454.5nm Half Bandwidth: 20.7nm
 Dominant Wavelength: 484.7nm Color Purity: 0.076
 CRI: $R_a=84.4$, $avgR(1\sim14)=77.5$, $avgR(1\sim15)=77.8$ TM30: $R_f=81$, $R_g=94$
 GAI: $GAI_BB_8=93.0$, $GAI_BB_15=98.7$, $GAI_EES=90.8$

R1 =84	R2 =89	R3 =90	R4 =83	R5 =83	R6 =82	R7 =89	R8 =74
R9 =22	R10=72	R11=82	R12=54	R13=86	R14=94	R15=82	

Color Quality Scale: $Q_a=80.0$, $Q_f=79.5$, $Q_p=81.4$, $Q_g=92.7$

Q1 =85	Q2 =98	Q3 =74	Q4 =66	Q5 =74	Q6 =79	Q7 =86	Q8 =90
Q9 =94	Q10=85	Q11=79	Q12=80	Q13=81	Q14=75	Q15=79	



Photometric Parameters

Luminous Flux: 1619.6 lm	Efficiency: 101.42 lm/W	Radiant Power: 5.311 W
Total mains efficacy: 110.44 lm/W	Energy Efficiency Class: E (EU 2019/2015)	
Pupil Flux: 3035.40 Plm	Pupil Lumens Per Watt: 190.07 Plm/W	Pupil Factor (Kp): 1.874
Cirtopic Flux: 7016.99 lm		

Electric Parameters

Voltage: 24.010V	Current: 0.6654A	Power: 15.97W
Power Factor: 0.7450	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: 43697 (2401)	CCD Integration Time: 61.63 ms

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: 2021-05-27 13:23:11
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0010	0.0594	525	0.3765	23.0195	670	0.1060	6.4799
385	0.0006	0.0388	530	0.3900	23.8492	675	0.0928	5.6747
390	0.0010	0.0620	535	0.3956	24.1861	680	0.0810	4.9505
395	0.0012	0.0717	540	0.4012	24.5310	685	0.0693	4.2357
400	0.0017	0.1010	545	0.4045	24.7345	690	0.0608	3.7205
405	0.0028	0.1698	550	0.4056	24.7993	695	0.0521	3.1857
410	0.0055	0.3355	555	0.4084	24.9693	700	0.0443	2.7090
415	0.0113	0.6911	560	0.4083	24.9665	705	0.0379	2.3191
420	0.0238	1.4545	565	0.4073	24.9034	710	0.0326	1.9912
425	0.0479	2.9288	570	0.4058	24.8146	715	0.0293	1.7916
430	0.0931	5.6951	575	0.4037	24.6820	720	0.0242	1.4826
435	0.1723	10.5383	580	0.3985	24.3683	725	0.0209	1.2795
440	0.3006	18.3780	585	0.3920	23.9694	730	0.0172	1.0541
445	0.5161	31.5579	590	0.3851	23.5491	735	0.0139	0.8497
450	0.8388	51.2872	595	0.3754	22.9535	740	0.0111	0.6772
455	1.0000	61.1451	600	0.3631	22.2026	745	0.0106	0.6484
460	0.7654	46.8010	605	0.3496	21.3791	750	0.0125	0.7665
465	0.5140	31.4284	610	0.3344	20.4491	755	0.0079	0.4846
470	0.3840	23.4769	615	0.3169	19.3769	760	0.0068	0.4144
475	0.2754	16.8397	620	0.2982	18.2342	765	0.0070	0.4308
480	0.2027	12.3946	625	0.2789	17.0503	770	0.0034	0.2102
485	0.1801	11.0113	630	0.2566	15.6912	775	0.0037	0.2233
490	0.1821	11.1335	635	0.2368	14.4785	780	0.0028	0.1737
495	0.2013	12.3074	640	0.2145	13.1174	785	0.0024	0.1470
500	0.2340	14.3085	645	0.1937	11.8423	790	0.0032	0.1939
505	0.2730	16.6899	650	0.1738	10.6295	795	0.0009	0.0520
510	0.3102	18.9684	655	0.1548	9.4670	800	0.0038	0.2331
515	0.3385	20.6984	660	0.1366	8.3508			
520	0.3623	22.1559	665	0.1209	7.3909			

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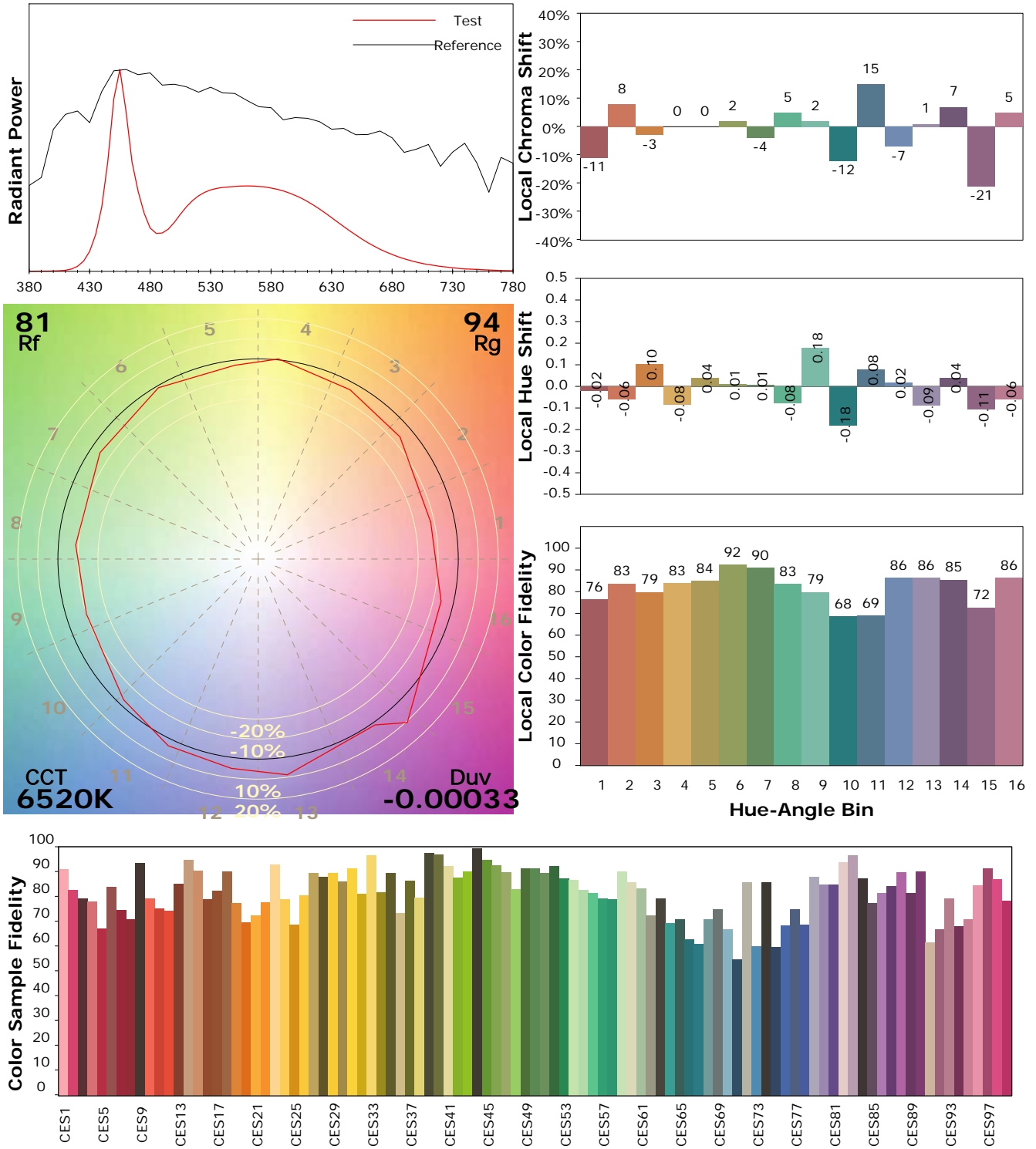
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IES TM-30-18 Color Rendition Report

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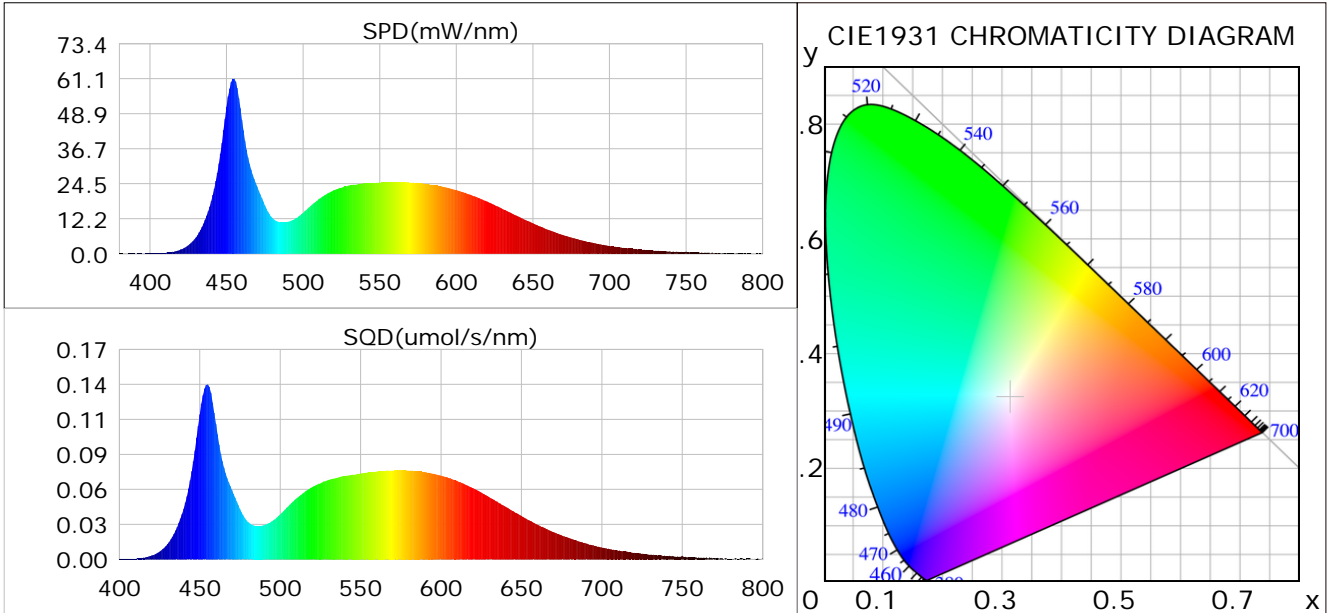
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Plant optical param data

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 CRI: $R_a=84.4$



Plant Optical Param

$ \mu_v(lm): 1619.60$	$Q_v(lm.s): 1619.60$
$ \mu_e, \dot{E}(W/nm): 5.31$	$Q_e(J): 5.31$
$ \mu_e(W): 5.23$	$ \mu_{fr}(W): 0.08$
$ \zeta_e: 0.33$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.47$	$K_{fr}: 0.03$
$Erb_Ratio: 0.63$	$PPF(umol/s): 23.55$
$PF_{uv}(360-400)(umol/s): 0.01$	$PPF(400-500)(umol/s): 6.88$
$PPF(500-600)(umol/s): 10.67$	$PPF(600-700)(umol/s): 6.00$
$PPF_r(700-800)(umol/s): 0.49$	$PPF.t(umol): 23.55$
$ \mu_{ch-A.t}(J): 0.44$	$ \mu_{ch-A}(W): 0.44$
$ \mu_{ch-B.t}(J): 0.32$	$ \mu_{ch-B}(W): 0.32$
$ \mu_b.t(J): 1.79$	$ \mu_b(W): 1.79$
$ \mu_y.t(J): 2.33$	$ \mu_y(W): 2.33$
$ \mu_r.t(J): 1.15$	$ \mu_r(W): 1.15$

Electric Parameters

Voltage: 24.010V	Current: 0.6654A	Power: 15.97W
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