

Lightsource Test Report

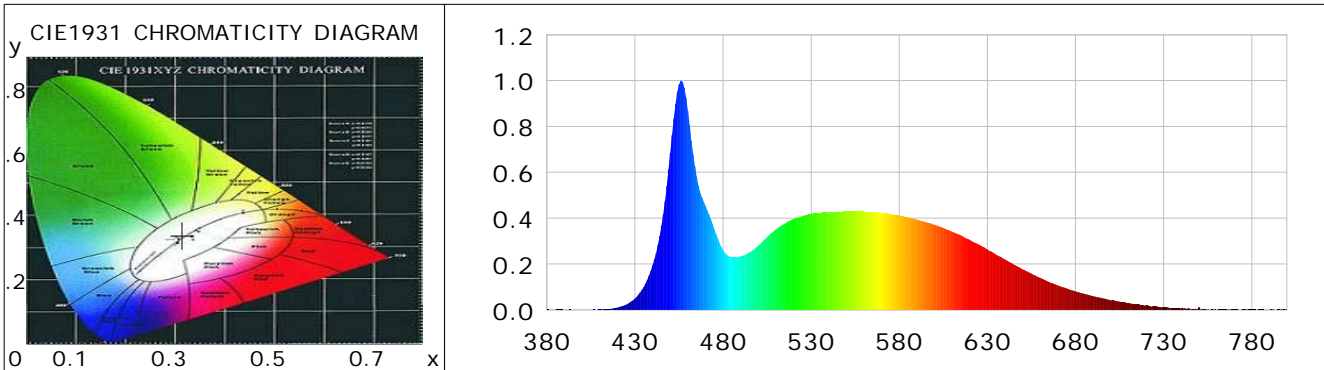
Product Information

Product Category: LED-Maschinenleuchte
 Product Spec: LED-MML-M9R-12-CW
 Manufacturer: METOLIGHT
 Buyer: 7001

Product Type: MML-M9R
 Product Number: 1
 Submitted Unit: 103821

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3149$ $y=0.3388$ $u(u')=0.1957$ $v=0.3159$ $v'=0.4738$
 CCT: $T_c=6330K$ ($duv=0.00710$) Color Ratio: $R=0.135$ $G=0.805$ $B=0.060$
 Peak Wavelength: 456.2nm Half Bandwidth: 20.2nm
 Dominant Wavelength: 495.6nm Color Purity: 0.059
 CRI: $R_a=83.4$, $avgR(1\sim14)=76.3$, $avgR(1\sim15)=76.3$ TM30: $R_f=82$, $R_g=91$
 GAI: $GAI_BB_8=86.6$, $GAI_BB_15=93.4$, $GAI_EES=83.9$
 R1 =82 R2 =91 R3 =94 R4 =79 R5 =81 R6 =85 R7 =87 R8 =69
 R9 =12 R10=76 R11=78 R12=53 R13=85 R14=97 R15=77
 Color Quality Scale: $Q_a=81.5$, $Q_f=81.8$, $Q_p=80.1$, $Q_g=89.3$
 Q1 =80 Q2 =97 Q3 =81 Q4 =72 Q5 =75 Q6 =77 Q7 =83 Q8 =89
 Q9 =97 Q10=91 Q11=86 Q12=85 Q13=85 Q14=73 Q15=77



Photometric Parameters

Luminous Flux: 1231.2 lm Efficiency: 114.00 lm/W Radiant Power: 3.914 W
 Total mains efficacy: 114.00 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 2337.87 Plm Pupil Lumens Per Watt: 216.47 Plm/W Pupil Factor (Kp): 1.899
 Circopic Flux: 5428.26 lm

Electric Parameters

Voltage: 24.020V Current: 0.4500A Power: 10.80W
 Power Factor: 0.7190 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: 46681 (2453) CCD Integration Time: 160.70 ms

Condition: Tx:19.8'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2020-12-11 12:11:03
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0011	0.0493	525	0.4087	17.9740	670	0.1063	4.6745
385	0.0012	0.0513	530	0.4185	18.4076	675	0.0938	4.1241
390	0.0005	0.0229	535	0.4219	18.5581	680	0.0807	3.5477
395	0.0001	0.0044	540	0.4248	18.6853	685	0.0700	3.0785
400	0.0005	0.0222	545	0.4288	18.8612	690	0.0596	2.6211
405	0.0002	0.0092	550	0.4282	18.8332	695	0.0512	2.2532
410	0.0012	0.0507	555	0.4293	18.8815	700	0.0425	1.8702
415	0.0038	0.1682	560	0.4289	18.8626	705	0.0363	1.5952
420	0.0103	0.4537	565	0.4273	18.7954	710	0.0302	1.3303
425	0.0228	1.0048	570	0.4226	18.5855	715	0.0249	1.0962
430	0.0493	2.1691	575	0.4181	18.3894	720	0.0184	0.8073
435	0.0995	4.3751	580	0.4115	18.0987	725	0.0155	0.6830
440	0.1935	8.5094	585	0.4035	17.7490	730	0.0116	0.5115
445	0.3674	16.1597	590	0.3936	17.3094	735	0.0072	0.3147
450	0.6845	30.1044	595	0.3829	16.8408	740	0.0061	0.2674
455	0.9838	43.2690	600	0.3715	16.3413	745	0.0042	0.1864
460	0.8679	38.1714	605	0.3568	15.6938	750	0.0129	0.5670
465	0.5803	25.5213	610	0.3413	15.0095	755	0.0032	0.1422
470	0.4534	19.9398	615	0.3247	14.2798	760	0.0004	0.0166
475	0.3526	15.5062	620	0.3057	13.4471	765	0.0018	0.0795
480	0.2608	11.4727	625	0.2849	12.5299	770	0.0016	0.0684
485	0.2293	10.0858	630	0.2637	11.5986	775	0.0019	0.0828
490	0.2338	10.2852	635	0.2407	10.5878	780	0.0011	0.0463
495	0.2501	10.9995	640	0.2193	9.6449	785	0.0017	0.0734
500	0.2807	12.3461	645	0.1975	8.6883	790	0.0000	0.0009
505	0.3184	14.0058	650	0.1764	7.7575	795	0.0016	0.0720
510	0.3517	15.4695	655	0.1578	6.9401	800	0.0053	0.2320
515	0.3759	16.5314	660	0.1399	6.1550			
520	0.3966	17.4421	665	0.1221	5.3698			

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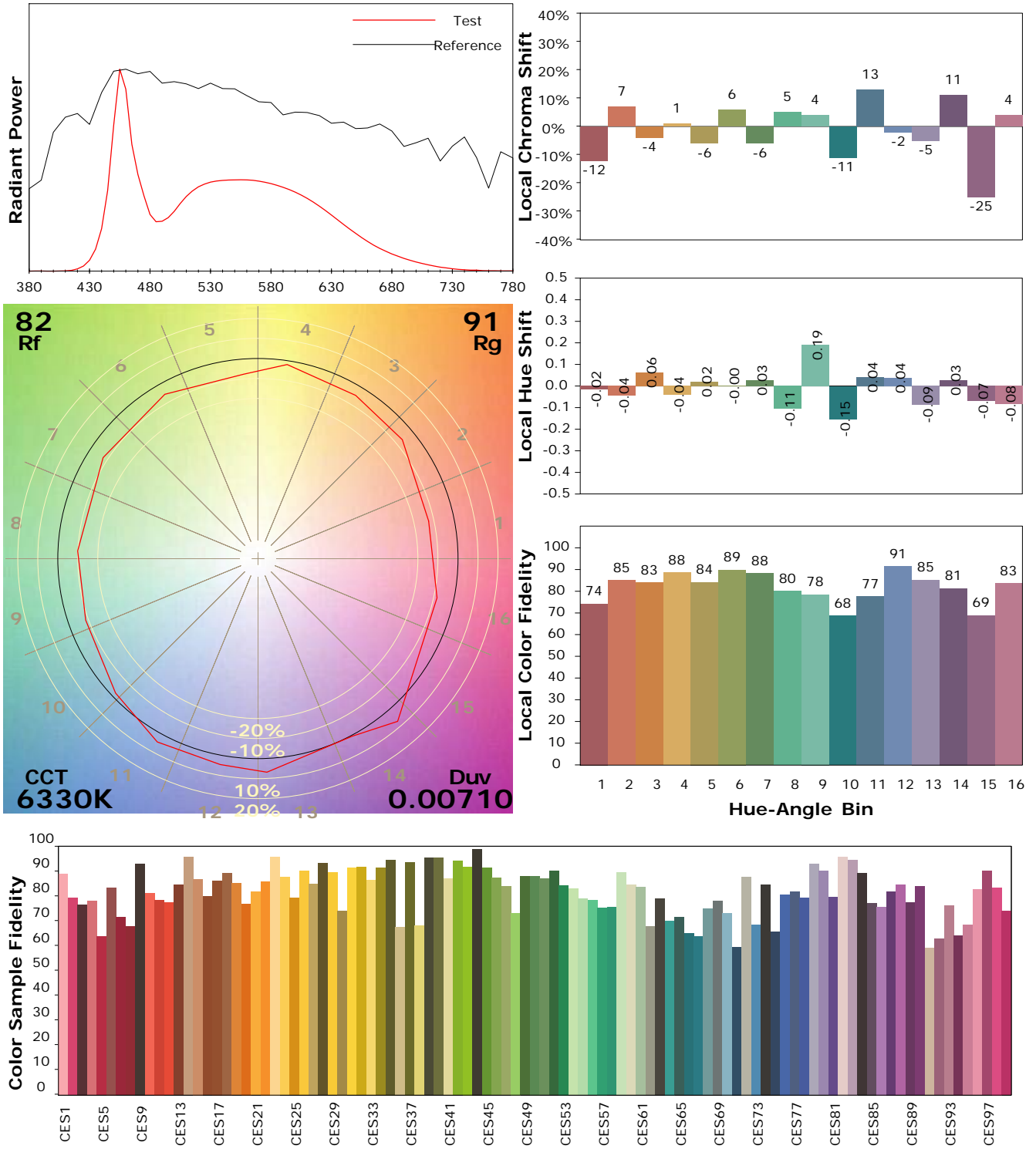
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IES TM-30-18 Color Rendition Report

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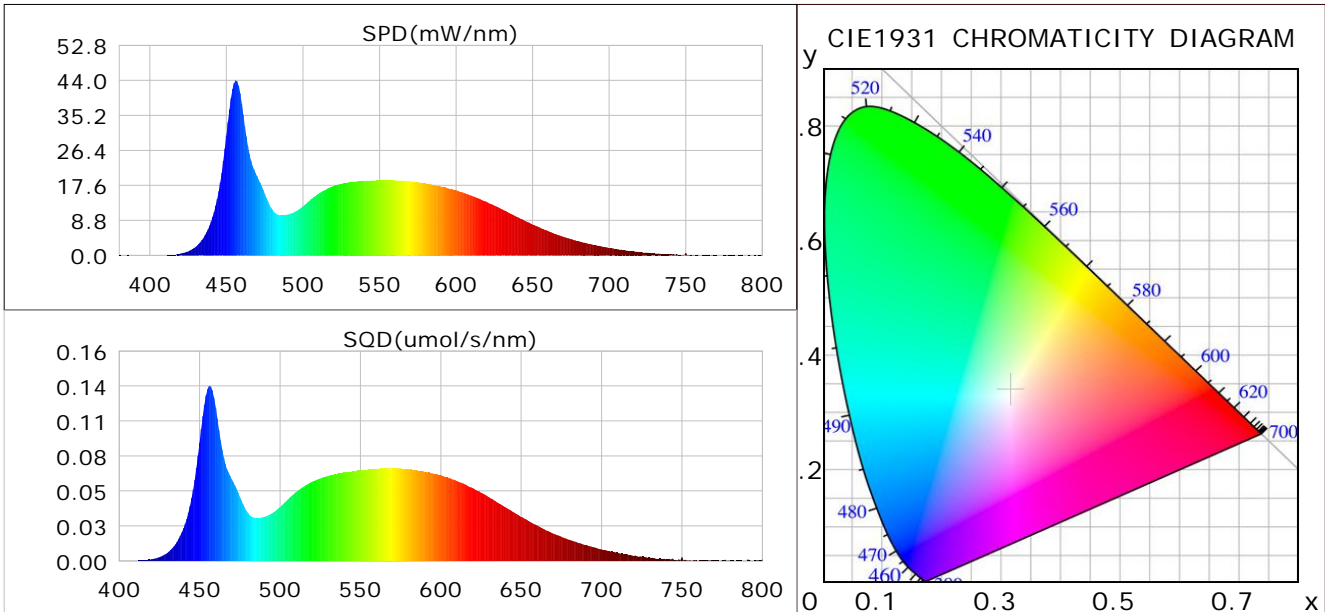
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Plant optical param data

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 CRI: Ra= 83.4



Plant Optical Param

$ \mu_v(lm):$ 1231.23	$Q_v(lm.s):$ 1231.23
$ \mu_e, \dot{E}(W/nm):$ 3.91	$Q_e(J):$ 3.91
$ \mu_e(W):$ 3.87	$ \mu_{fr}(W):$ 0.04
$ \zeta_e:$ 0.36	$ \zeta_{fr}::$ 0.00
$PPE(umol/s/w):$ 1.62	$K_{fr}::$ 0.02
$Erb_Ratio:$ 0.65	$PPF(umol/s):$ 17.49
$PF_{uv}(360-400)(umol/s):$ 0.00	$PPF(400-500)(umol/s):$ 4.95
$PPF(500-600)(umol/s):$ 8.14	$PPF(600-700)(umol/s):$ 4.40
$PF_{fr}(700-800)(umol/s):$ 0.26	$PPF.t(umol):$ 17.49
$ \mu_{ch-A.t}(J):$ 0.29	$ \mu_{ch-A}(W):$ 0.29
$ \mu_{ch-B.t}(J):$ 0.23	$ \mu_{ch-B}(W):$ 0.23
$ \mu_b.t(J):$ 1.28	$ \mu_b(W):$ 1.28
$ \mu_y.t(J):$ 1.78	$ \mu_y(W):$ 1.78
$ \mu_r.t(J):$ 0.84	$ \mu_r(W):$ 0.84

Electric Parameters

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