

Lightsource Test Report

Product Information

Product Category: LED-Technik
 Product Spec: LED-MODUL-110-10-CW
 Manufacturer: METOLIGHT
 Buyer: 5318

Product Type: LED-Technik-Module
 Product Number: 1
 Submitted Unit: 103235

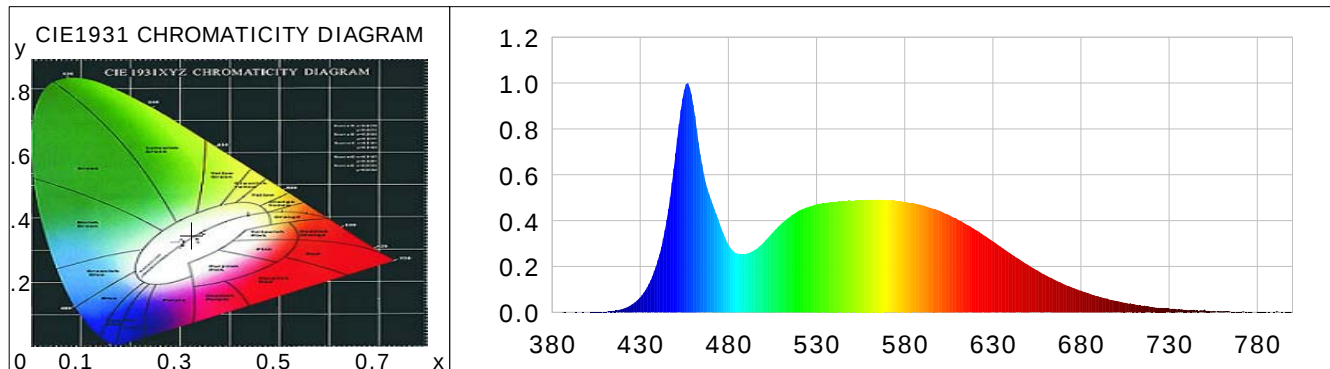
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3236$ $y=0.3469$ $u(u')=0.1986$ $v=0.3195$ $v'=0.4792$
 CCT: $T_c=5888K$ ($duv=0.00698$) Color Ratio: $R=0.139$ $G=0.805$ $B=0.056$
 Peak Wavelength: 456.7nm Half Bandwidth: 22.8nm
 Dominant Wavelength: 511.5nm Color Purity: 0.031
 CRI: $R_a=82.8$, $avgR(1\sim14)=75.5$, $avgR(1\sim15)=75.5$ TM30: $R_f=82$, $R_g=91$
 GAI: $GAI_BB_8=86.3$, $GAI_BB_15=93.1$, $GAI_EES=81.6$

R1 = 81	R2 = 90	R3 = 94	R4 = 78	R5 = 80	R6 = 85	R7 = 86	R8 = 67
R9 = 7	R10 = 75	R11 = 77	R12 = 55	R13 = 84	R14 = 97	R15 = 76	

Color Quality Scale: $Q_a=81.1$, $Q_f=81.5$, $Q_p=79.5$, $Q_g=89.1$

Q1 = 80	Q2 = 97	Q3 = 81	Q4 = 72	Q5 = 75	Q6 = 77	Q7 = 83	Q8 = 89
Q9 = 97	Q10 = 90	Q11 = 86	Q12 = 85	Q13 = 84	Q14 = 72	Q15 = 76	



Photometric Parameters

Luminous Flux: 1050.5 lm	Efficiency: 103.80 lm/W	Radiant Power: 3.289 W
Total mains efficacy: 113.04 lm/W	Energy Efficiency Class: E (EU 2019/2015)	
Pupil Flux: 1932.69 Plm	Pupil Lumens Per Watt: 190.98 Plm/W	Pupil Factor (Kp): 1.840
Cirtpic Flux: 4407.96 lm		

Electric Parameters

Voltage: 231.00V	Current: 0.0440A	Power: 10.12W
Power Factor: 0.5720	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: 43573 (2740)	CCD Integration Time: 93.41 ms

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

Test Device: Lisun LMS-9000B
 Test Time: 2021-08-16 11:54:32
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0030	525	0.4580	15.0022	670	0.1241	4.0659
385	0.0004	0.0142	530	0.4711	15.4331	675	0.1087	3.5607
390	0.0005	0.0172	535	0.4772	15.6319	680	0.0943	3.0905
395	0.0004	0.0147	540	0.4810	15.7581	685	0.0809	2.6496
400	0.0006	0.0192	545	0.4854	15.9011	690	0.0691	2.2651
405	0.0010	0.0321	550	0.4872	15.9606	695	0.0594	1.9458
410	0.0029	0.0941	555	0.4899	16.0468	700	0.0488	1.5996
415	0.0071	0.2332	560	0.4910	16.0827	705	0.0423	1.3850
420	0.0150	0.4916	565	0.4915	16.0989	710	0.0360	1.1777
425	0.0328	1.0757	570	0.4891	16.0224	715	0.0289	0.9460
430	0.0658	2.1552	575	0.4872	15.9583	720	0.0234	0.7650
435	0.1243	4.0717	580	0.4824	15.8015	725	0.0199	0.6535
440	0.2272	7.4439	585	0.4757	15.5842	730	0.0174	0.5702
445	0.4042	13.2419	590	0.4670	15.2991	735	0.0125	0.4082
450	0.6938	22.7280	595	0.4551	14.9075	740	0.0111	0.3649
455	0.9705	31.7929	600	0.4421	14.4810	745	0.0082	0.2678
460	0.9048	29.6381	605	0.4246	13.9094	750	0.0122	0.3981
465	0.6461	21.1639	610	0.4050	13.2656	755	0.0063	0.2061
470	0.4941	16.1859	615	0.3838	12.5738	760	0.0045	0.1467
475	0.3872	12.6839	620	0.3609	11.8219	765	0.0022	0.0734
480	0.2959	9.6938	625	0.3352	10.9799	770	0.0027	0.0894
485	0.2563	8.3967	630	0.3098	10.1488	775	0.0029	0.0964
490	0.2552	8.3610	635	0.2823	9.2485	780	0.0028	0.0914
495	0.2726	8.9284	640	0.2568	8.4108	785	0.0026	0.0860
500	0.3048	9.9856	645	0.2312	7.5723	790	0.0010	0.0333
505	0.3463	11.3428	650	0.2069	6.7775	795	0.0002	0.0071
510	0.3872	12.6824	655	0.1838	6.0209	800	0.0040	0.1310
515	0.4174	13.6739	660	0.1619	5.3036			
520	0.4433	14.5231	665	0.1420	4.6508			

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 Operator: CRE

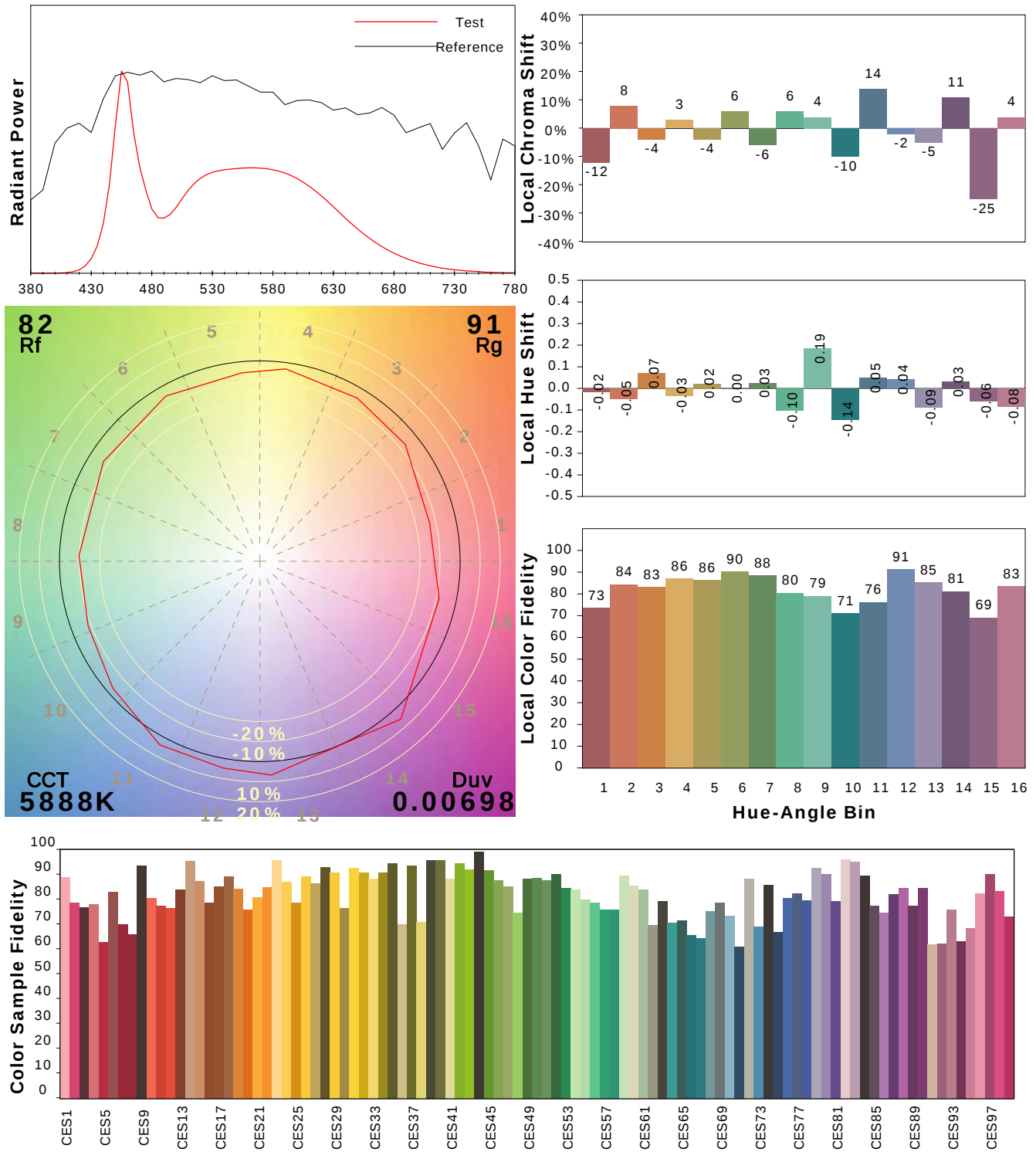
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IES TM-30-18 Color Rendition Report

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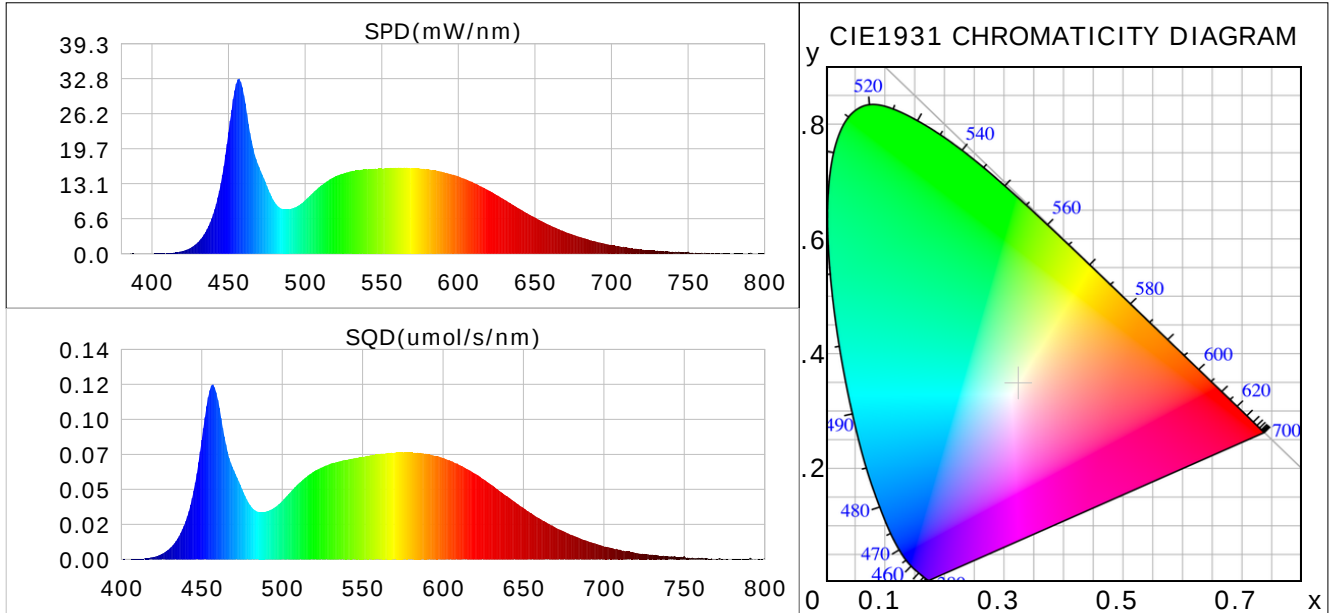
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Plant optical param data

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 CRI: Ra= 82.8



Plant Optical Param

$\mu_v(lm): 1050.50$	$Q_v(lm.s): 1050.50$
$\mu_e, \dot{E}(W/nm): 3.29$	$Q_e(J): 3.29$
$\mu_e(W): 3.25$	$\mu_{fr}(W): 0.04$
$\dot{C}_e: 0.32$	$\dot{C}_{fr}: 0.00$
$PPE(umol/s/w): 1.46$	$K_{fr}: 0.02$
$Erb_Ratio: 0.71$	$PPF(umol/s): 14.73$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 3.95$
$PPF(500-600)(umol/s): 6.94$	$PPF(600-700)(umol/s): 3.84$
$PF_{fr}(700-800)(umol/s): 0.25$	$PPF.t(umol): 14.73$
$\mu_{ch-A.t}(J): 0.25$	$\mu_{ch-A}(W): 0.25$
$\mu_{ch-B.t}(J): 0.19$	$\mu_{ch-B}(W): 0.19$
$\mu_{b.t}(J): 1.02$	$\mu_b(W): 1.02$
$\mu_{y.t}(J): 1.51$	$\mu_y(W): 1.51$
$\mu_{r.t}(J): 0.74$	$\mu_r(W): 0.74$

Electric Parameters

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Power Factor: 0.5720	Frequency: 49.99Hz	