

Lightsource Test Report

Product Information

Product Category: LED-Technik
 Product Spec: LED-Modul-180-20-WW-DALI
 Manufacturer: METOLIGHT
 Buyer: 6004

Product Type: LED-Technik-LED-Module
 Product Number: 1
 Submitted Unit: 103140

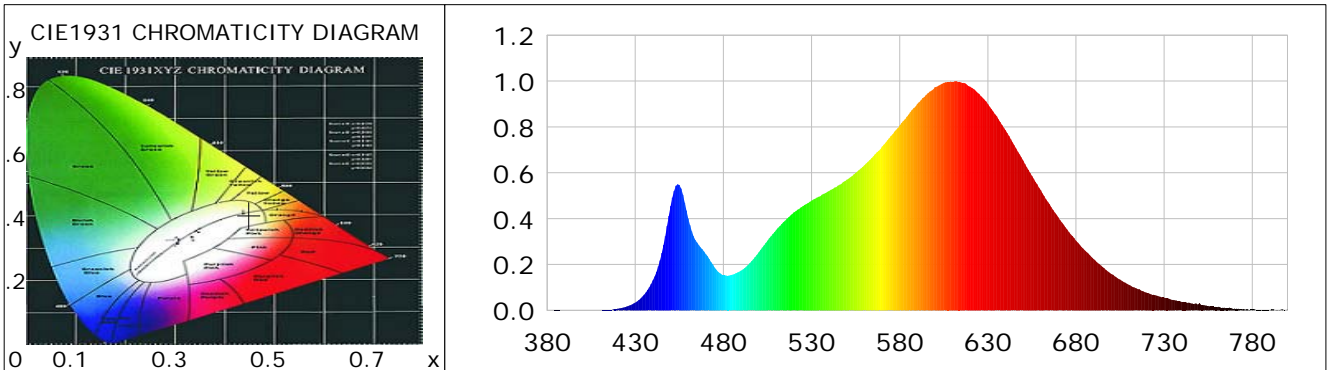
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.4493$ $y=0.4036$ $u(u')=0.2588$ $v=0.3487$ $v'=0.5231$
 CCT: $T_c=2799K$ ($duv=-0.00166$) Color Ratio: $R=0.249$ $G=0.728$ $B=0.023$
 Peak Wavelength: 611.8nm Half Bandwidth: 126.6nm
 Dominant Wavelength: 584.3nm Color Purity: 0.560
 CRI: $R_a=85.0$, $avgR(1\sim14)=80.3$, $avgR(1\sim15)=80.1$ TM30: $R_f=85$, $R_g=97$
 GAI: $GAI_BB_8=100.5$, $GAI_BB_15=108.9$, $GAI_EES=51.9$

R1 =84	R2 =93	R3 =97	R4 =83	R5 =84	R6 =92	R7 =83	R8 =64
R9 =21	R10=83	R11=83	R12=72	R13=86	R14=99	R15=78	

Color Quality Scale: $Q_a=83.6$, $Q_f=84.9$, $Q_p=86.9$, $Q_g=93.8$

Q1 =81	Q2 =95	Q3 =82	Q4 =80	Q5 =84	Q6 =85	Q7 =84	Q8 =85
Q9 =96	Q10=90	Q11=87	Q12=85	Q13=84	Q14=76	Q15=77	



Photometric Parameters

Luminous Flux: 2114.4 lm	Efficiency: 105.72 lm/W	Radiant Power: 6.560 W
Total mains efficacy: 115.13 lm/W	Energy Efficiency Class: E (EU 2019/2015)	
Pupil Flux: 2555.91 Plm	Pupil Lumens Per Watt: 127.80 Plm/W	Pupil Factor (Kp): 1.209
Cirtopic Flux: 4576.45 lm		

Electric Parameters

Voltage: 231.40V	Current: 0.0900A	Power: 20.00W
Power Factor: 0.9590	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: 44063 (2812)	CCD Integration Time: 131.54 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 15:42:04
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0006	0.0267	525	0.4538	20.5407	670	0.4060	18.3764
385	0.0009	0.0385	530	0.4786	21.6635	675	0.3526	15.9598
390	0.0005	0.0234	535	0.4984	22.5590	680	0.3039	13.7538
395	0.0001	0.0064	540	0.5210	23.5824	685	0.2615	11.8355
400	0.0006	0.0256	545	0.5439	24.6166	690	0.2236	10.1192
405	0.0001	0.0056	550	0.5699	25.7947	695	0.1896	8.5817
410	0.0005	0.0222	555	0.5994	27.1329	700	0.1586	7.1791
415	0.0029	0.1291	560	0.6331	28.6557	705	0.1341	6.0715
420	0.0074	0.3369	565	0.6717	30.4045	710	0.1116	5.0502
425	0.0167	0.7563	570	0.7142	32.3271	715	0.0932	4.2204
430	0.0336	1.5227	575	0.7606	34.4285	720	0.0774	3.5014
435	0.0681	3.0806	580	0.8069	36.5245	725	0.0659	2.9844
440	0.1307	5.9167	585	0.8535	38.6343	730	0.0560	2.5346
445	0.2499	11.3122	590	0.9007	40.7677	735	0.0459	2.0760
450	0.4546	20.5785	595	0.9401	42.5537	740	0.0367	1.6601
455	0.5468	24.7495	600	0.9732	44.0522	745	0.0312	1.4107
460	0.4010	18.1518	605	0.9924	44.9182	750	0.0316	1.4320
465	0.2963	13.4102	610	0.9966	45.1109	755	0.0194	0.8790
470	0.2456	11.1185	615	0.9935	44.9687	760	0.0141	0.6393
475	0.1871	8.4674	620	0.9754	44.1478	765	0.0098	0.4447
480	0.1535	6.9470	625	0.9441	42.7347	770	0.0081	0.3650
485	0.1553	7.0288	630	0.8996	40.7185	775	0.0059	0.2663
490	0.1733	7.8432	635	0.8469	38.3352	780	0.0047	0.2125
495	0.2063	9.3388	640	0.7855	35.5559	785	0.0032	0.1449
500	0.2530	11.4523	645	0.7198	32.5788	790	0.0006	0.0250
505	0.3043	13.7717	650	0.6537	29.5868	795	0.0013	0.0584
510	0.3517	15.9190	655	0.5865	26.5478	800	0.0042	0.1920
515	0.3916	17.7251	660	0.5243	23.7317			
520	0.4275	19.3511	665	0.4634	20.9751			

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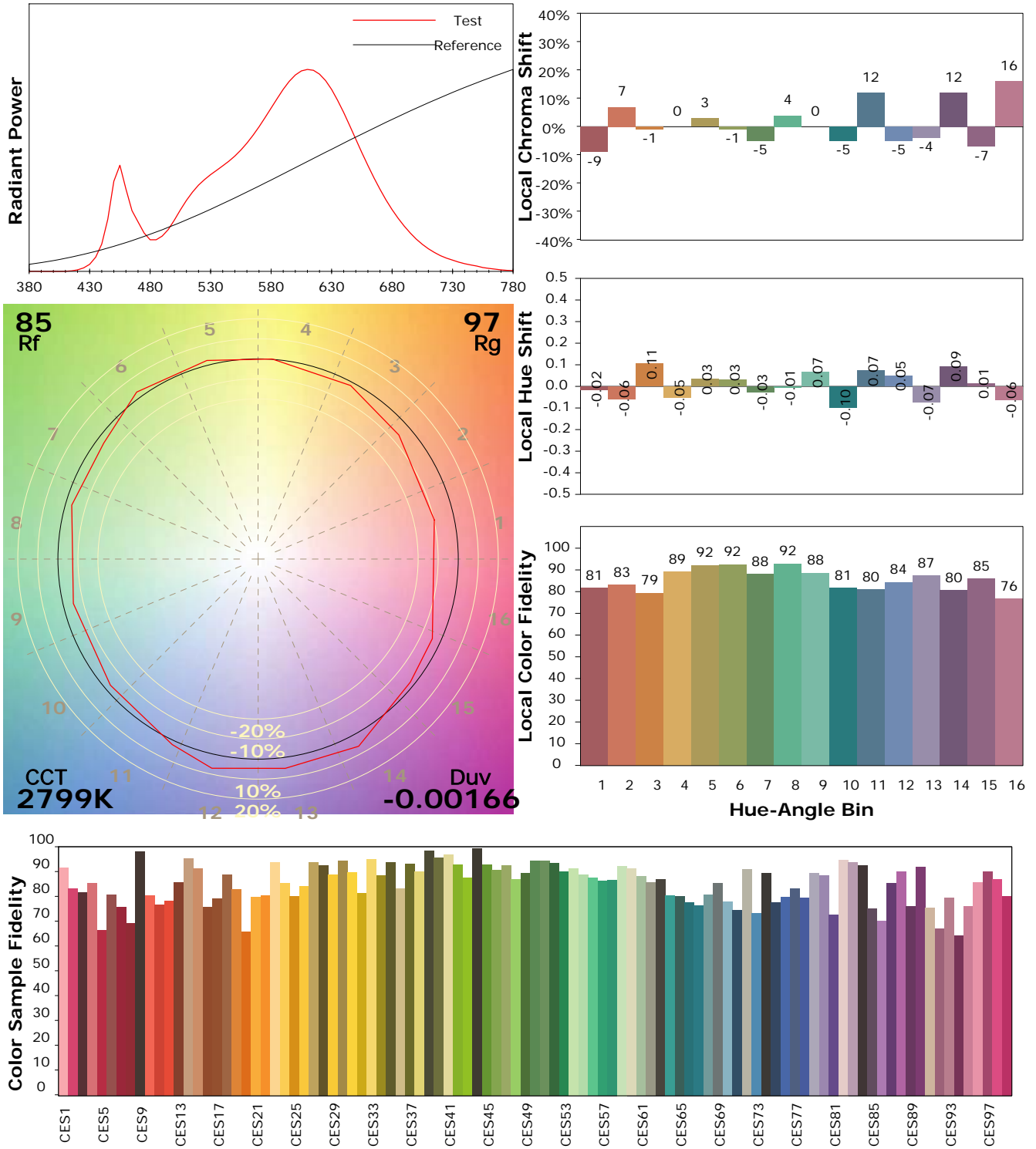
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IES TM-30-18 Color Rendition Report

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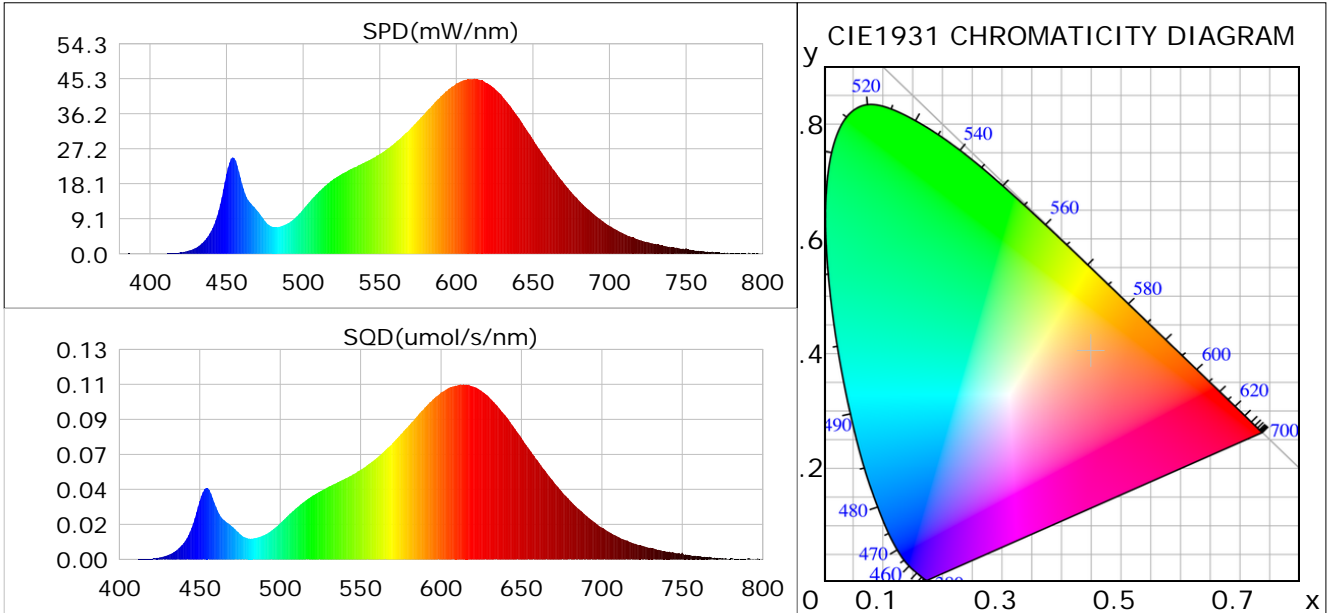
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Plant optical param data

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 CRI: $R_a=85.0$



Plant Optical Param

$ \mu_v(lm): 2114.40$	$Q_v(lm.s): 2114.40$
$ \mu_e, \dot{E}(W/nm): 6.56$	$Q_e(J): 6.56$
$ \mu_e(W): 6.38$	$ \mu_{fr}(W): 0.19$
$ \zeta_e: 0.32$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.55$	$K_{fr}: 0.06$
$Erb_Ratio: 3.63$	$PPF(umol/s): 31.06$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 3.05$
$PPF(500-600)(umol/s): 12.82$	$PPF(600-700)(umol/s): 15.19$
$PPF_r(700-800)(umol/s): 1.11$	$PPF.t(umol): 31.06$
$ \mu_{ch-A.t}(J): 0.51$	$ \mu_{ch-A}(W): 0.51$
$ \mu_{ch-B.t}(J): 0.25$	$ \mu_{ch-B}(W): 0.25$
$ \mu_b.t(J): 0.79$	$ \mu_b(W): 0.79$
$ \mu_y.t(J): 2.75$	$ \mu_y(W): 2.75$
$ \mu_r.t(J): 2.90$	$ \mu_r(W): 2.90$

Electric Parameters

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Power Factor: 0.9590	Frequency: 49.99Hz	

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