

Lightsource Test Report

Product Information

Product Category: LED-Leuchten Product Type: LED-Leuchten-Downlight-Magic
 Product Spec: LED-DEL-M-Modull-160-190-30S-NWM Product Number: 1
 Manufacturer: METOLIGHT Submitted Unit: 104228
 Buyer: 2320

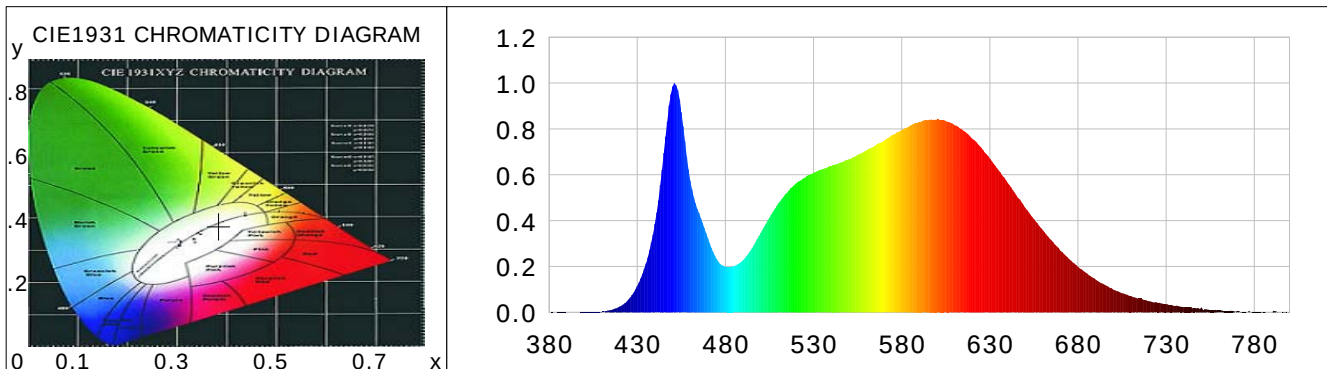
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3843$ $y=0.3759$ $u(u')=0.2280$ $v=0.3345$ $v'=0.5018$
 CCT: $T_c=3890K$ ($duv=-0.00152$) Color Ratio: $R=0.190$ $G=0.777$ $B=0.032$
 Peak Wavelength: 451.1nm Half Bandwidth: 19.9nm
 Dominant Wavelength: 580.3nm Color Purity: 0.281
 CRI: $R_a=83.8$, $avgR(1\sim14)=77.4$, $avgR(1\sim15)=77.4$ TM30: $R_f=83$, $R_g=97$
 GAI: $GAI_BB_8=96.6$, $GAI_BB_15=103.3$, $GAI_EES=74.4$

R1 =83	R2 =89	R3 =93	R4 =84	R5 =83	R6 =85	R7 =86	R8 =67
R9 =16	R10=73	R11=83	R12=61	R13=85	R14=96	R15=78	

Color Quality Scale: $Q_a=82.8$, $Q_f=82.4$, $Q_p=84.0$, $Q_g=94.9$

Q1 =83	Q2 =98	Q3 =77	Q4 =75	Q5 =82	Q6 =84	Q7 =85	Q8 =89
Q9 =97	Q10=87	Q11=84	Q12=84	Q13=84	Q14=75	Q15=78	



Photometric Parameters

Luminous Flux: 3074.7 lm Efficiency: 110.01 lm/W Radiant Power: 9.313 W
 Total mains efficacy: 119.80 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 4530.78 Plm Pupil Lumens Per Watt: 162.10 Plm/W Pupil Factor (Kp): 1.474
 Cirtopic Flux: 9040.88 lm

Electric Parameters

Voltage: 231.30V Current: 0.1330A Power: 27.95W
 Power Factor: 0.9030 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: 43791 (2786) CCD Integration Time: 110.02 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 15:17:16
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0005	0.0314	525	0.5864	37.3706	670	0.2694	17.1704
385	0.0007	0.0448	530	0.6081	38.7545	675	0.2321	14.7943
390	0.0006	0.0391	535	0.6237	39.7468	680	0.1987	12.6655
395	0.0002	0.0140	540	0.6370	40.5942	685	0.1699	10.8256
400	0.0008	0.0511	545	0.6531	41.6179	690	0.1425	9.0790
405	0.0007	0.0471	550	0.6679	42.5658	695	0.1203	7.6685
410	0.0037	0.2352	555	0.6869	43.7761	700	0.0996	6.3483
415	0.0104	0.6623	560	0.7062	45.0067	705	0.0834	5.3171
420	0.0252	1.6035	565	0.7268	46.3162	710	0.0715	4.5579
425	0.0559	3.5615	570	0.7490	47.7302	715	0.0606	3.8607
430	0.1155	7.3607	575	0.7744	49.3518	720	0.0494	3.1484
435	0.2134	13.5985	580	0.7953	50.6804	725	0.0427	2.7233
440	0.3863	24.6161	585	0.8151	51.9435	730	0.0362	2.3081
445	0.6950	44.2914	590	0.8311	52.9618	735	0.0282	1.7945
450	0.9855	62.8027	595	0.8389	53.4637	740	0.0228	1.4525
455	0.8727	55.6130	600	0.8417	53.6388	745	0.0180	1.1495
460	0.5749	36.6364	605	0.8347	53.1971	750	0.0212	1.3509
465	0.4333	27.6159	610	0.8158	51.9870	755	0.0103	0.6580
470	0.3252	20.7213	615	0.7924	50.5013	760	0.0089	0.5643
475	0.2325	14.8184	620	0.7575	48.2741	765	0.0062	0.3976
480	0.1993	12.6991	625	0.7191	45.8285	770	0.0042	0.2688
485	0.2015	12.8432	630	0.6704	42.7215	775	0.0025	0.1621
490	0.2273	14.4843	635	0.6189	39.4412	780	0.0020	0.1245
495	0.2784	17.7441	640	0.5656	36.0445	785	0.0019	0.1191
500	0.3468	22.0978	645	0.5104	32.5301	790	0.0001	0.0035
505	0.4133	26.3376	650	0.4563	29.0803	795	0.0002	0.0145
510	0.4757	30.3144	655	0.4065	25.9062	800	0.0024	0.1550
515	0.5221	33.2714	660	0.3588	22.8677			
520	0.5617	35.7945	665	0.3140	20.0107			

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IES TM-30-18 Color Rendition Report

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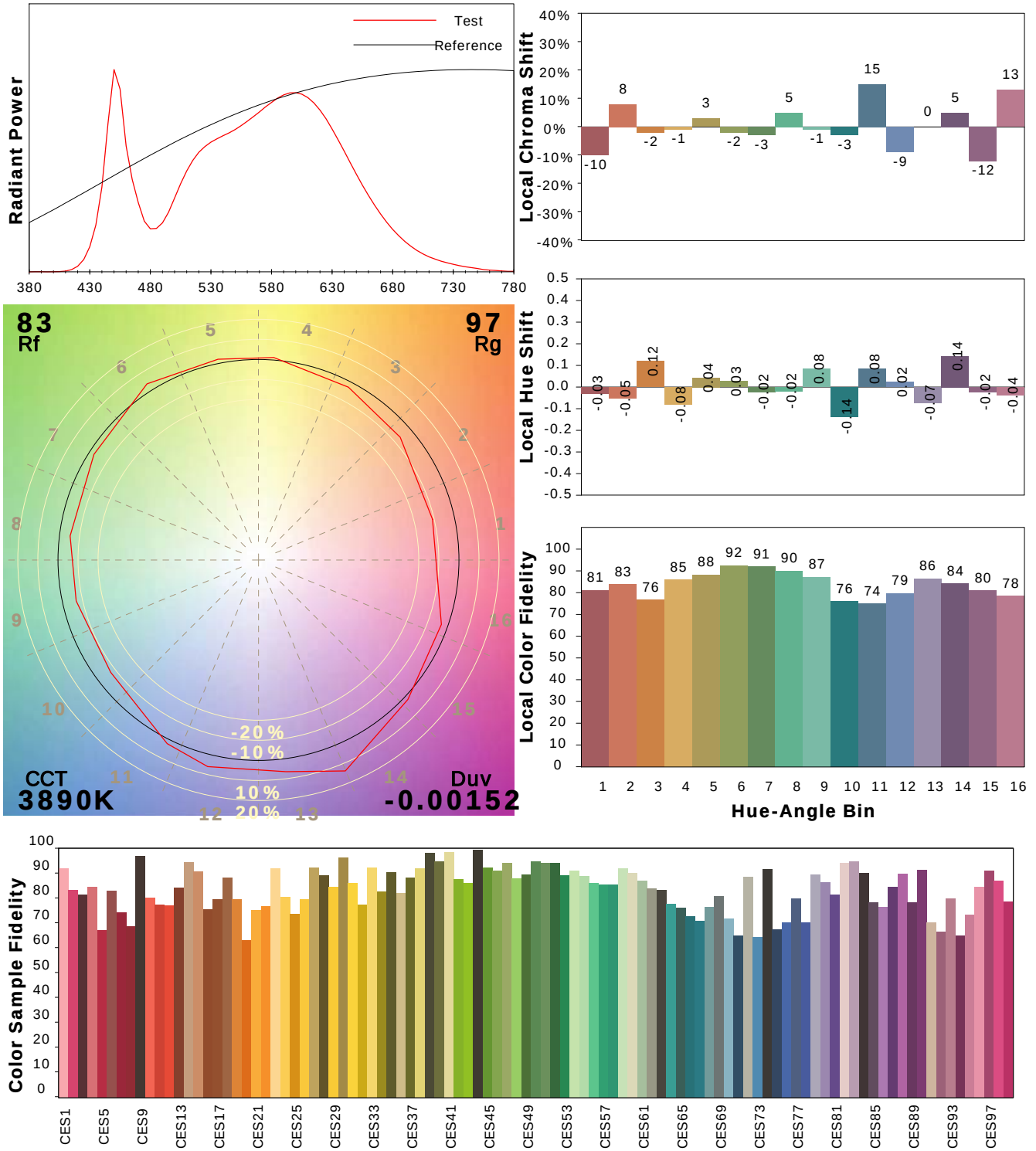
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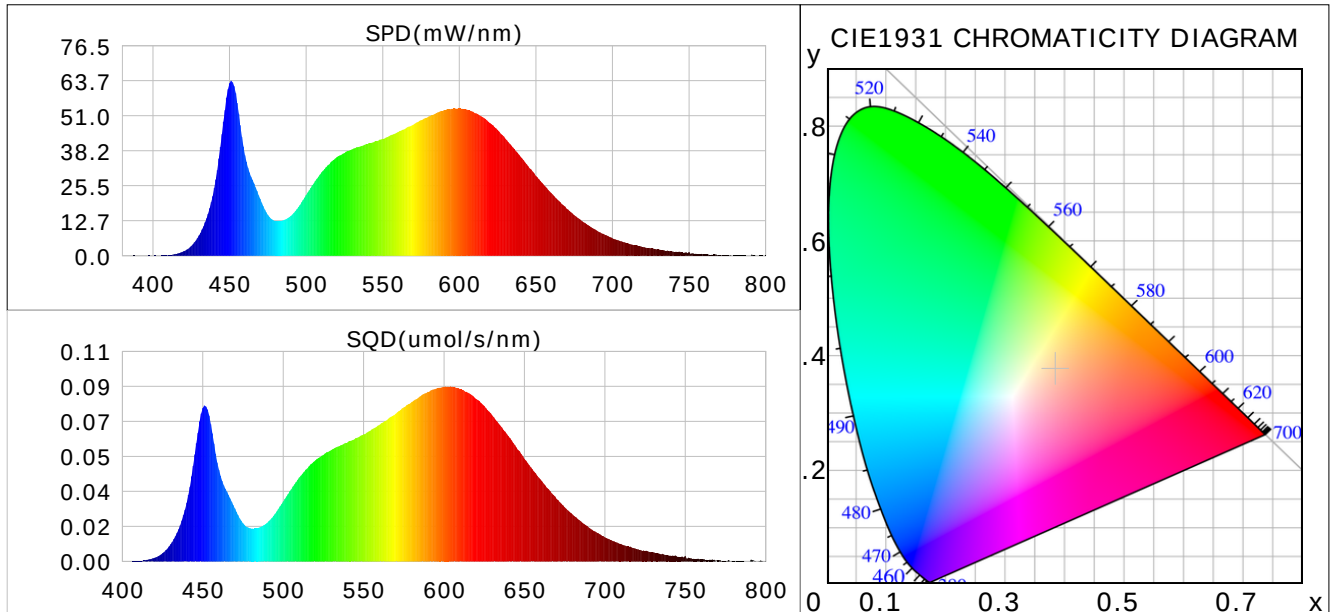
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Plant optical param data

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 CRI: Ra= 83.8



Plant Optical Param

$\mu_v(lm)$: 3074.70	$Q_v(lm.s)$: 3074.70
$\mu_e, \dot{E}(W/nm)$: 9.31	$Q_e(J)$: 9.31
$\mu_e(W)$: 9.15	$\mu_{fr}(W)$: 0.17
$\dot{C}_e$: 0.33	$\dot{C}_{fr}$: 0.01
$PPE(umol/s/w)$: 1.54	K_{fr} : 0.04
E_{rb_Ratio} : 1.55	$PPF(umol/s)$: 42.95
$PF_{uv}(360-400)(umol/s)$: 0.00	$PPF(400-500)(umol/s)$: 7.39
$PPF(500-600)(umol/s)$: 19.73	$PPF(600-700)(umol/s)$: 15.83
$PF_{fr}(700-800)(umol/s)$: 0.99	$PPF.t(umol)$: 42.95
$\mu_{ch-A.t}(J)$: 0.74	$\mu_{ch-A}(W)$: 0.74
$\mu_{ch-B.t}(J)$: 0.42	$\mu_{ch-B}(W)$: 0.42
$\mu_b.t(J)$: 1.92	$\mu_b(W)$: 1.92
$\mu_y.t(J)$: 4.27	$\mu_y(W)$: 4.27
$\mu_r.t(J)$: 3.04	$\mu_r(W)$: 3.04

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