

Lightsource Test Report

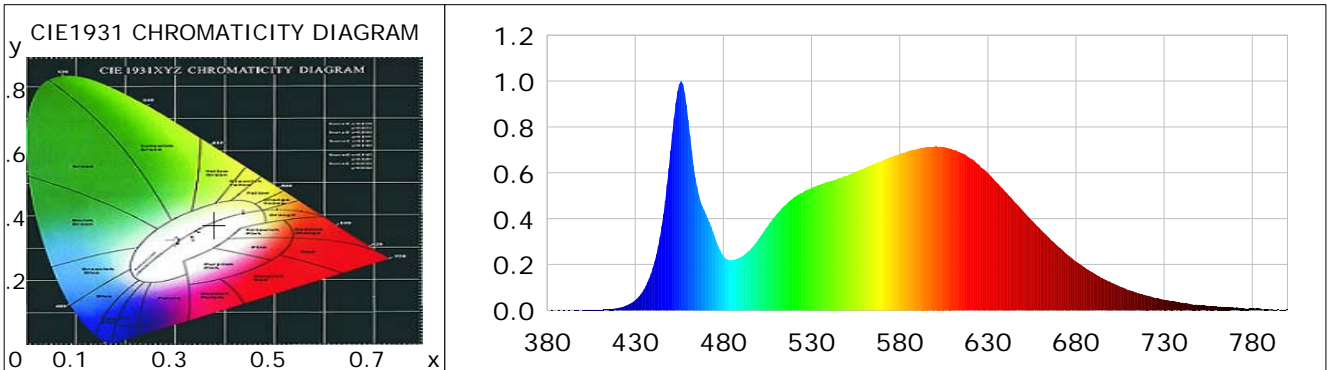
Product Information

Product Category: LED-HiPower
 Product Spec: LED-HBL-LIN-100-NW
 Manufacturer: METOLIGHT
 Buyer: 5069

Product Type: LED-HiPower-Highbay
 Product Number: 1
 Submitted Unit: 100290

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3792$ $y=0.3733$ $u(u')=0.2257$ $v=0.3332$ $v'=0.4999$
 CCT: $T_c=4008K$ ($duv=-0.00129$) Color Ratio: $R=0.190$ $G=0.771$ $B=0.039$
 Peak Wavelength: 456.0nm Half Bandwidth: 18.8nm
 Dominant Wavelength: 579.8nm Color Purity: 0.258
 CRI: $R_a=86.5$, $avgR(1\sim14)=80.9$, $avgR(1\sim15)=81.0$ TM30: $R_f=84$, $R_g=95$
 GAI: $GAI_BB_8=95.1$, $GAI_BB_15=103.1$, $GAI_EES=75.1$
 R1 =86 R2 =93 R3 =95 R4 =84 R5 =85 R6 =89 R7 =88 R8 =72
 R9 =31 R10=81 R11=83 R12=59 R13=88 R14=98 R15=82
 Color Quality Scale: $Q_a=84.5$, $Q_f=84.5$, $Q_p=84.7$, $Q_g=94.1$
 Q1 =84 Q2 =98 Q3 =80 Q4 =75 Q5 =80 Q6 =83 Q7 =87 Q8 =90
 Q9 =98 Q10=91 Q11=87 Q12=87 Q13=87 Q14=79 Q15=82



Photometric Parameters

Luminous Flux: 13741 lm Efficiency: 134.36 lm/W Radiant Power: 43.121 W
 Total mains efficacy: 146.32 lm/W Energy Efficiency Class: D (EU 2019/2015)
 Pupil Flux: 21117.27 Plm Pupil Lumens Per Watt: 206.49 Plm/W Pupil Factor (Kp): 1.537
 Circopic Flux: 43733.45 lm

Electric Parameters

Voltage: 230.60V Current: 0.4500A Power: 102.27W
 Power Factor: 0.9840 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: 45751 (2637) CCD Integration Time: 22.85 ms

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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	0.1845	525	0.5138	166.8359	670	0.2773	90.0406
385	0.0003	0.0915	530	0.5340	173.4012	675	0.2439	79.1946
390	0.0009	0.2780	535	0.5490	178.2660	680	0.2132	69.2418
395	0.0007	0.2153	540	0.5613	182.2837	685	0.1865	60.5617
400	0.0010	0.3388	545	0.5746	186.5912	690	0.1624	52.7458
405	0.0018	0.5733	550	0.5868	190.5636	695	0.1401	45.4854
410	0.0031	1.0028	555	0.6044	196.2623	700	0.1210	39.2898
415	0.0051	1.6575	560	0.6207	201.5670	705	0.1035	33.6226
420	0.0099	3.2308	565	0.6375	207.0026	710	0.0883	28.6644
425	0.0212	6.8697	570	0.6514	211.5238	715	0.0752	24.4311
430	0.0446	14.4923	575	0.6690	217.2568	720	0.0646	20.9841
435	0.0916	29.7500	580	0.6823	221.5713	725	0.0549	17.8182
440	0.1854	60.2077	585	0.6940	225.3717	730	0.0456	14.8198
445	0.3689	119.7915	590	0.7041	228.6303	735	0.0398	12.9387
450	0.6958	225.9511	595	0.7115	231.0583	740	0.0339	10.9977
455	0.9873	320.5974	600	0.7144	231.9758	745	0.0279	9.0637
460	0.8312	269.9185	605	0.7130	231.5351	750	0.0240	7.7774
465	0.5390	175.0140	610	0.7011	227.6774	755	0.0196	6.3489
470	0.4207	136.6161	615	0.6867	223.0060	760	0.0173	5.6229
475	0.3220	104.5687	620	0.6626	215.1773	765	0.0144	4.6651
480	0.2373	77.0512	625	0.6346	206.0707	770	0.0107	3.4828
485	0.2187	71.0041	630	0.5987	194.4074	775	0.0099	3.1998
490	0.2325	75.5136	635	0.5575	181.0373	780	0.0084	2.7419
495	0.2632	85.4537	640	0.5160	167.5598	785	0.0076	2.4813
500	0.3111	101.0193	645	0.4744	154.0611	790	0.0037	1.2050
505	0.3665	119.0030	650	0.4326	140.4826	795	0.0036	1.1783
510	0.4179	135.7146	655	0.3923	127.3946	800	0.0042	1.3575
515	0.4581	148.7480	660	0.3519	114.2752			
520	0.4935	160.2407	665	0.3143	102.0646			

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

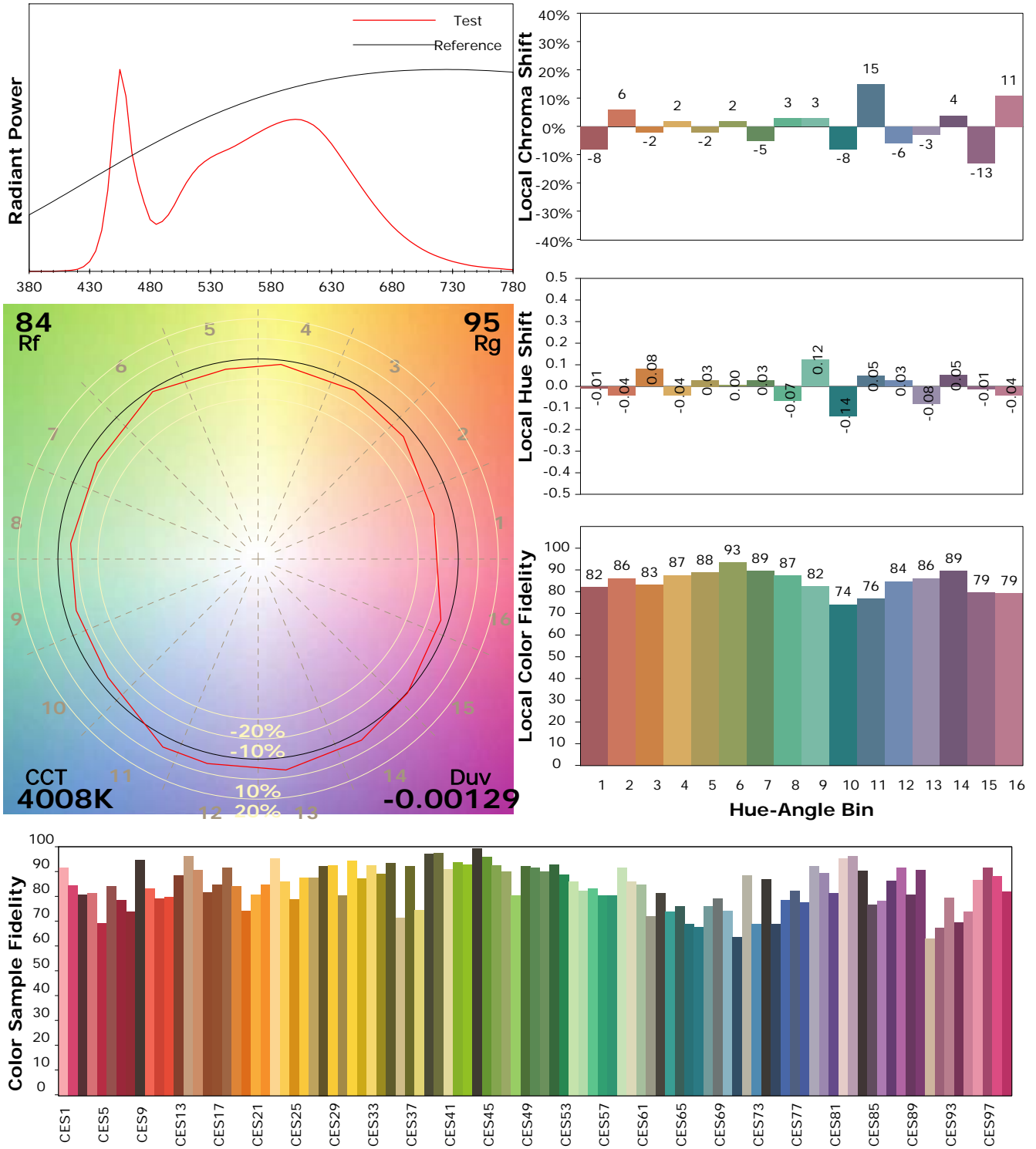
Test Device: Lisun LMS-9000B
 Test Time: 2021-08-18 14:10:16
 Inspector:

I ES TM-30-18 Color Rendition Report

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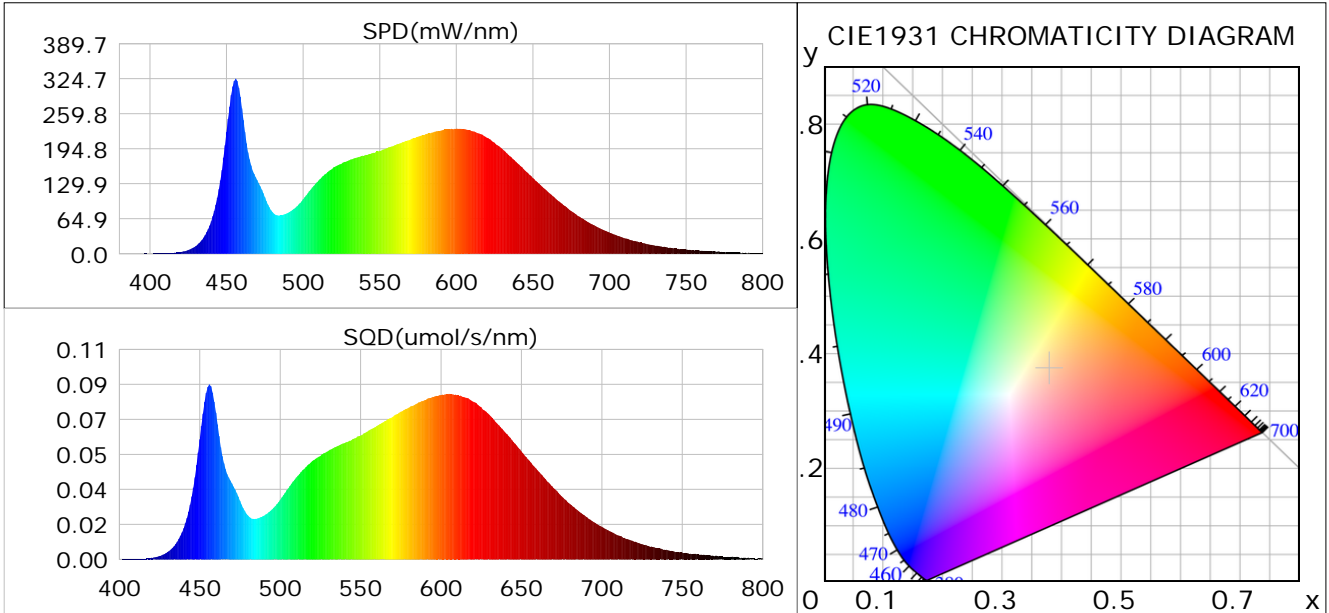
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Plant optical param data

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 Dominant Wavelength: 579.8nm Color Purity: 0.258
 CRI: $R_a=86.5$



Plant Optical Param

$ \mu_v(lm): 13741.00$	$Q_v(lm.s): 13741.00$
$ \mu_e, \dot{E}(W/nm): 43.12$	$Q_e(J): 43.12$
$ \mu_e(W): 42.00$	$ \mu_{fr}(W): 1.19$
$ \zeta_e: 0.41$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.93$	$K_{fr}: 0.07$
$Erb_Ratio: 1.52$	$PPF(umol/s): 197.53$
$PF_{uv}(360-400)(umol/s): 0.02$	$PPF(400-500)(umol/s): 35.59$
$PPF(500-600)(umol/s): 87.39$	$PPF(600-700)(umol/s): 74.55$
$PPF_r(700-800)(umol/s): 6.97$	$PPF.t(umol): 197.53$
$ \mu_{ch-A.t}(J): 3.26$	$ \mu_{ch-A}(W): 3.26$
$ \mu_{ch-B.t}(J): 2.05$	$ \mu_{ch-B}(W): 2.05$
$ \mu_b.t(J): 9.19$	$ \mu_b(W): 9.19$
$ \mu_y.t(J): 18.92$	$ \mu_y(W): 18.92$
$ \mu_r.t(J): 14.23$	$ \mu_r(W): 14.23$

Electric Parameters

Voltage: 230.60V	Current: 0.4500A	Power: 102.27W
Power Factor: 0.9840	Frequency: 49.99Hz	

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: 2021-08-18 14:10:16
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