

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-120-8DWM-20W-CRI95
 Manufacturer: METOLIGHT
 Buyer: 4624-20834

Product Type: LED-Röhre-SCE
 Product Number: 1
 Submitted Unit: 101060-20834

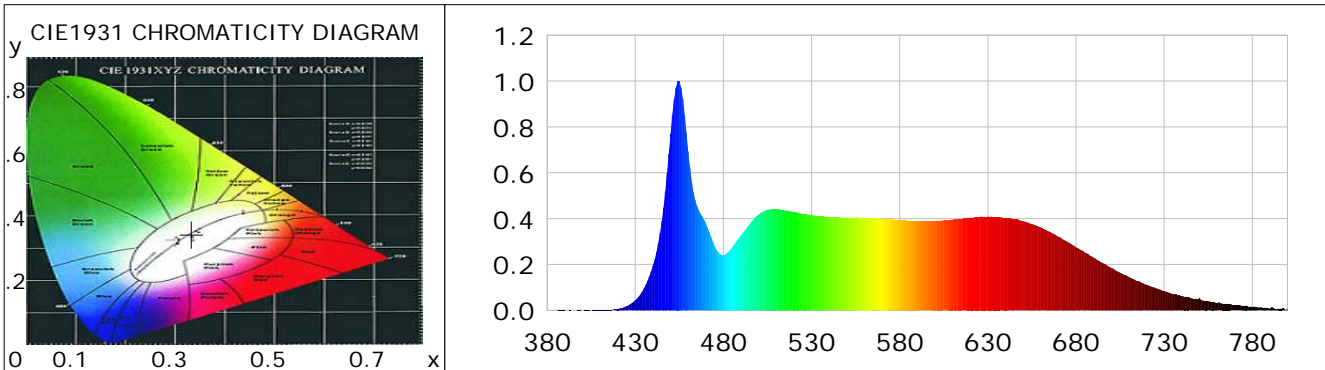
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3332$ $y=0.3433$ $u(u')=0.2066$ $v=0.3192$ $v'=0.4788$
 CCT: $T_c=5466K$ ($duv=0.00077$) Color Ratio: $R=0.173$ $G=0.765$ $B=0.062$
 Peak Wavelength: 454.5nm Half Bandwidth: 16.7nm
 Dominant Wavelength: 554.2nm Color Purity: 0.030
 CRI: $R_a=97.0$, $avgR(1\sim14)=94.8$, $avgR(1\sim15)=94.8$ TM30: $R_f=92$, $R_g=100$
 GAI: $GAI_BB_8=102.4$, $GAI_BB_15=106.4$, $GAI_EES=93.9$

R1 =96	R2 =98	R3 =99	R4 =98	R5 =97	R6 =95	R7 =97	R8 =96
R9 =92	R10=96	R11=95	R12=73	R13=97	R14=99	R15=95	

Color Quality Scale: $Q_a=95.8$, $Q_f=94.9$, $Q_p=97.1$, $Q_g=101.2$

Q1 =93	Q2 =99	Q3 =91	Q4 =91	Q5 =95	Q6 =98	Q7 =99	Q8 =100
Q9 =100	Q10=100	Q11=99	Q12=100	Q13=99	Q14=98	Q15=96	



Photometric Parameters

Luminous Flux: 2058.3 lm Efficiency: 104.32 lm/W Radiant Power: 7.750 W
 Total mains efficacy: 122.68 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 3907.31 Plm Pupil Lumens Per Watt: 198.04 Plm/W Pupil Factor (Kp): 1.898
 Circopic Flux: 9059.22 lm

Electric Parameters

Voltage: 231.00V Current: 0.0900A Power: 19.73W
 Power Factor: 0.9460 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: 44366 (2987) CCD Integration Time: 87.87 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	0.0390	525	0.4204	29.4469	670	0.3221	22.5640
385	0.0009	0.0597	530	0.4141	29.0057	675	0.2997	20.9932
390	0.0008	0.0536	535	0.4103	28.7392	680	0.2750	19.2656
395	0.0003	0.0243	540	0.4061	28.4489	685	0.2521	17.6631
400	0.0005	0.0379	545	0.4054	28.4014	690	0.2291	16.0507
405	0.0003	0.0220	550	0.4045	28.3378	695	0.2072	14.5116
410	0.0014	0.1004	555	0.4052	28.3833	700	0.1855	12.9979
415	0.0028	0.1932	560	0.4038	28.2893	705	0.1641	11.4981
420	0.0070	0.4935	565	0.4013	28.1143	710	0.1459	10.2190
425	0.0177	1.2395	570	0.3997	27.9984	715	0.1286	9.0123
430	0.0437	3.0603	575	0.3967	27.7898	720	0.1122	7.8596
435	0.0958	6.7095	580	0.3938	27.5903	725	0.0977	6.8473
440	0.1946	13.6305	585	0.3899	27.3105	730	0.0851	5.9601
445	0.3885	27.2145	590	0.3889	27.2434	735	0.0721	5.0509
450	0.7698	53.9240	595	0.3886	27.2211	740	0.0630	4.4168
455	1.0000	70.0529	600	0.3902	27.3324	745	0.0538	3.7667
460	0.6935	48.5788	605	0.3937	27.5775	750	0.0550	3.8542
465	0.4555	31.9126	610	0.3954	27.6999	755	0.0398	2.7898
470	0.3800	26.6231	615	0.3999	28.0142	760	0.0316	2.2159
475	0.2806	19.6583	620	0.4042	28.3143	765	0.0283	1.9829
480	0.2413	16.9053	625	0.4072	28.5289	770	0.0220	1.5412
485	0.2755	19.2972	630	0.4093	28.6728	775	0.0193	1.3488
490	0.3277	22.9592	635	0.4075	28.5492	780	0.0144	1.0102
495	0.3770	26.4080	640	0.4028	28.2174	785	0.0133	0.9350
500	0.4176	29.2568	645	0.3972	27.8241	790	0.0073	0.5105
505	0.4392	30.7650	650	0.3891	27.2596	795	0.0078	0.5487
510	0.4418	30.9505	655	0.3773	26.4305	800	0.0057	0.3974
515	0.4355	30.5103	660	0.3621	25.3656			
520	0.4293	30.0724	665	0.3429	24.0217			

Condition: Tx:27.3°C, Ti:0.0°C, R.H.:60%
 Test Lab: Asmetec GmbH
 Operator: CRE

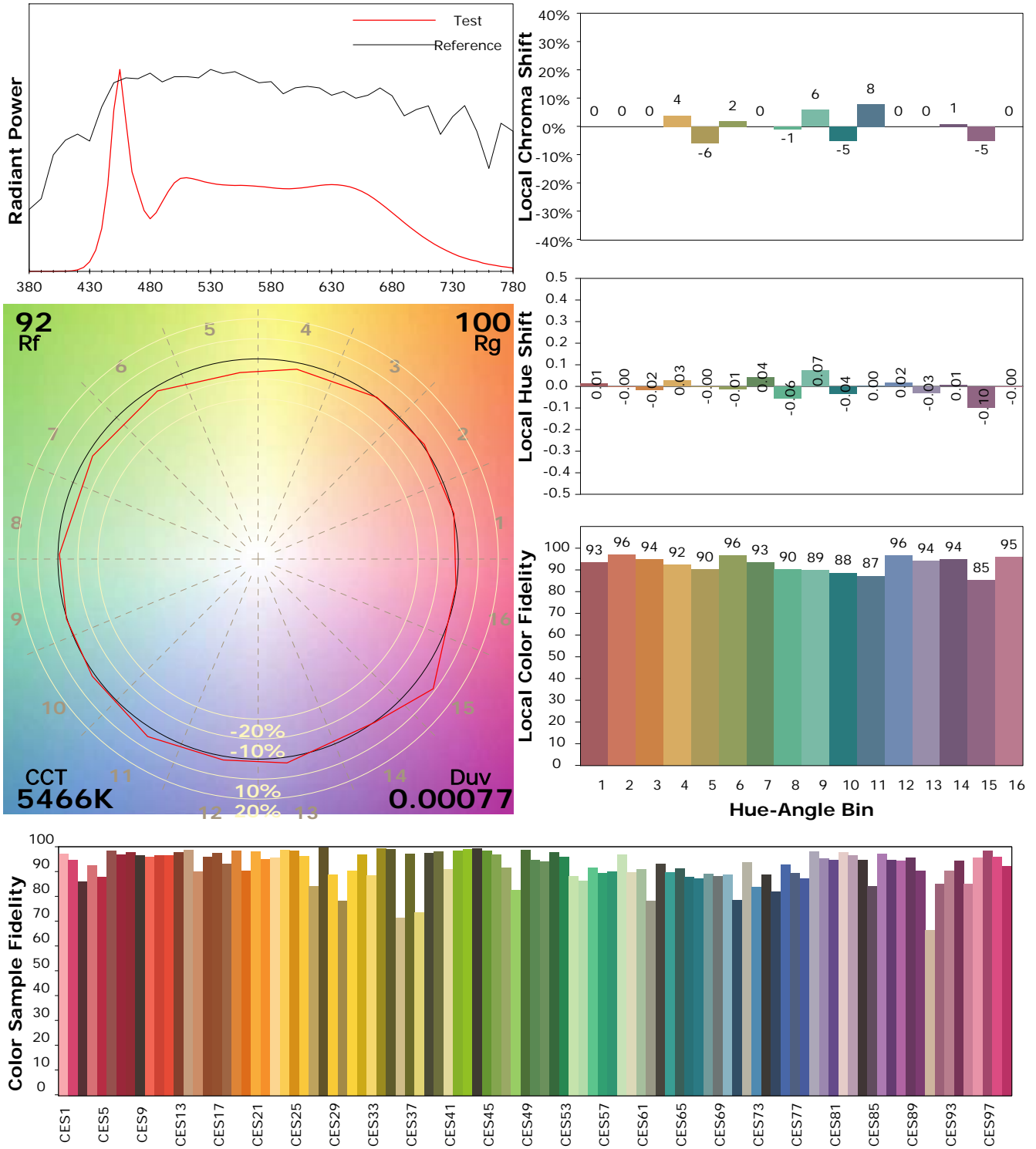
Test Device: Lisun LMS-9000B
 Test Time: 2020-11-11 12:20:18
 Inspector:

IES TM-30-18 Color Rendition Report

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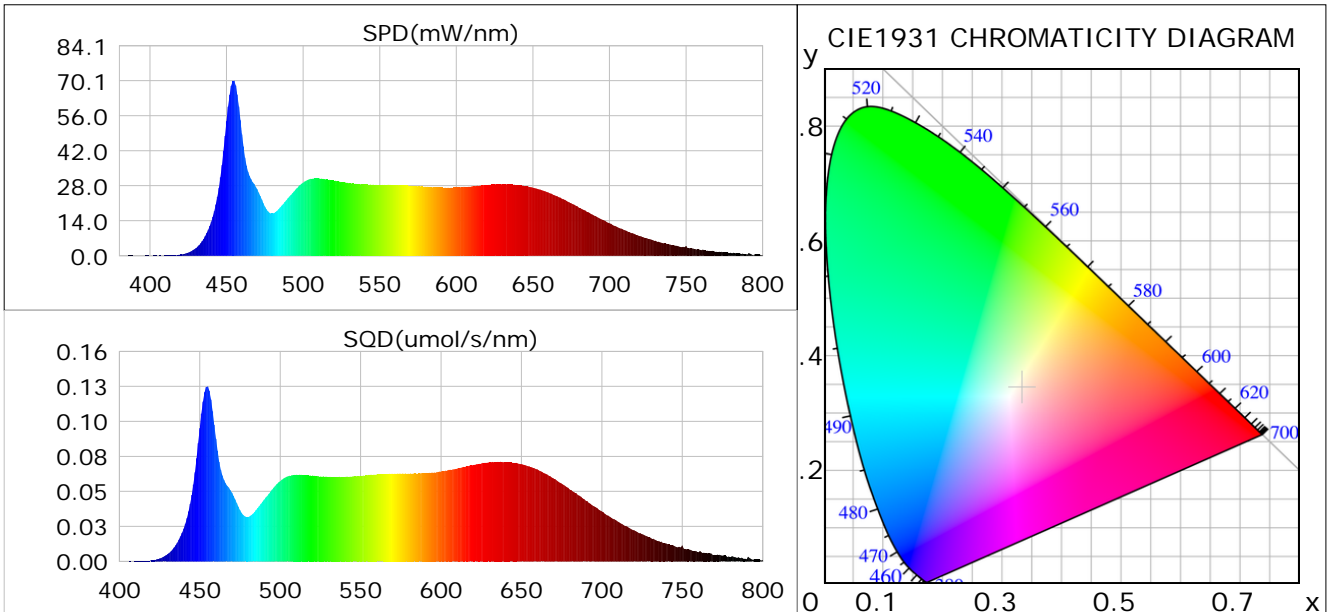
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Plant optical param data

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 Peak Wavelength: 454.5nm Half Bandwidth: 16.7nm
 Dominant Wavelength: 554.2nm Color Purity: 0.030
 CRI: $R_a=97.0$



Plant Optical Param

$ \mu_v(lm): 2058.30$	$Q_v(lm.s): 2058.30$
$ \mu_e, \dot{E}(W/nm): 7.75$	$Q_e(J): 7.75$
$ \mu_e(W): 7.33$	$ \mu_{fr}(W): 0.45$
$ \dot{C}_e: 0.37$	$ \dot{C}_{fr}: 0.02$
$PPE(umol/s/w): 1.73$	$K_{fr}: 0.13$
$Erb_Ratio: 1.20$	$PPF(umol/s): 34.18$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 7.90$
$PPF(500-600)(umol/s): 13.16$	$PPF(600-700)(umol/s): 13.12$
$PPF_{fr}(700-800)(umol/s): 2.63$	$PPF.t(umol): 34.18$
$ \mu_{ch-A.t}(J): 0.61$	$ \mu_{ch-A}(W): 0.61$
$ \mu_{ch-B.t}(J): 0.39$	$ \mu_{ch-B}(W): 0.39$
$ \mu_b.t(J): 2.03$	$ \mu_b(W): 2.03$
$ \mu_y.t(J): 2.89$	$ \mu_y(W): 2.89$
$ \mu_r.t(J): 2.46$	$ \mu_r(W): 2.46$

Electric Parameters

Voltage: 231.00V	Current: 0.0900A	Power: 19.73W
Power Factor: 0.9460	Frequency: 49.99Hz	

Condition: $T_x: 27.3^\circ C$, $T_i: 0.0^\circ C$, R.H.: 60%
 Test Lab: Asmetec GmbH
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2020-11-11 12:20:18
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