

Lightsource Test Report

Product Information

Product Category: LED-Technik
 Product Spec: LED-MODUL-142-15-WW
 Manufacturer: METOLIGHT
 Buyer: 5318

Product Type: LED-Technik-Module
 Product Number: 1
 Submitted Unit: 103233

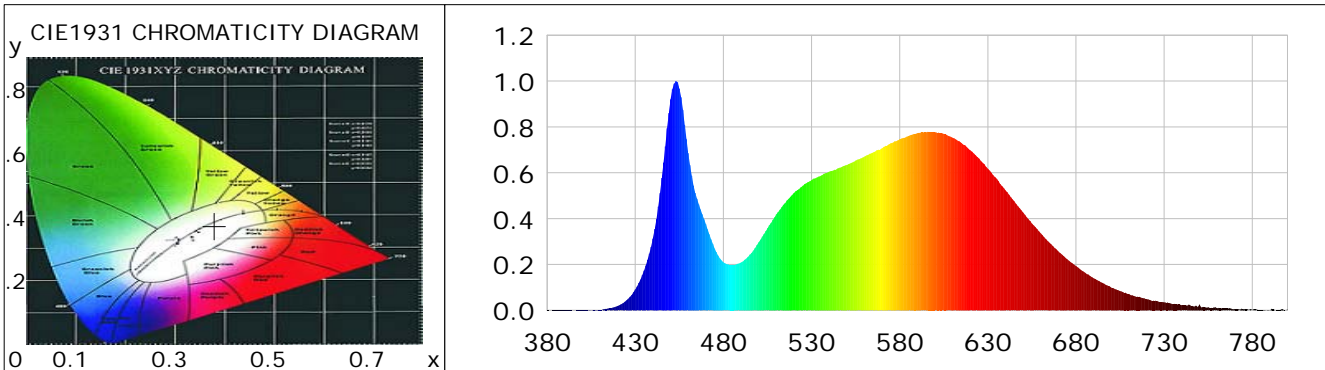
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3796$ $y=0.3703$ $u(u')=0.2271$ $v=0.3324$ $v'=0.4986$
 CCT: $T_c=3975K$ ($duv=-0.00279$) Color Ratio: $R=0.188$ $G=0.778$ $B=0.034$
 Peak Wavelength: 453.2nm Half Bandwidth: 20.7nm
 Dominant Wavelength: 580.8nm Color Purity: 0.251
 CRI: $R_a=83.6$, $avgR(1\sim14)=77.0$, $avgR(1\sim15)=77.2$ TM30: $R_f=82$, $R_g=96$
 GAI: $GAI_BB_8=97.2$, $GAI_BB_15=104.6$, $GAI_EES=76.3$

R1 =83	R2 =90	R3 =93	R4 =82	R5 =82	R6 =85	R7 =86	R8 =68
R9 =18	R10=74	R11=80	R12=58	R13=85	R14=96	R15=79	

Color Quality Scale: $Q_a=81.6$, $Q_f=81.3$, $Q_p=82.9$, $Q_g=94.5$

Q1 =84	Q2 =99	Q3 =75	Q4 =71	Q5 =79	Q6 =82	Q7 =84	Q8 =88
Q9 =96	Q10=86	Q11=83	Q12=82	Q13=83	Q14=75	Q15=78	



Photometric Parameters

Luminous Flux: 1491.8 lm	Efficiency: 86.99 lm/W	Radiant Power: 4.565 W
Total mains efficacy: 102.29 lm/W	Energy Efficiency Class: F (EU 2019/2015)	
Pupil Flux: 2229.58 Plm	Pupil Lumens Per Watt: 130.00 Plm/W	Pupil Factor (Kp): 1.495
Cirtopic Flux: 4520.28 lm		

Electric Parameters

Voltage: 231.40V	Current: 0.1260A	Power: 17.15W
Power Factor: 0.5840	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: 46016 (2798)	CCD Integration Time: 145.84 ms

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: 2021-08-16 11:47:32
 Inspector:

Lightsource Test Report

Product Information

Product Category: LED-Technik
 Product Spec: LED-MODUL-142-15-WW
 Manufacturer: METOLIGHT
 Buyer: 5318

Product Type: LED-Technik-Module
 Product Number: 1
 Submitted Unit: 103233

WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0009	0.0303	525	0.5433	17.9693	670	0.2575	8.5152
385	0.0008	0.0252	530	0.5678	18.7790	675	0.2232	7.3835
390	0.0010	0.0316	535	0.5858	19.3732	680	0.1937	6.4056
395	0.0002	0.0064	540	0.6047	19.9991	685	0.1649	5.4531
400	0.0013	0.0426	545	0.6199	20.5015	690	0.1401	4.6336
405	0.0009	0.0293	550	0.6339	20.9648	695	0.1196	3.9561
410	0.0031	0.1011	555	0.6532	21.6038	700	0.0997	3.2990
415	0.0086	0.2836	560	0.6703	22.1697	705	0.0843	2.7877
420	0.0195	0.6455	565	0.6894	22.7997	710	0.0717	2.3717
425	0.0435	1.4395	570	0.7075	23.3993	715	0.0600	1.9829
430	0.0908	3.0039	575	0.7290	24.1093	720	0.0495	1.6357
435	0.1734	5.7339	580	0.7467	24.6947	725	0.0421	1.3934
440	0.3133	10.3601	585	0.7602	25.1430	730	0.0355	1.1735
445	0.5777	19.1077	590	0.7730	25.5649	735	0.0275	0.9101
450	0.9205	30.4429	595	0.7766	25.6855	740	0.0229	0.7578
455	0.9681	32.0189	600	0.7776	25.7182	745	0.0205	0.6781
460	0.6856	22.6748	605	0.7700	25.4654	750	0.0257	0.8491
465	0.4867	16.0973	610	0.7528	24.8961	755	0.0136	0.4505
470	0.3763	12.4450	615	0.7304	24.1564	760	0.0095	0.3140
475	0.2699	8.9266	620	0.6986	23.1049	765	0.0080	0.2656
480	0.2101	6.9487	625	0.6623	21.9025	770	0.0062	0.2054
485	0.1989	6.5779	630	0.6176	20.4267	775	0.0042	0.1401
490	0.2092	6.9194	635	0.5740	18.9838	780	0.0030	0.0999
495	0.2434	8.0496	640	0.5232	17.3034	785	0.0033	0.1081
500	0.2967	9.8141	645	0.4755	15.7274	790	0.0002	0.0062
505	0.3583	11.8485	650	0.4267	14.1122	795	0.0023	0.0750
510	0.4192	13.8655	655	0.3784	12.5147	800	0.0049	0.1636
515	0.4684	15.4901	660	0.3361	11.1148			
520	0.5119	16.9308	665	0.2948	9.7485			

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

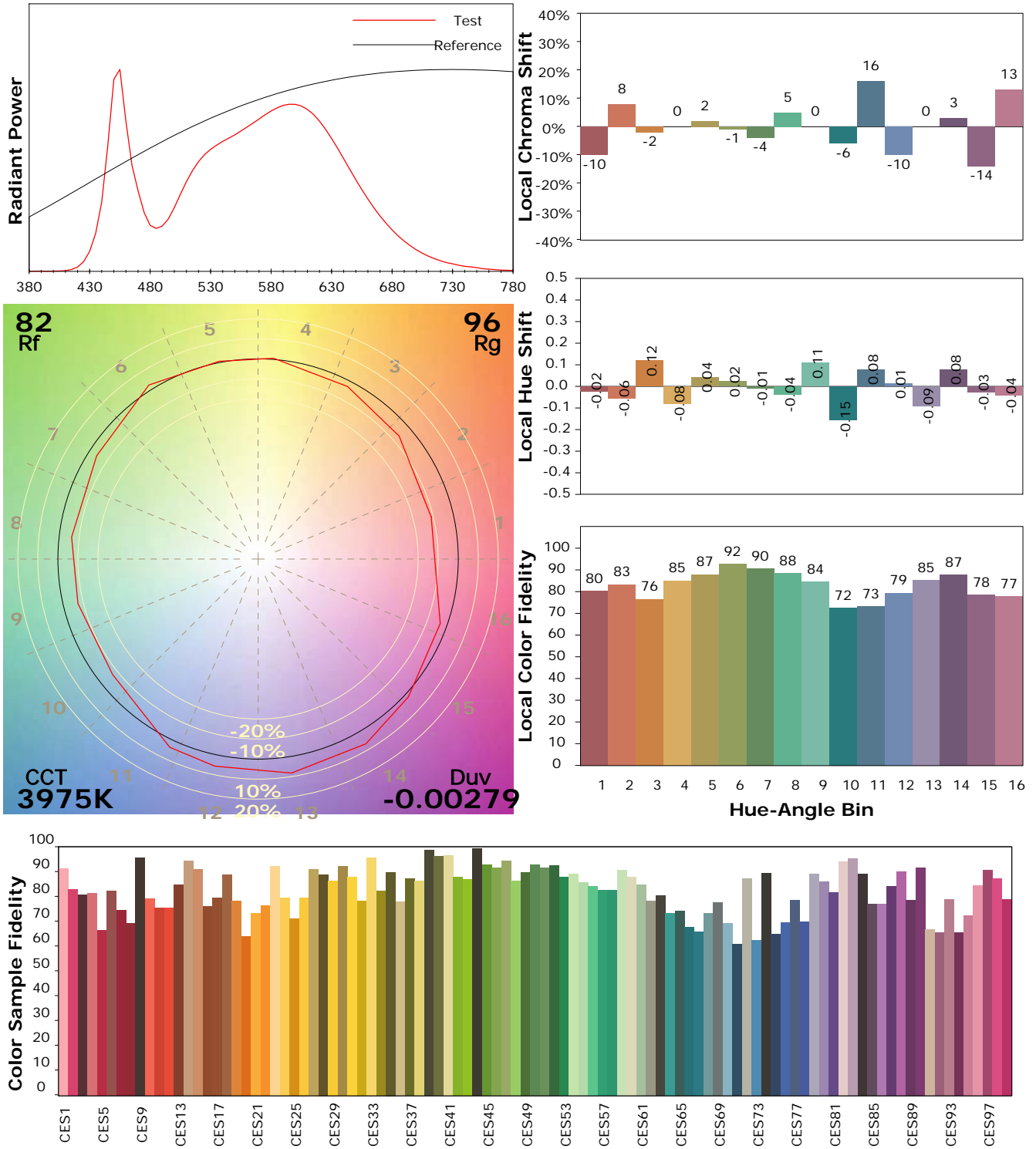
Test Device: Lisun LMS-9000B
 Test Time: 2021-08-16 11:47:32
 Inspector:

IES TM-30-18 Color Rendition Report

Product Information

Product Category: LED-Technik
 Product Spec: LED-MODUL-142-15-WW
 Manufacturer: METOLIGHT
 Buyer: 5318

Product Type: LED-Technik-Module
 Product Number: 1
 Submitted Unit: 103233



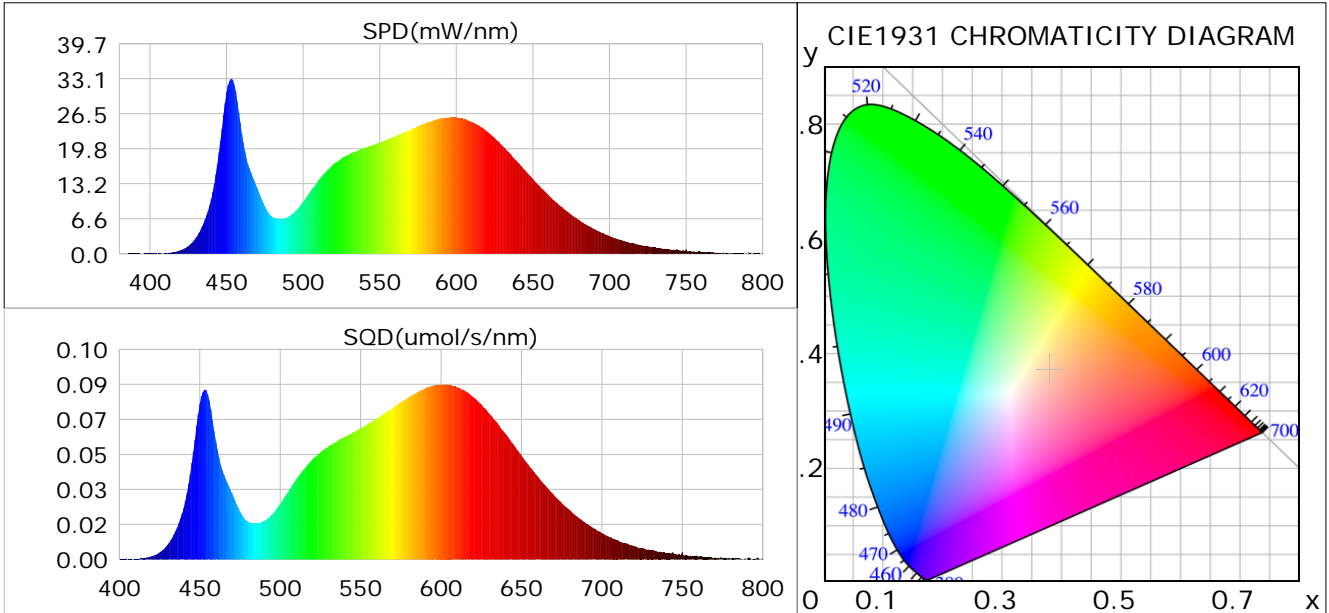
Condition: Tx:0.0°C, Ti:0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-08-16 11:47:32
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3796$ $y=0.3703$ $u(u')=0.2271$ $v=0.3324$ $v'=0.4986$
 CCT: $T_c=3975K$ ($duv=-0.00279$) Color Ratio: $R=0.188$ $G=0.778$ $B=0.034$
 Peak Wavelength: 453.2nm Half Bandwidth: 20.7nm
 Dominant Wavelength: 580.8nm Color Purity: 0.251
 CRI: $R_a=83.6$



Plant Optical Param

$ \mu_v(lm): 1491.80$	$Q_v(lm.s): 1491.80$
$ \mu_e, \dot{E}(W/nm): 4.57$	$Q_e(J): 4.57$
$ \mu_e(W): 4.48$	$ \mu_{fr}(W): 0.09$
$ \dot{C}_e: 0.26$	$ \dot{C}_{fr}: 0.01$
$PPE(umol/s/w): 1.22$	$K_{fr}: 0.03$
$Erb_Ratio: 1.46$	$PPF(umol/s): 20.99$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 3.80$
$PPF(500-600)(umol/s): 9.54$	$PPF(600-700)(umol/s): 7.65$
$PPF_{fr}(700-800)(umol/s): 0.53$	$PPF.t(umol): 20.99$
$ \mu_{ch-A.t}(J): 0.36$	$ \mu_{ch-A}(W): 0.36$
$ \mu_{ch-B.t}(J): 0.22$	$ \mu_{ch-B}(W): 0.22$
$ \mu_b.t(J): 0.99$	$ \mu_b(W): 0.99$
$ \mu_y.t(J): 2.06$	$ \mu_y(W): 2.06$
$ \mu_r.t(J): 1.47$	$ \mu_r(W): 1.47$

Electric Parameters

Voltage: 231.40V	Current: 0.1260A	Power: 17.15W
Power Factor: 0.5840	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: 2021-08-16 11:47:32
 Inspector: