

Lightsource Test Report

Product Information

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

Product Type: LED-Röhre-Spezial
 Product Number: 1
 Submitted Unit: 104066

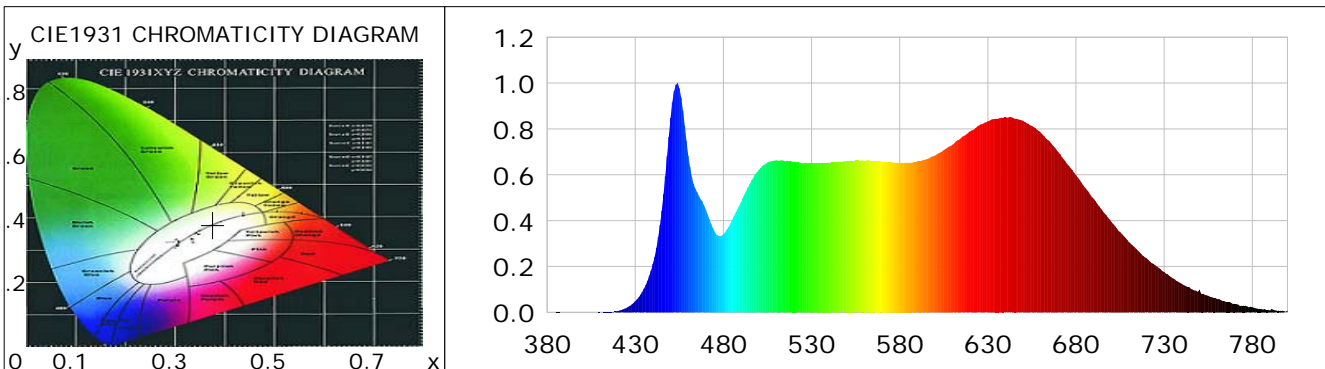
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3763$ $y=0.3798$ $u(u')=0.2212$ $v=0.3349$ $v'=0.5023$
 CCT: $T_c=4137K$ ($duv=0.00267$) Color Ratio: $R=0.204$ $G=0.747$ $B=0.049$
 Peak Wavelength: 453.7nm Half Bandwidth: 20.8nm
 Dominant Wavelength: 577.1nm Color Purity: 0.269
 CRI: $R_a=95.9$, $avgR(1\sim14)=93.4$, $avgR(1\sim15)=93.4$ TM30: $R_f=91$, $R_g=100$
 GAI: $GAI_BB_8=97.7$, $GAI_BB_15=102.7$, $GAI_EES=79.1$

R1 =95	R2 =98	R3 =98	R4 =96	R5 =96	R6 =97	R7 =95	R8 =92
R9 =82	R10=95	R11=93	R12=77	R13=95	R14=98	R15=93	

Color Quality Scale: $Q_a=95.0$, $Q_f=94.3$, $Q_p=96.7$, $Q_g=100.6$

Q1 =90	Q2 =96	Q3 =97	Q4 =97	Q5 =98	Q6 =97	Q7 =98	Q8 =97
Q9 =95	Q10=93	Q11=94	Q12=93	Q13=95	Q14=98	Q15=94	



Photometric Parameters

Luminous Flux: 2165.1 lm Efficiency: 103.89 lm/W Radiant Power: 8.184 W
 Total mains efficacy: 122.18 lm/W Energy Efficiency Class: E (EU 2019/2015)
 Pupil Flux: 3632.75 Plm Pupil Lumens Per Watt: 174.32 Plm/W Pupil Factor (Kp): 1.678
 Circopic Flux: 7813.22 lm

Electric Parameters

Voltage: 231.00V Current: 0.1000A Power: 20.84W
 Power Factor: 0.8990 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: 44562 (2529) CCD Integration Time: 151.90 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	0.0250	525	0.6488	28.9458	670	0.6987	31.1719
385	0.0009	0.0384	530	0.6512	29.0506	675	0.6466	28.8489
390	0.0006	0.0263	535	0.6510	29.0429	680	0.5978	26.6708
395	0.0001	0.0024	540	0.6524	29.1063	685	0.5440	24.2704
400	0.0002	0.0105	545	0.6566	29.2913	690	0.4951	22.0876
405	0.0001	0.0039	550	0.6600	29.4450	695	0.4427	19.7525
410	0.0008	0.0355	555	0.6620	29.5352	700	0.3953	17.6342
415	0.0018	0.0786	560	0.6616	29.5145	705	0.3501	15.6180
420	0.0066	0.2936	565	0.6615	29.5113	710	0.3063	13.6651
425	0.0193	0.8614	570	0.6572	29.3191	715	0.2703	12.0603
430	0.0485	2.1622	575	0.6548	29.2145	720	0.2360	10.5278
435	0.1038	4.6303	580	0.6521	29.0940	725	0.2046	9.1276
440	0.2110	9.4114	585	0.6525	29.1110	730	0.1764	7.8682
445	0.4443	19.8213	590	0.6585	29.3775	735	0.1481	6.6060
450	0.8478	37.8224	595	0.6680	29.8033	740	0.1248	5.5685
455	0.9780	43.6312	600	0.6841	30.5186	745	0.1035	4.6197
460	0.6845	30.5378	605	0.7079	31.5835	750	0.0985	4.3952
465	0.5256	23.4486	610	0.7312	32.6196	755	0.0724	3.2305
470	0.4481	19.9922	615	0.7621	33.9985	760	0.0576	2.5712
475	0.3512	15.6689	620	0.7902	35.2522	765	0.0456	2.0332
480	0.3399	15.1629	625	0.8159	36.4002	770	0.0372	1.6584
485	0.4029	17.9767	630	0.8339	37.2055	775	0.0287	1.2804
490	0.4795	21.3901	635	0.8442	37.6621	780	0.0226	1.0103
495	0.5604	25.0004	640	0.8505	37.9424	785	0.0148	0.6588
500	0.6205	27.6843	645	0.8449	37.6953	790	0.0078	0.3472
505	0.6537	29.1662	650	0.8356	37.2790	795	0.0077	0.3431
510	0.6632	29.5876	655	0.8136	36.2971	800	0.0086	0.3841
515	0.6588	29.3899	660	0.7845	34.9989			
520	0.6573	29.3256	665	0.7456	33.2632			

Condition: Tx:21.4'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

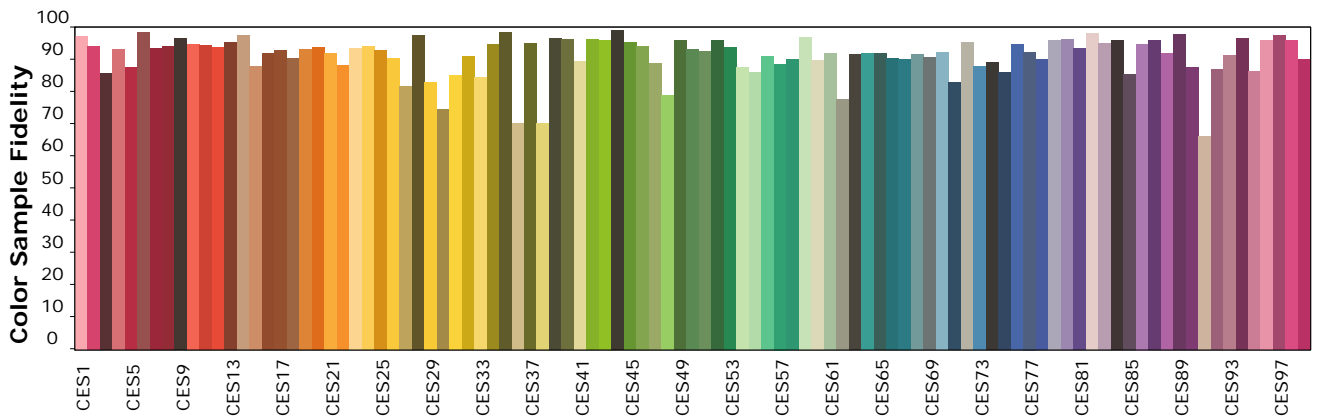
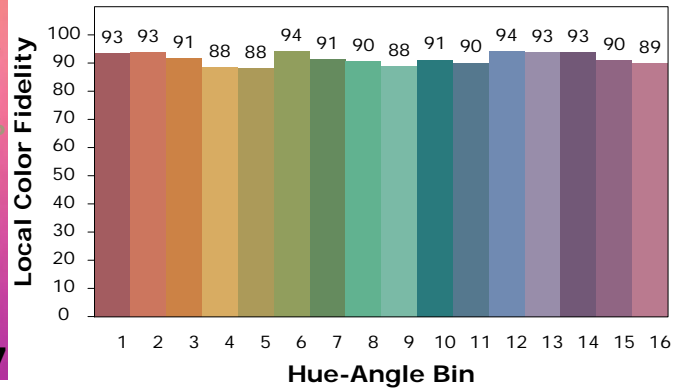
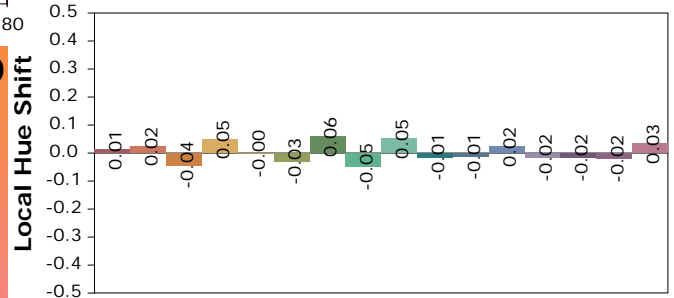
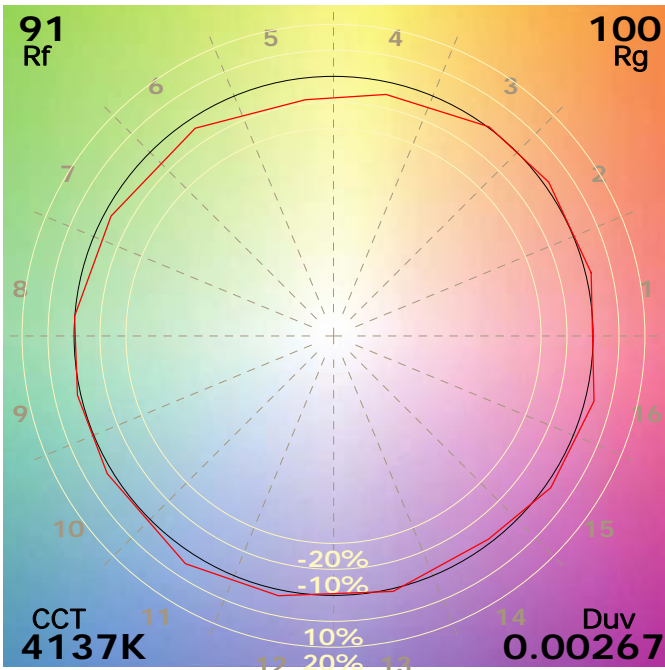
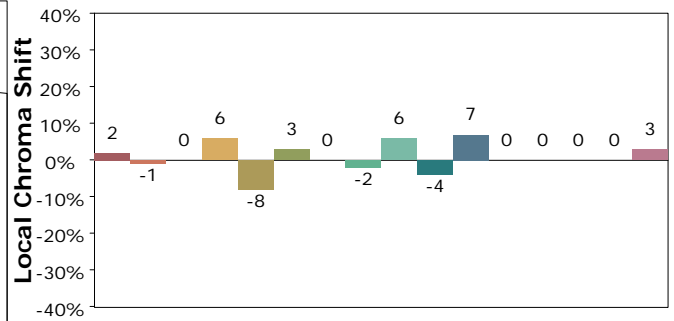
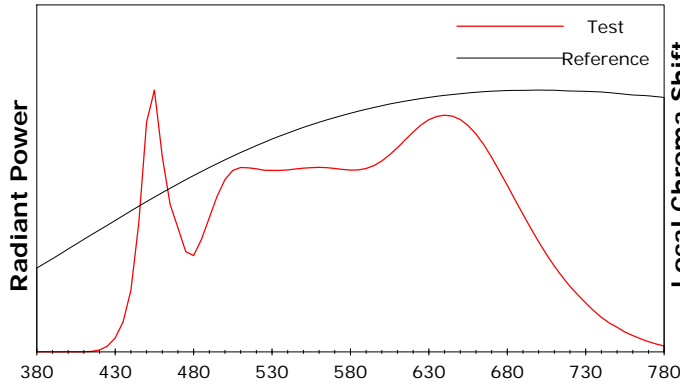
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 Test Time: 2021-02-15 13:44:55
 Inspector:

IES TM-30-18 Color Rendition Report

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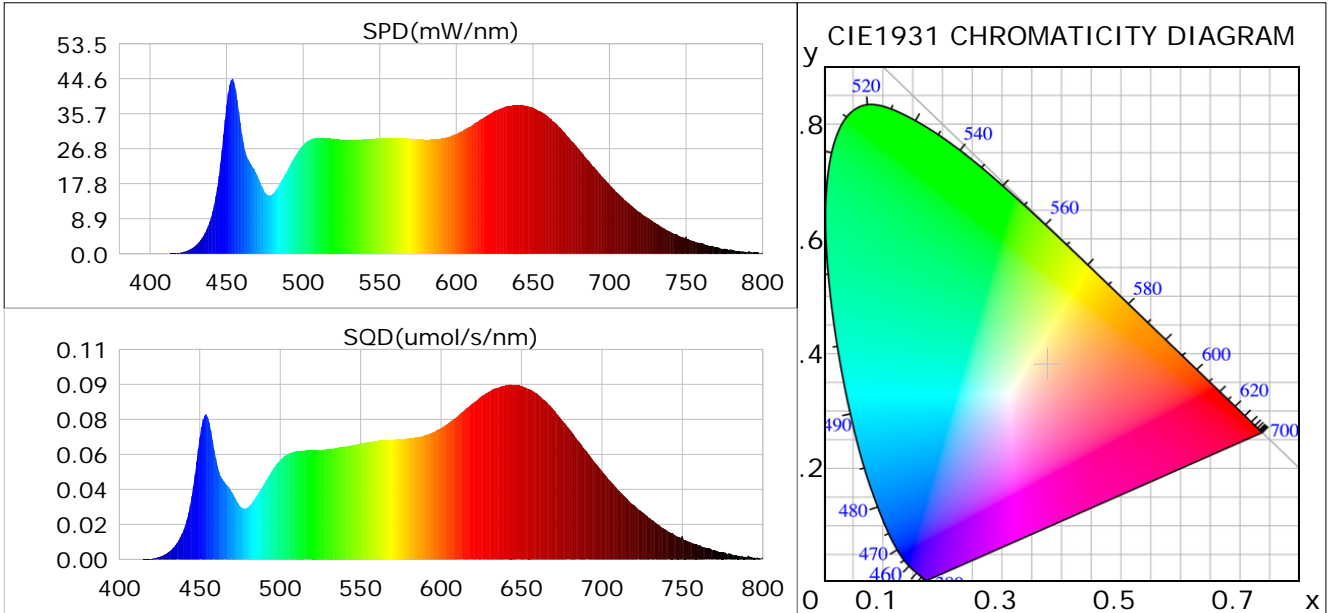
Condition: Tx:21.4°C, Ti:0.0°C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-02-15 13:44:55
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3763$ $y=0.3798$ $u(u')=0.2212$ $v=0.3349$ $v'=0.5023$
 CCT: $T_c=4137K$ ($duv=0.00267$) Color Ratio: $R=0.204$ $G=0.747$ $B=0.049$
 Peak Wavelength: 453.7nm Half Bandwidth: 20.8nm
 Dominant Wavelength: 577.1nm Color Purity: 0.269
 CRI: $R_a=95.9$



Plant Optical Param

$ \mu_v(lm): 2165.13$	$Q_v(lm.s): 2165.13$
$ \mu_e, \dot{E}(W/nm): 8.18$	$Q_e(J): 8.18$
$ \mu_e(W): 7.64$	$ \mu_{fr}(W): 0.57$
$ \zeta_e: 0.37$	$ \zeta_{fr}: 0.03$
$PPE(umol/s/w): 1.76$	$K_{fr}: 0.16$
$Erb_Ratio: 2.10$	$PPF(umol/s): 36.69$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 5.94$
$PPF(500-600)(umol/s): 13.50$	$PPF(600-700)(umol/s): 17.25$
$PPF_r(700-800)(umol/s): 3.33$	$PPF.t(umol): 36.69$
$ \mu_{ch-A.t}(J): 0.65$	$ \mu_{ch-A}(W): 0.65$
$ \mu_{ch-B.t}(J): 0.35$	$ \mu_{ch-B}(W): 0.35$
$ \mu_b.t(J): 1.52$	$ \mu_b(W): 1.52$
$ \mu_y.t(J): 2.96$	$ \mu_y(W): 2.96$
$ \mu_r.t(J): 3.22$	$ \mu_r(W): 3.22$

Electric Parameters

Voltage: 231.00V	Current: 0.1000A	Power: 20.84W
Power Factor: 0.8990	Frequency: 49.99Hz	

Condition: $T_x: 21.4^\circ C$, $T_i: 0.0^\circ C$, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-02-15 13:44:55
 Inspector: