

Lightsource Test Report

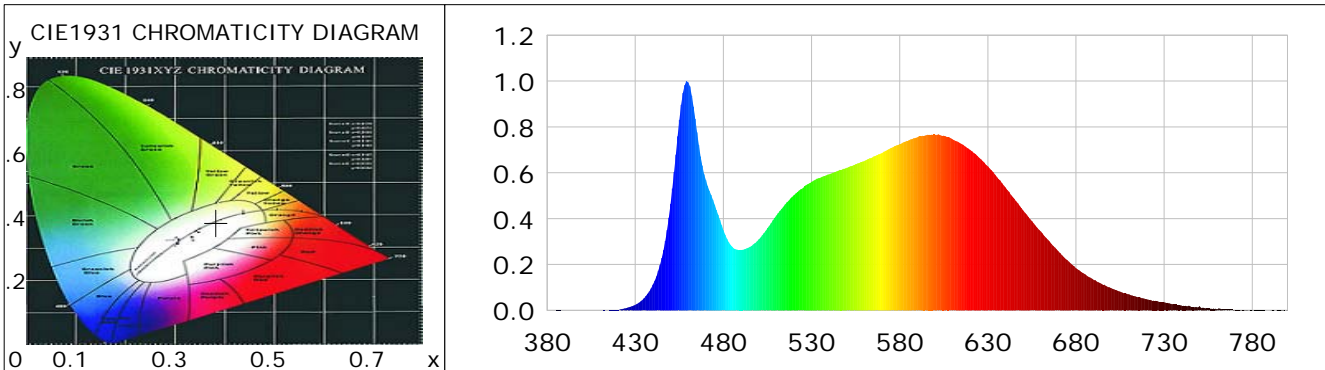
Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-120-8NWM-18W-Nano-135
 Manufacturer: METOLIGHT
 Buyer: 4656

Product Type: LED-Röhre-SCE
 Product Number: 1
 Submitted Unit: 104313

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3827$ $y=0.3800$ $u(u')=0.2253$ $v=0.3355$ $v'=0.5033$
 CCT: $T_c=3964K$ ($duv=0.00085$) Color Ratio: $R=0.190$ $G=0.768$ $B=0.042$
 Peak Wavelength: 459.3nm Half Bandwidth: 22.6nm
 Dominant Wavelength: 578.8nm Color Purity: 0.289
 CRI: $R_a=85.3$, $avgR(1\sim14)=79.7$, $avgR(1\sim15)=79.7$ TM30: $R_f=82$, $R_g=91$
 GAI: $GAI_BB_8=89.4$, $GAI_BB_15=98.6$, $GAI_EES=70.0$
 R1 =85 R2 =94 R3 =96 R4 =80 R5 =83 R6 =90 R7 =84 R8 =68
 R9 =25 R10=84 R11=79 R12=59 R13=89 R14=99 R15=80
 Color Quality Scale: $Q_a=83.5$, $Q_f=83.9$, $Q_p=82.0$, $Q_g=90.9$
 Q1 =80 Q2 =95 Q3 =83 Q4 =74 Q5 =77 Q6 =78 Q7 =85 Q8 =90
 Q9 =98 Q10=93 Q11=89 Q12=88 Q13=87 Q14=78 Q15=80



Photometric Parameters

Luminous Flux: 1575.1 lm Efficiency: 129.85 lm/W Radiant Power: 4.803 W
 Total mains efficacy: 152.71 lm/W Energy Efficiency Class: D (EU 2019/2015)
 Pupil Flux: 2428.83 Plm Pupil Lumens Per Watt: 200.23 Plm/W Pupil Factor (Kp): 1.542
 Circopic Flux: 5077.82 lm

Electric Parameters

Voltage: 230.80V Current: 0.0550A Power: 12.13W
 Power Factor: 0.9440 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: 52749 (2338) CCD Integration Time: 189.44 ms

Condition: Tx:19.0'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-25 14:57:27
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0038	525	0.5320	18.7529	670	0.2580	9.0934
385	0.0012	0.0415	530	0.5604	19.7536	675	0.2194	7.7328
390	0.0007	0.0246	535	0.5784	20.3887	680	0.1839	6.4839
395	0.0001	0.0052	540	0.5935	20.9203	685	0.1582	5.5759
400	0.0002	0.0064	545	0.6082	21.4371	690	0.1328	4.6801
405	0.0003	0.0089	550	0.6214	21.9031	695	0.1127	3.9742
410	0.0002	0.0087	555	0.6370	22.4524	700	0.0968	3.4129
415	0.0010	0.0369	560	0.6518	22.9764	705	0.0818	2.8818
420	0.0033	0.1177	565	0.6705	23.6358	710	0.0701	2.4718
425	0.0105	0.3688	570	0.6864	24.1960	715	0.0579	2.0413
430	0.0242	0.8546	575	0.7082	24.9646	720	0.0485	1.7087
435	0.0526	1.8547	580	0.7252	25.5639	725	0.0416	1.4680
440	0.1120	3.9495	585	0.7408	26.1115	730	0.0354	1.2480
445	0.2284	8.0500	590	0.7553	26.6232	735	0.0271	0.9540
450	0.4646	16.3772	595	0.7641	26.9328	740	0.0206	0.7258
455	0.8310	29.2917	600	0.7670	27.0365	745	0.0165	0.5799
460	0.9947	35.0634	605	0.7616	26.8474	750	0.0178	0.6277
465	0.7767	27.3789	610	0.7462	26.3031	755	0.0084	0.2975
470	0.5687	20.0463	615	0.7266	25.6107	760	0.0046	0.1638
475	0.4610	16.2483	620	0.7000	24.6746	765	0.0041	0.1434
480	0.3494	12.3159	625	0.6659	23.4726	770	0.0023	0.0808
485	0.2773	9.7746	630	0.6278	22.1281	775	0.0033	0.1146
490	0.2633	9.2796	635	0.5826	20.5366	780	0.0028	0.0977
495	0.2766	9.7499	640	0.5355	18.8774	785	0.0020	0.0690
500	0.3095	10.9101	645	0.4867	17.1571	790	0.0007	0.0235
505	0.3590	12.6554	650	0.4359	15.3661	795	0.0016	0.0557
510	0.4135	14.5751	655	0.3891	13.7156	800	0.0040	0.1418
515	0.4625	16.3032	660	0.3445	12.1438			
520	0.5026	17.7169	665	0.3008	10.6040			

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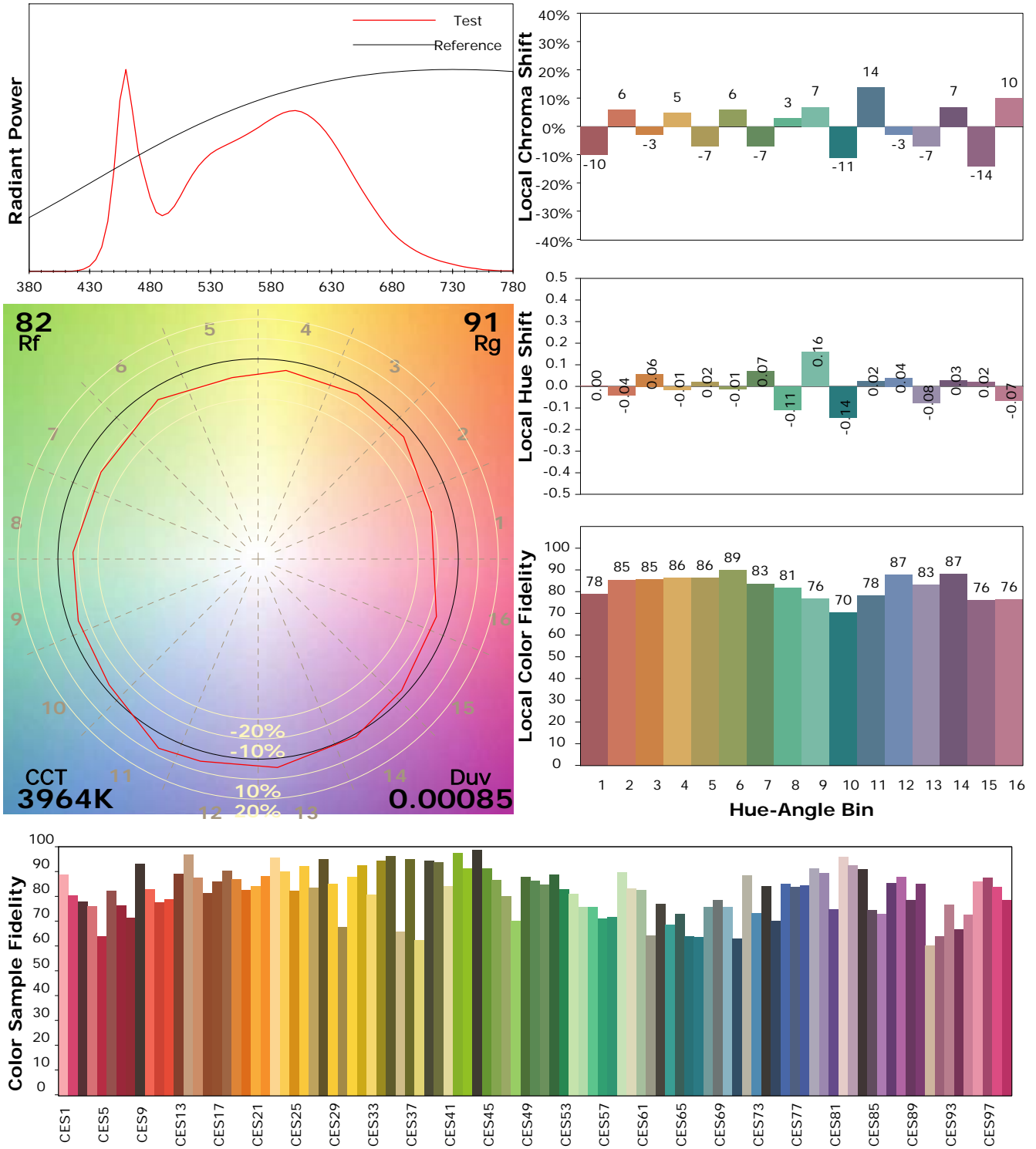
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IES TM-30-18 Color Rendition Report

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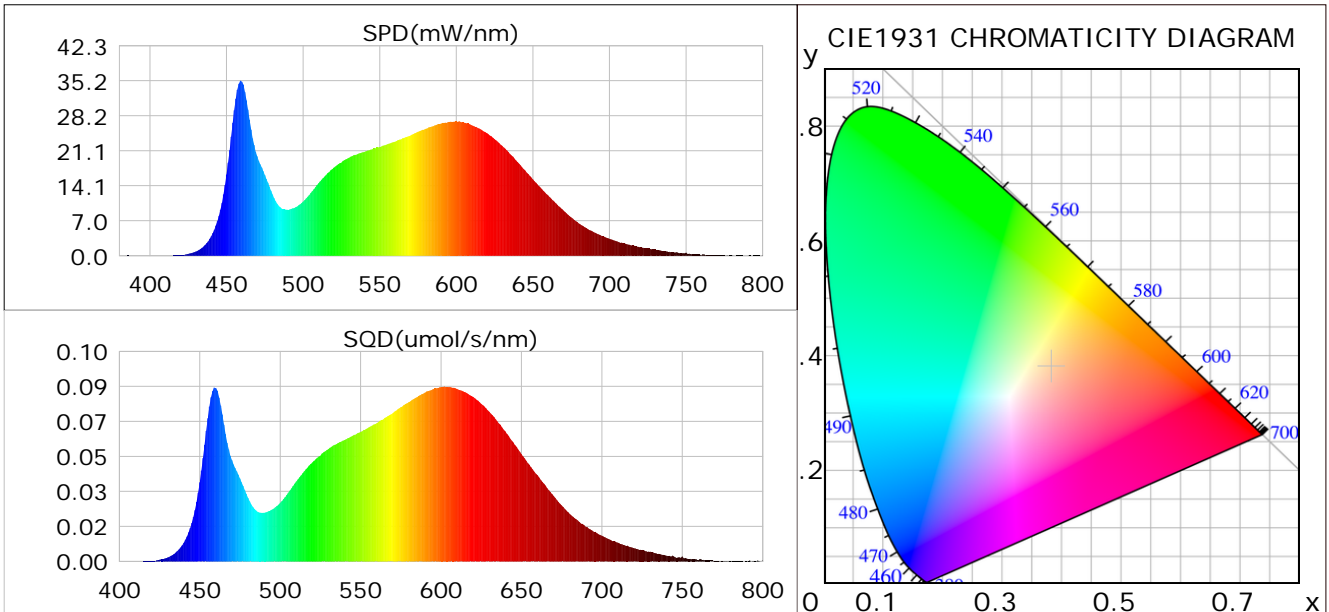
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 Inspector:

Plant optical param data

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 Dominant Wavelength: 578.8nm Color Purity: 0.289
 CRI: $R_a=85.3$



Plant Optical Param

$ \mu_v(lm): 1575.10$	$Q_v(lm.s): 1575.10$
$ \mu_e, \dot{E}(W/nm): 4.80$	$Q_e(J): 4.80$
$ \mu_e(W): 4.72$	$ \mu_{fr}(W): 0.09$
$ \zeta_e: 0.39$	$ \zeta_{fr}: 0.01$
$PPE(umol/s/w): 1.83$	$K_{fr}: 0.04$
$Erb_Ratio: 1.49$	$PPF(umol/s): 22.18$
$PF_{uv}(360-400)(umol/s): 0.00$	$PPF(400-500)(umol/s): 4.04$
$PPF(500-600)(umol/s): 9.97$	$PPF(600-700)(umol/s): 8.18$
$PPF_{fr}(700-800)(umol/s): 0.51$	$PPF.t(umol): 22.18$
$ \mu_{ch-A.t}(J): 0.35$	$ \mu_{ch-A}(W): 0.35$
$ \mu_{ch-B.t}(J): 0.23$	$ \mu_{ch-B}(W): 0.23$
$ \mu_b.t(J): 1.04$	$ \mu_b(W): 1.04$
$ \mu_y.t(J): 2.15$	$ \mu_y(W): 2.15$
$ \mu_r.t(J): 1.57$	$ \mu_r(W): 1.57$

Electric Parameters

Voltage: 230.80V	Current: 0.0550A	Power: 12.13W
Power Factor: 0.9440	Frequency: 49.99Hz	

Condition: $T_x: 19.0^\circ C$, $T_i: 0.0^\circ C$, R.H.: 60%
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