

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-120-8NWM-19W-TRF-RM
 Manufacturer: METOLIGHT
 Buyer: 6961

Product Type: LED-Röhre-Spezial
 Product Number: 1
 Submitted Unit: 102268

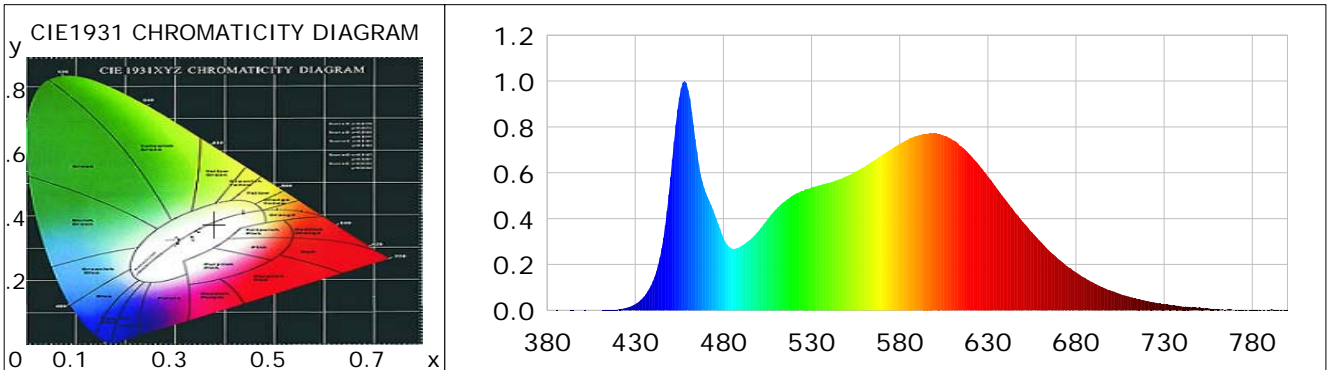
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3792$ $y=0.3754$ $u(u')=0.2248$ $v=0.3339$ $v'=0.5008$
 CCT: $T_c=4025K$ ($duv=-0.00028$) Color Ratio: $R=0.188$ $G=0.769$ $B=0.043$
 Peak Wavelength: 457.9nm Half Bandwidth: 21.8nm
 Dominant Wavelength: 579.1nm Color Purity: 0.265
 CRI: $R_a=84.7$, $avgR(1\sim14)=79.1$, $avgR(1\sim15)=79.1$ TM30: $R_f=82$, $R_g=92$
 GAI: $GAI_BB_8=90.5$, $GAI_BB_15=99.2$, $GAI_EES=71.8$

R1 =85	R2 =95	R3 =95	R4 =81	R5 =84	R6 =91	R7 =83	R8 =65
R9 =16	R10=86	R11=80	R12=61	R13=88	R14=98	R15=79	

Color Quality Scale: $Q_a=83.3$, $Q_f=83.7$, $Q_p=81.9$, $Q_g=90.8$

Q1 =79	Q2 =95	Q3 =84	Q4 =76	Q5 =78	Q6 =80	Q7 =86	Q8 =90
Q9 =97	Q10=94	Q11=89	Q12=87	Q13=86	Q14=75	Q15=77	



Photometric Parameters

Luminous Flux: 2514.3 lm Efficiency: 135.83 lm/W Radiant Power: 7.629 W
 Total mains efficacy: 159.74 lm/W Energy Efficiency Class: D (EU 2019/2015)
 Pupil Flux: 3931.72 Plm Pupil Lumens Per Watt: 212.41 Plm/W Pupil Factor (Kp): 1.564
 Circopic Flux: 8291.23 lm

Electric Parameters

Voltage: 230.00V Current: 0.0850A Power: 18.51W
 Power Factor: 0.9390 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: 46007 (2247) CCD Integration Time: 106.19 ms

Condition: Tx: 18.1°C, Ti: 0.0°C, R.H.: 60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-18 14:53:49
 Inspector:

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0003	0.0181	525	0.5183	29.7923	670	0.2238	12.8627
385	0.0008	0.0486	530	0.5355	30.7773	675	0.1927	11.0738
390	0.0009	0.0494	535	0.5460	31.3837	680	0.1655	9.5129
395	0.0010	0.0549	540	0.5560	31.9553	685	0.1423	8.1764
400	0.0006	0.0353	545	0.5689	32.7004	690	0.1197	6.8817
405	0.0001	0.0069	550	0.5844	33.5885	695	0.1008	5.7925
410	0.0003	0.0149	555	0.6055	34.8047	700	0.0858	4.9300
415	0.0018	0.1037	560	0.6261	35.9851	705	0.0712	4.0947
420	0.0042	0.2391	565	0.6514	37.4416	710	0.0604	3.4742
425	0.0110	0.6342	570	0.6781	38.9771	715	0.0491	2.8207
430	0.0266	1.5297	575	0.7022	40.3602	720	0.0413	2.3738
435	0.0598	3.4359	580	0.7257	41.7091	725	0.0339	1.9474
440	0.1268	7.2880	585	0.7460	42.8808	730	0.0283	1.6284
445	0.2709	15.5729	590	0.7611	43.7456	735	0.0222	1.2780
450	0.5810	33.3958	595	0.7706	44.2898	740	0.0169	0.9690
455	0.9282	53.3497	600	0.7719	44.3671	745	0.0143	0.8228
460	0.9612	55.2499	605	0.7626	43.8329	750	0.0150	0.8599
465	0.6929	39.8264	610	0.7426	42.6811	755	0.0090	0.5148
470	0.5137	29.5291	615	0.7151	41.1005	760	0.0053	0.3062
475	0.4195	24.1117	620	0.6783	38.9843	765	0.0027	0.1574
480	0.3169	18.2138	625	0.6336	36.4149	770	0.0026	0.1501
485	0.2689	15.4583	630	0.5831	33.5150	775	0.0033	0.1920
490	0.2797	16.0758	635	0.5321	30.5825	780	0.0010	0.0570
495	0.3069	17.6422	640	0.4819	27.6986	785	0.0026	0.1472
500	0.3469	19.9397	645	0.4320	24.8308	790	0.0018	0.1020
505	0.3967	22.8021	650	0.3846	22.1072	795	0.0012	0.0692
510	0.4423	25.4220	655	0.3401	19.5460	800	0.0017	0.0963
515	0.4755	27.3313	660	0.2993	17.2028			
520	0.5038	28.9555	665	0.2583	14.8439			

Condition: Tx: 18.1'C, Ti: 0.0'C, R.H.: 60%
 Test Lab:
 Operator: CRE

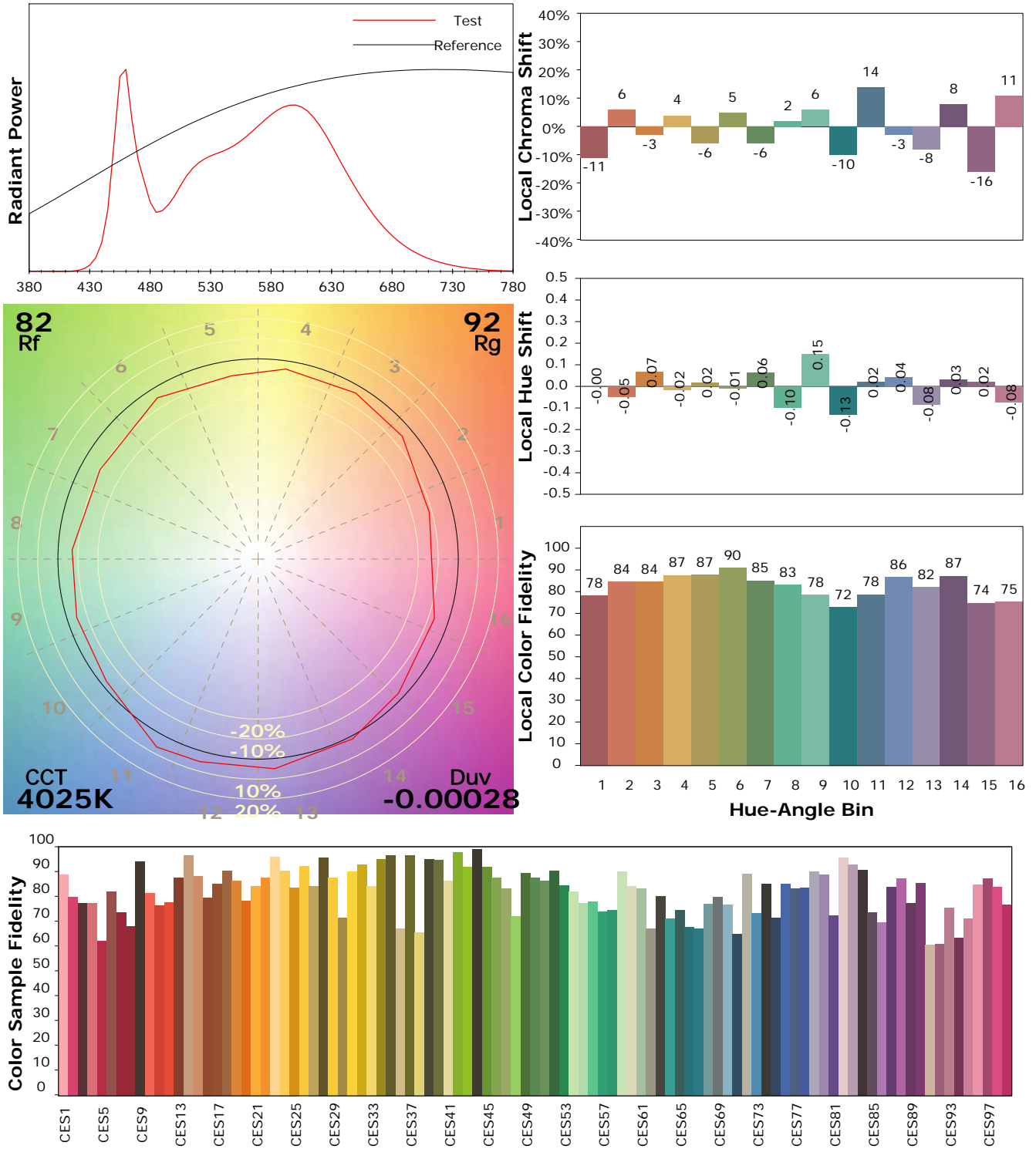
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IES TM-30-18 Color Rendition Report

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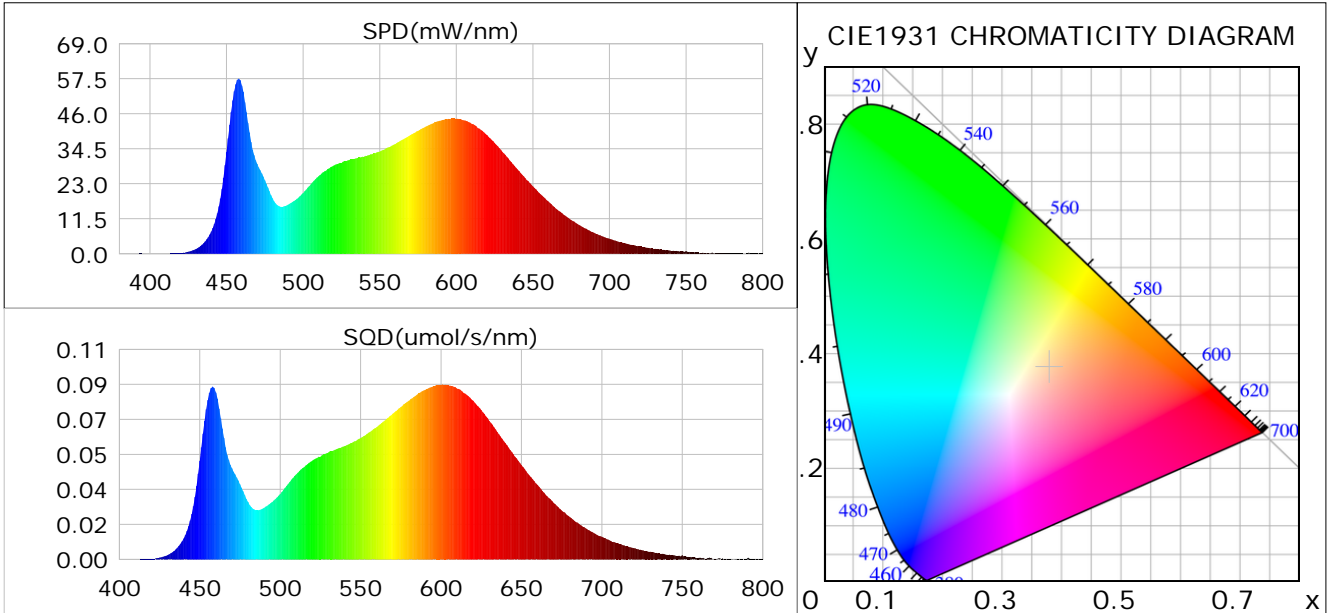
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Plant optical param data

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 Dominant Wavelength: 579.1nm Color Purity: 0.265
 CRI: $R_a=84.7$



Plant Optical Param

$\mu_v(lm)$: 2514.30	$Q_v(lm.s)$: 2514.30
$\mu_e, \dot{E}(W/nm)$: 7.63	$Q_e(J)$: 7.63
$\mu_e(W)$: 7.51	$\mu_{fr}(W)$: 0.12
ζ_e : 0.41	ζ_{fr} : 0.01
PPE(umol/s/w): 1.90	Kfr: 0.04
Erb_Ratio: 1.36	PPF(umol/s): 35.15
PFuv(360-400)(umol/s): 0.00	PPF(400-500)(umol/s): 6.69
PPF(500-600)(umol/s): 16.04	PPF(600-700)(umol/s): 12.42
PPfr(700-800)(umol/s): 0.72	PPF.t(umol): 35.15
$\mu_{ch-A.t}(J)$: 0.55	$\mu_{ch-A}(W)$: 0.55
$\mu_{ch-B.t}(J)$: 0.37	$\mu_{ch-B}(W)$: 0.37
$\mu_b.t(J)$: 1.72	$\mu_b(W)$: 1.72
$\mu_y.t(J)$: 3.47	$\mu_y(W)$: 3.47
$\mu_r.t(J)$: 2.39	$\mu_r(W)$: 2.39

Electric Parameters

Voltage: 230.00V	Current: 0.0850A	Power: 18.51W
Power Factor: 0.9390	Frequency: 49.99Hz	

Condition: $T_x=18.1^\circ C$, $T_i=0.0^\circ C$, R.H.: 60%
 Test Lab:
 Operator: CRE

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