

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-120-8CWM-19W-TRF-RM
 Manufacturer: METOLIGHT
 Buyer: 6852

Product Type: LED-Röhre-TRF
 Product Number: 1
 Submitted Unit: 102270

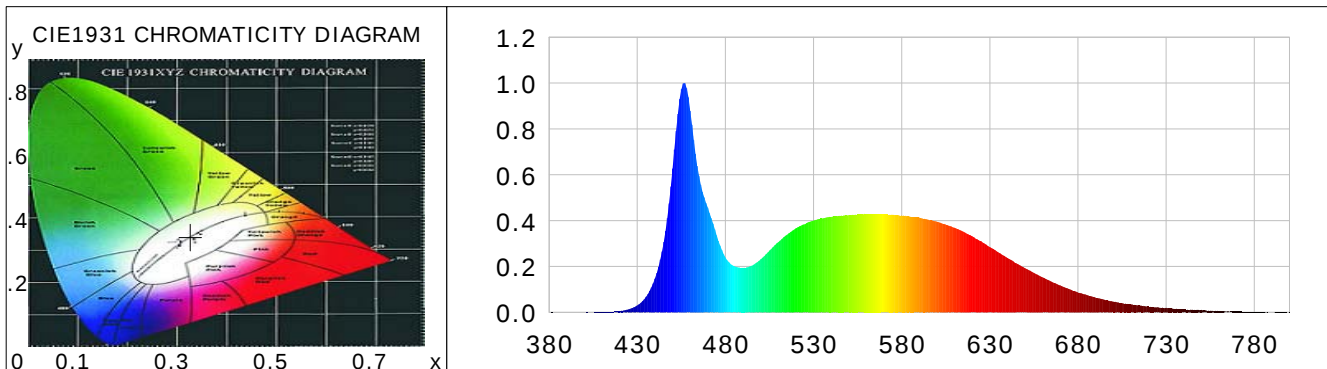
CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3269$ $y=0.3419$ $u(u')=0.0207$ $v=0.3181$ $v'=0.4771$
 CCT: $T_c=5748K$ ($duv=0.00295$) Color Ratio: $R=0.146$ $G=0.799$ $B=0.055$
 Peak Wavelength: 456.5nm Half Bandwidth: 19.7nm
 Dominant Wavelength: 510.5nm Color Purity: 0.020
 CRI: $R_a=83.7$, $avgR(1\sim14)=76.9$, $avgR(1\sim15)=77.1$ TM30: $R_f=81$, $R_g=92$
 GAI: $GAI_BB_8=89.6$, $GAI_BB_15=96.7$, $GAI_EES=83.9$

R1 =83	R2 =92	R3 =93	R4 =79	R5 =81	R6 =85	R7 =86	R8 =70
R9 =17	R10=77	R11=77	R12=52	R13=86	R14=97	R15=80	

Color Quality Scale: $Q_a=80.3$, $Q_f=80.4$, $Q_p=79.7$, $Q_g=90.5$

Q1 =81	Q2 =97	Q3 =78	Q4 =68	Q5 =73	Q6 =76	Q7 =83	Q8 =89
Q9 =97	Q10=89	Q11=83	Q12=83	Q13=83	Q14=74	Q15=77	



Photometric Parameters

Luminous Flux: 2728.8 lm	Efficiency: 148.22 lm/W	Radiant Power: 8.642 W
Total mains efficacy: 174.31 lm/W	Energy Efficiency Class: C (EU 2019/2015)	
Pupil Flux: 4957.87 Plm	Pupil Lumens Per Watt: 269.30 Plm/W	Pupil Factor (Kp): 1.817
Cirtpic Flux: 11315.77 lm		

Electric Parameters

Voltage: 230.40V	Current: 0.0800A	Power: 18.41W
Power Factor: 0.9750	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: 47957 (2293)	CCD Integration Time: 70.10 ms

Condition: Tx:19.2'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-25 15:03:02
 Inspector:

Lightsource Test Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-120-8CWM-19W-TRF-RM
 Manufacturer: METOLIGHT
 Buyer: 6852

Product Type: LED-Röhre-TRF
 Product Number: 1
 Submitted Unit: 102270

WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0002	0.0233	525	0.3840	37.6394	670	0.1174	11.5063
385	0.0006	0.0546	530	0.4002	39.2231	675	0.1013	9.9303
390	0.0005	0.0475	535	0.4095	40.1398	680	0.0872	8.5458
395	0.0002	0.0212	540	0.4163	40.8009	685	0.0754	7.3913
400	0.0005	0.0517	545	0.4214	41.3043	690	0.0638	6.2536
405	0.0010	0.0982	550	0.4239	41.5553	695	0.0548	5.3676
410	0.0015	0.1505	555	0.4272	41.8729	700	0.0473	4.6332
415	0.0026	0.2580	560	0.4287	42.0182	705	0.0404	3.9649
420	0.0062	0.6113	565	0.4290	42.0513	710	0.0352	3.4549
425	0.0132	1.2950	570	0.4273	41.8801	715	0.0302	2.9582
430	0.0306	3.0034	575	0.4259	41.7478	720	0.0255	2.4980
435	0.0678	6.6502	580	0.4225	41.4181	725	0.0229	2.2466
440	0.1469	14.3982	585	0.4163	40.8021	730	0.0198	1.9446
445	0.3072	30.1131	590	0.4134	40.5236	735	0.0151	1.4811
450	0.6271	61.4663	595	0.4047	39.6643	740	0.0128	1.2505
455	0.9732	95.3911	600	0.3957	38.7895	745	0.0116	1.1321
460	0.8791	86.1715	605	0.3831	37.5557	750	0.0111	1.0853
465	0.5952	58.3443	610	0.3691	36.1752	755	0.0074	0.7206
470	0.4567	44.7674	615	0.3520	34.4995	760	0.0057	0.5554
475	0.3363	32.9648	620	0.3317	32.5105	765	0.0051	0.5037
480	0.2396	23.4904	625	0.3100	30.3876	770	0.0031	0.3033
485	0.2013	19.7276	630	0.2845	27.8859	775	0.0024	0.2359
490	0.1942	19.0380	635	0.2605	25.5385	780	0.0014	0.1387
495	0.2034	19.9408	640	0.2367	23.2027	785	0.0022	0.2198
500	0.2315	22.6938	645	0.2142	20.9972	790	0.0000	0.0012
505	0.2697	26.4323	650	0.1923	18.8517	795	0.0016	0.1573
510	0.3068	30.0688	655	0.1719	16.8527	800	0.0015	0.1475
515	0.3388	33.2128	660	0.1523	14.9281			
520	0.3665	35.9252	665	0.1338	13.1122			

Condition: Tx:19.2'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

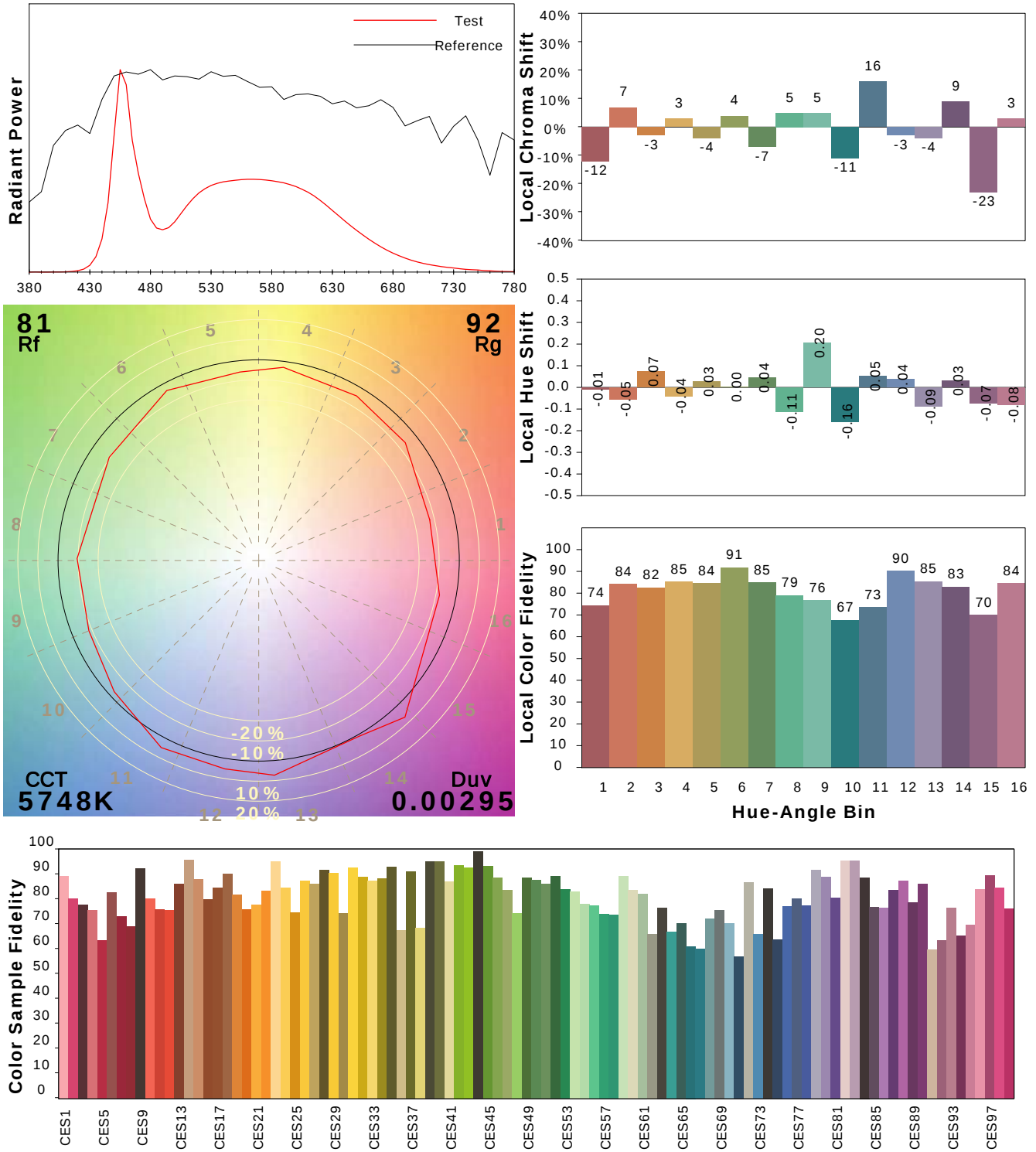
Test Device: Lisun LMS-9000B
 Test Time: 2021-01-25 15:03:02
 Inspector:

IES TM-30-18 Color Rendition Report

Product Information

Product Category: LED-Röhre
 Product Spec: LEDtube-120-8CWM-19W-TRF-RM
 Manufacturer: METOLIGHT
 Buyer: 6852

Product Type: LED-Röhre-TRF
 Product Number: 1
 Submitted Unit: 102270



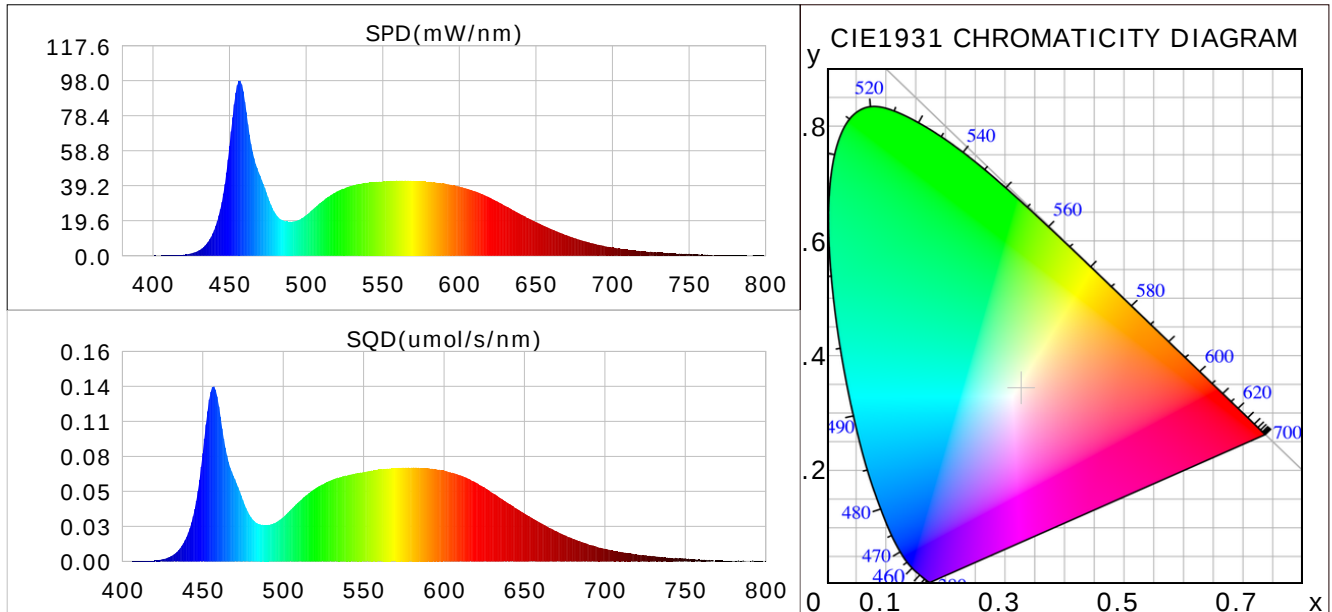
Condition: Tx:19.2'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-25 15:03:02
 Inspector:

Plant optical param data

CIE Colorimetric Parameters

Chromaticity coordinates: $x=0.3269$ $y=0.3419$ $u(u')=0.2027$ $v=0.3181$ $v'=0.4771$
 CCT: $T_c=5748K$ ($duv=0.00295$) Color Ratio: $R=0.146$ $G=0.799$ $B=0.055$
 Peak Wavelength: 456.5nm Half Bandwidth: 19.7nm
 Dominant Wavelength: 510.5nm Color Purity: 0.020
 CRI: Ra= 83.7



Plant Optical Param

$\mu_v(lm)$: 2728.80	$Q_v(lm.s)$: 2728.80
$\mu_e, \dot{E}(W/nm)$: 8.64	$Q_e(J)$: 8.64
$\mu_e(W)$: 8.51	$\mu_{fr}(W)$: 0.14
$\dot{C}_e$: 0.46	$\dot{C}_{fr}$: 0.01
$PPE(umol/s/w)$: 2.10	K_{fr} : 0.04
E_{rb_Ratio} : 0.75	$PPF(umol/s)$: 38.73
$PF_{uv}(360-400)(umol/s)$: 0.00	$PPF(400-500)(umol/s)$: 10.29
$PPF(500-600)(umol/s)$: 17.83	$PPF(600-700)(umol/s)$: 10.61
$PF_{fr}(700-800)(umol/s)$: 0.80	$PPF.t(umol)$: 38.73
$\mu_{ch-A.t}(J)$: 0.64	$\mu_{ch-A}(W)$: 0.64
$\mu_{ch-B.t}(J)$: 0.50	$\mu_{ch-B}(W)$: 0.50
$\mu_{b.t}(J)$: 2.66	$\mu_b(W)$: 2.66
$\mu_{y.t}(J)$: 3.88	$\mu_y(W)$: 3.88
$\mu_{r.t}(J)$: 2.04	$\mu_r(W)$: 2.04

Electric Parameters

Voltage: 230.40V	Current: 0.0800A	Power: 18.41W
Power Factor: 0.9750	Frequency: 49.99Hz	

Condition: Tx:19.2'C, Ti:0.0'C, R.H.:60%
 Test Lab:
 Operator: CRE

Test Device: Lisun LMS-9000B
 Test Time: 2021-01-25 15:03:02
 Inspector: