



Plant Growth Lamp Test Report

Report No: 8**Test Time:** 2024-06-10 11:31:04

Category: Growth

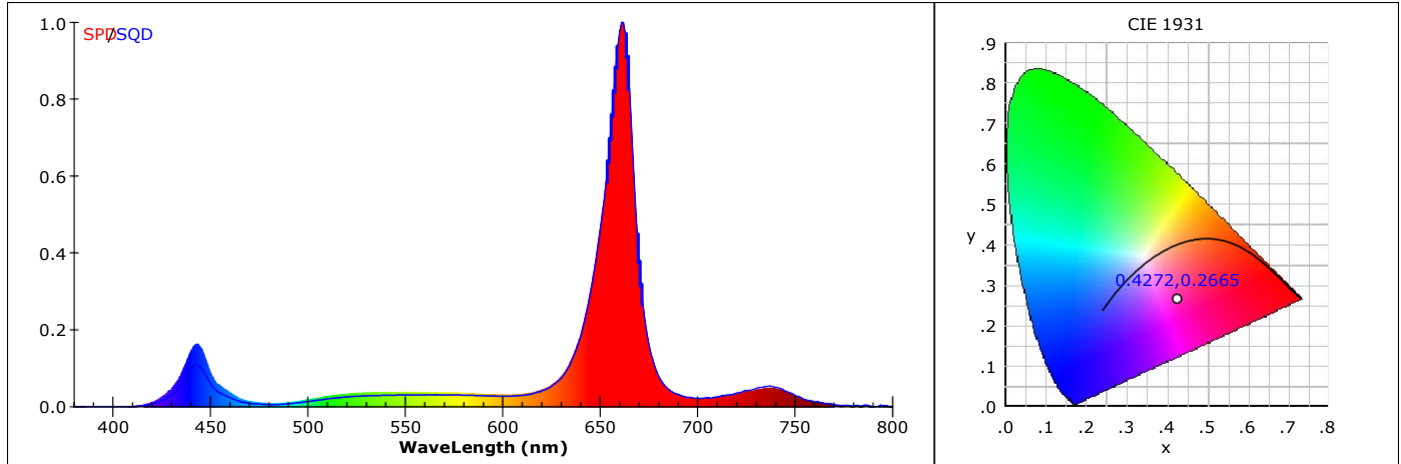
Type: LED

Spec: Hydra Growth 400W 272-230

Number: 8

Manufacturer: Industrial Lighting Ltd.

Submitter:



CIE Colorimetric Parameters

CIE(x,y): 0.4272,0.2665

CIE(u,v): 0.3198,0.2992

CIE(u',v'): 0.3198,0.4488

CCT: 1869 K (Duv=-0.060739)

Dominant Wavelength: 699.3 nm

Color Purity: 0.491

Peak Wavelength: 661.4 nm

Half Width: 17.4 nm

Color Ratio: R:0.426, G:0.542, B:0.032

Color Render Index: Ra:29.3, avgR(1~14):9.3, avgR(1~15):7.8

R1: 18

R2: 52

R3: 80

R4: 19

R5: 8

R6: 45

R7: 53

R8: -41

R9: -166

R10: 2

R11: -3

R12: -41

R13: 18

R14: 85

R15: -13

Photometric Parameters

Luminous Flux: 27246.14 lm

Efficiency: 69.96 lm/W

Radiant Power: 248.108 W

Radiant Efficiency (η): 0.637Photosynthetical Photon Flux (Φ_p): 1199.784 $\mu\text{mol/s}$ Photosynthetic Photon Efficacy (K_p): 3.1 $\mu\text{mol/J}$ Photosynthetical Radiant Flux (Φ_e): 232.059 WPhotosynthetic Radiant Efficiency (η_e): 0.596Photon Flux (400~500nm): 108.136 $\mu\text{mol/s}$ Photon Flux (500~600nm): 119.791 $\mu\text{mol/s}$ Photon Flux (600~700nm): 971.857 $\mu\text{mol/s}$ Photon Flux (PFfr 700~800nm): 97.972 $\mu\text{mol/s}$ Photon Flux (PFuv 280~400nm): 0.200 $\mu\text{mol/s}$ Photon Flux (PF_PBAR): 1297.956 $\mu\text{mol/s}$

Radiant Flux (400~500nm): 28.943 W

Radiant Flux (500~600nm): 25.995 W

Radiant Flux (600~700nm): 177.121 W

Radiant Flux (700~800nm): 15.988 W

Radiant Flux (280~400nm): 0.062 W

R/B: 6.1 R/FR: 11.1

YPF (320~780nm): 1101.404 $\mu\text{mol/s}$ YPF (400~500nm): 80.246 $\mu\text{mol/s}$ YPF (500~600nm): 103.558 $\mu\text{mol/s}$ YPF (600~700nm): 902.363 $\mu\text{mol/s}$ YPF (700~780nm): 15.122 $\mu\text{mol/s}$ YPF (320~400nm): 0.114 $\mu\text{mol/s}$

Radiant Flux (Chl-A): 54.234 W

Radiant Flux (Chl-B): 27.928 W

Electric Parameters

Voltage: 229.800 V

Current: 1.7260 A

Power: 389.470 W

Power Factor: 0.9810

Frequency: 49.99 Hz

Geometry: 4 π , m

Self-absorption Factor: 1.445

Photometric Method: sphere-spectroradiometer

Warmup Time: 29 Minutes 50 Sec.

Integration Time: 2 ms

Peak of Signal: 48049

Spectroradiometer: LMS-9000A

Digital Power Meter: LS2010

Power Source: LSP Series

Test Lab: TU - Gabrovo

Testing Environment: Ts:28.6°C, Ta:29.4°C,

Operator: Ivaylo Stoyanov

Approver:



IES TM-30-18 Color Rendition Report

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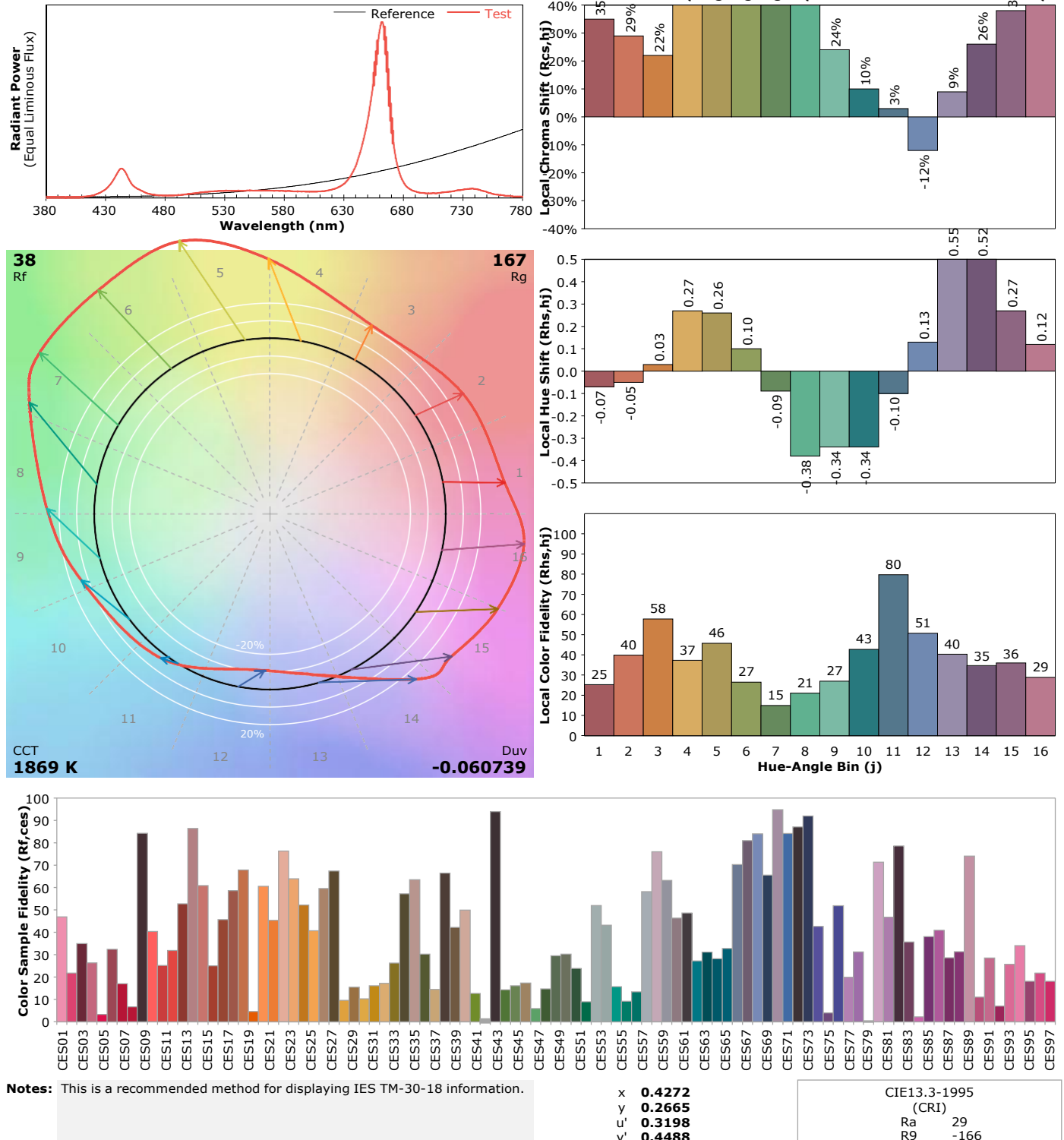
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Spectral Power Distribution Data

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WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0000	0.2242	525	0.0359	270.1430	670	0.3807	2861.6040
385	0.0010	7.5350	530	0.0370	278.2814	675	0.1655	1243.8353
390	0.0007	5.4344	535	0.0377	283.0392	680	0.0791	594.3168
395	0.0001	0.6980	540	0.0383	287.5700	685	0.0459	345.2889
400	0.0002	1.6391	545	0.0380	285.5079	690	0.0320	240.5563
405	0.0005	4.1003	550	0.0387	290.5520	695	0.0248	186.5723
410	0.0017	13.0409	555	0.0380	285.5980	700	0.0221	166.2180
415	0.0052	38.7730	560	0.0383	287.5862	705	0.0234	175.8612
420	0.0124	93.4560	565	0.0381	286.2779	710	0.0246	185.2534
425	0.0268	201.5160	570	0.0370	278.2559	715	0.0292	219.7417
430	0.0491	368.9980	575	0.0368	276.8231	720	0.0340	255.5611
435	0.0885	665.0814	580	0.0353	265.3348	725	0.0404	303.9405
440	0.1487	1118.0498	585	0.0349	262.5669	730	0.0446	335.1546
445	0.1570	1179.8732	590	0.0337	253.0493	735	0.0485	364.8584
450	0.0917	689.3777	595	0.0330	248.1023	740	0.0472	354.9289
455	0.0541	407.0104	600	0.0317	238.6049	745	0.0377	283.3535
460	0.0362	272.4350	605	0.0319	239.9367	750	0.0273	205.3858
465	0.0210	157.8098	610	0.0335	252.0872	755	0.0174	130.9666
470	0.0142	106.8862	615	0.0381	286.1607	760	0.0119	89.1177
475	0.0105	79.2860	620	0.0456	343.0219	765	0.0083	62.0466
480	0.0091	68.3108	625	0.0585	440.1040	770	0.0055	41.4671
485	0.0093	69.7948	630	0.0809	608.4828	775	0.0040	30.3212
490	0.0115	86.1847	635	0.1232	926.3839	780	0.0027	20.2833
495	0.0151	113.1539	640	0.1946	1462.5997	785	0.0035	26.2283
500	0.0194	145.6016	645	0.3111	2338.7288	790	0.0007	4.9637
505	0.0236	177.5353	650	0.4749	3569.9712	795	0.0023	17.5245
510	0.0281	210.9269	655	0.7189	5403.7236	800	0.0006	4.7678
515	0.0311	233.6914	660	1.0000	7516.8232			
520	0.0339	254.6127	665	0.8415	6325.5142			



Warmup Curve

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