LM-79-08 Test Report

For

ASMART LIGHT CO., LTD

(Brand Name: ASMART)

506 N GARFIELD AVE SUITE#210 ALHAMBRA CA 91801

Outdoor Pole/Arm-Mounted Area and Roadway Luminaires

Architectural Flood and Spot Luminaires

Model name(s): AST-S-G12C-150WBT3DH3-abcdefW

Remark: "a" can be any two letters for lamp colors; "b" can be "3RP", "3NP", "5RP", "5NP", "7RP", "7NP" for Photocontrol type provided or blank for no Photocontrol provided; "c" can be "10SP", "20SP" for Surge-Protective Device type provided or blank for no Surge-Protective Device provided; "d" can be "DM", "DM1", "DP", "DP1" or blank for DC Motion Sensor, DC PIR Sensor provided or not; "e" can be "AM", "DM", "DM1", "YM", "A&D", "FM" for mounting bracket type; "f" can be any digits for CCT; "W" for wattage adjustable.

Representative (Tested) Model:
AST-S-G12C-150WBT3DH3-abcde30W
AST-S-G12C-150WBT3DH3-abcde40W
AST-S-G12C-150WBT3DH3-abcde50W

Model Different: All construction and rating are the same, except CCT

Test & Report By:

Winny Wu

Engineer: Winny Wu

Date: 2023-05-31

Review By:

Jason Luo

Manager: Jason Luo

1.1 Product Information:

Organization Name	ASMART LIGHT CO., LTD	
Brand Name	ASMART	
Model Number	AST-S-G12C-150WBT3DH3-abcdefW	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Pole/Arm-Mounted Area and Roadway Luminaires Architectural Flood and Spot Luminaires	
Rated Voltage / Frequency	277-480Vac, 50/60 Hz	
Nominal Power	150W(Power adjustable)	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K,4000K,5000K(Color tunable)	
LED Manufacturer	Lumileds Holding B.V.	
LED Model	L128-3080RC35003P1 L128-5080RC35003P1	
Sample Number	UTC2304058E-F1-3	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s
Photo		
		

1.2 Test Specifications:

Date of Receipt	2023-05-10
Date of Test	2023-05-12
Test item	1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	BL-QP-033

1.3 Test Methods

1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals.
Goniophotometer far field detector f1'=1.42%, Test distance: 14.14m

2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25º C ± 1º C. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.
Self-absorption:
AST-S-G12C-150WBT3DH3-abcde30W:1.026
AST-S-G12C-150WBT3DH3-abcde40W:1.026
AST-S-G12C-150WBT3DH3-abcde50W:1.026

3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at 25º C ± 1º C. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.

2.1 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2023-05-12	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AST-S-G12C-150WBT3DH3-abcde30 W		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
UTC230405 8E-F 1	277.0	60	0.553	152.59	0.996	8.12
	480.0	60	0.333	151.8	0.949	10.91
				DLC Pass Criteria	>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

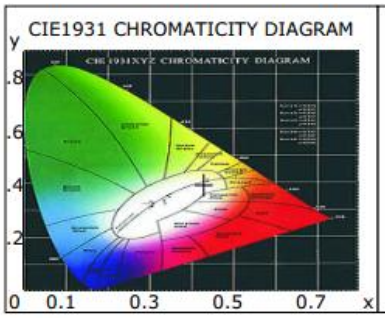
Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
CCT (K)	3047
Duv	-0.0015
Chromaticity (x, y)	x=0.4314 y=0.3984
Chromaticity (u', v')	u(u')=0.2495 v'=0.5183
Color Rendering Index (CRI)	82
R9	1
Rf	84
Rg	97
Rcs,h1(%)	-12

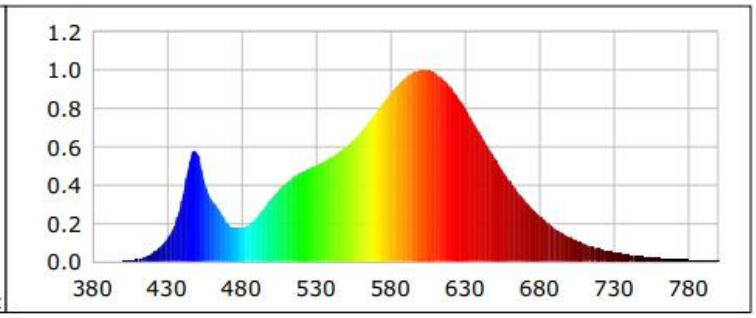
R1	80	R9	1
R2	90	R10	78
R3	96	R11	80
R4	80	R12	73
R5	81	R13	82
R6	89	R14	98
R7	81	R15	72
R8	56	--	--
--	--	--	--
--	--	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	277.0	480.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	19685.4	19496.7	>=10000(-10%)
Luminous Efficacy (lm/W)	129.01	128.44	Premium: >= 120(-3%)
Most worst Luminous/Highest	127.77		
Zonal lumens in the 0-90° zone (%)	100	--	Category 1: >=100(-1) Category 2: >=85(-3)
Zonal lumens in the 80-90°zone (%)	2.9	--	<=10(+3)
Beam Angle (°)	123.8	--	--
Center Beam Candle Power (cd)	4480	--	--

Spectral Power Distribution & Chromaticity Diagram



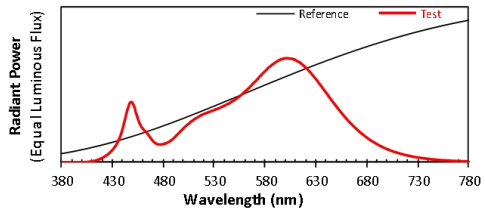


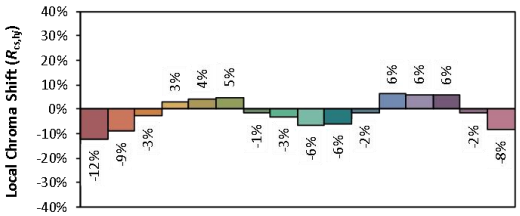
WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0002	0.0998	535	0.4839	203.6192	690	0.3201	134.7206
385	0.0003	0.1223	540	0.5021	211.2920	695	0.2768	116.4859
390	0.0002	0.0792	545	0.5203	218.9432	700	0.2391	100.6225
395	0.0006	0.2567	550	0.5450	229.3323	705	0.2051	86.3084
400	0.0016	0.6581	555	0.5673	238.7139	710	0.1759	74.0030
405	0.0041	1.7291	560	0.5979	251.6223	715	0.1509	63.5226
410	0.0106	4.4595	565	0.6340	266.8180	720	0.1279	53.8331
415	0.0232	9.7497	570	0.6770	284.9016	725	0.1095	46.0912
420	0.0428	18.0091	575	0.7232	304.3332	730	0.0933	39.2589
425	0.0728	30.6314	580	0.7717	324.7508	735	0.0793	33.3687
430	0.1177	49.5409	585	0.8252	347.2703	740	0.0673	28.3413
435	0.1890	79.5272	590	0.8750	368.2214	745	0.0567	23.8592
440	0.3170	133.4034	595	0.9198	387.0644	750	0.0491	20.6705
445	0.5109	215.0074	600	0.9576	402.9951	755	0.0414	17.4116
450	0.5695	239.6503	605	0.9862	414.9958	760	0.0356	14.9671
455	0.4239	178.3650	610	0.9995	420.5976	765	0.0293	12.3276
460	0.3239	136.3190	615	0.9968	419.4872	770	0.0245	10.3219
465	0.2706	113.8738	620	0.9819	413.2186	775	0.0209	8.7966
470	0.2048	86.1806	625	0.9531	401.0647	780	0.0184	7.7498
475	0.1735	72.9934	630	0.9113	383.4903	785	0.0151	6.3643
480	0.1763	74.1861	635	0.8598	361.8017	790	0.0140	5.8719
485	0.1943	81.7484	640	0.8006	336.9210	795	0.0116	4.8672
490	0.2290	96.3755	645	0.7368	310.0606	800	0.0092	3.8626
495	0.2779	116.9433	650	0.6707	282.2498			
500	0.3283	138.1578	655	0.6032	253.8204			
505	0.3716	156.3638	660	0.5393	226.9661			
510	0.4111	172.9783	665	0.4776	201.0030			
515	0.4403	185.2782	670	0.4203	176.8790			
520	0.4638	195.1910	675	0.3670	154.4241			
525	0.4839	203.6192	680	0.3201	134.7206			
530	0.5021	211.2920	685	0.2768	116.4859			

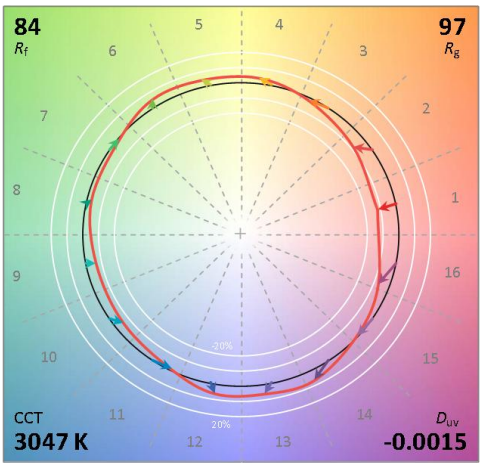
TM30

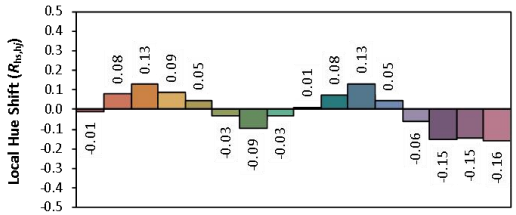
ANSI/IES TM-30-18 Color Rendition Report

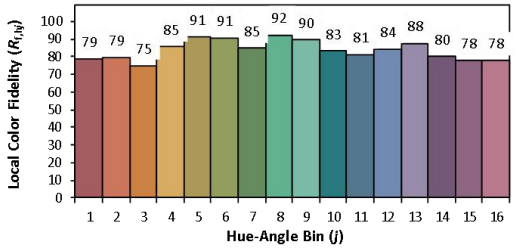
Source:	L128-3080RC35003P1	Manufacturer:	ASMART LIGHT CO., LTD
Date:	2023/5/12	Model:	AST-S-G12C-150WBT3DH3-abcde30W

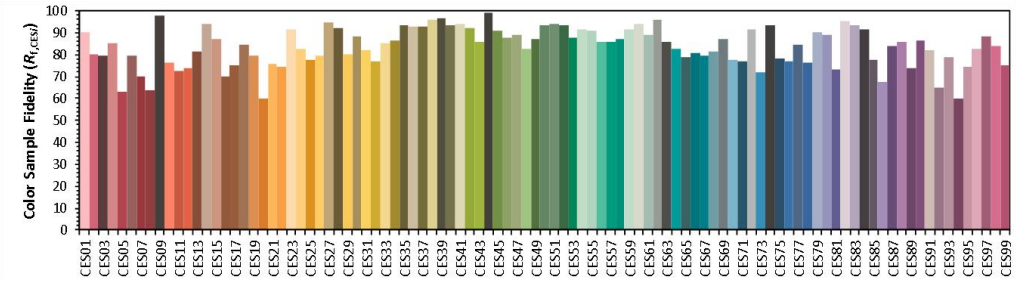












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4314
y	0.3983
u'	0.2495
v'	0.5183

CIE 13.3-1995 (CRI)

R_a	82
R_9	1

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Zonal Lumen Tabulation

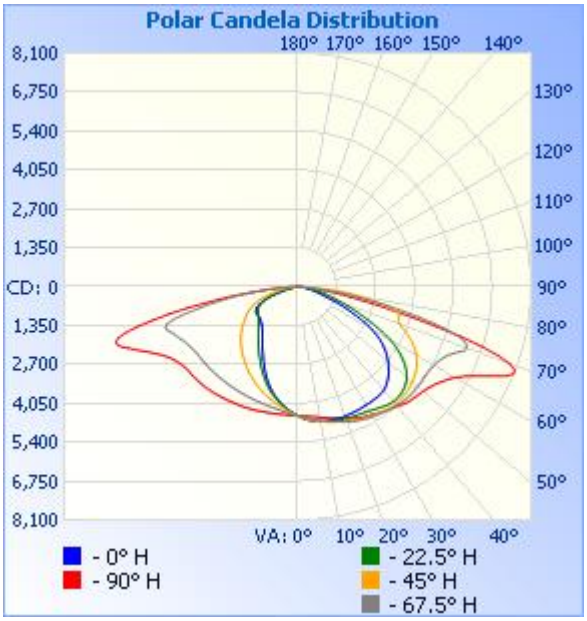
Zonal Lumen Summary

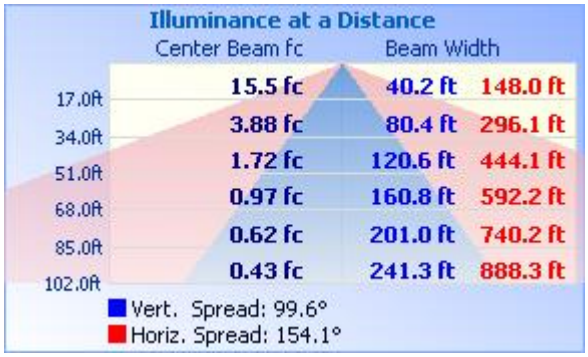
Zone	Lumens	% Lamp	% Luminaire
0-30	3,670.8	18.6%	18.6%
0-40	6,318.9	32.1%	32.1%
0-60	12,976.6	65.9%	65.9%
60-90	6,708.0	34.1%	34.1%
70-100	3,186.3	16.2%	16.2%
90-120	0	0%	0%
0-90	19,684.6	100%	100%
90-180	0	0%	0%
0-180	19,684.6	100%	100%

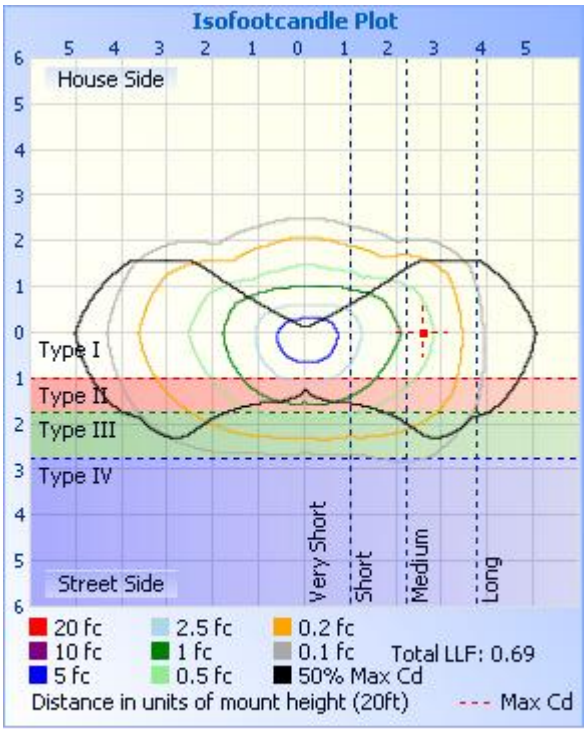
Lumens Per Zone

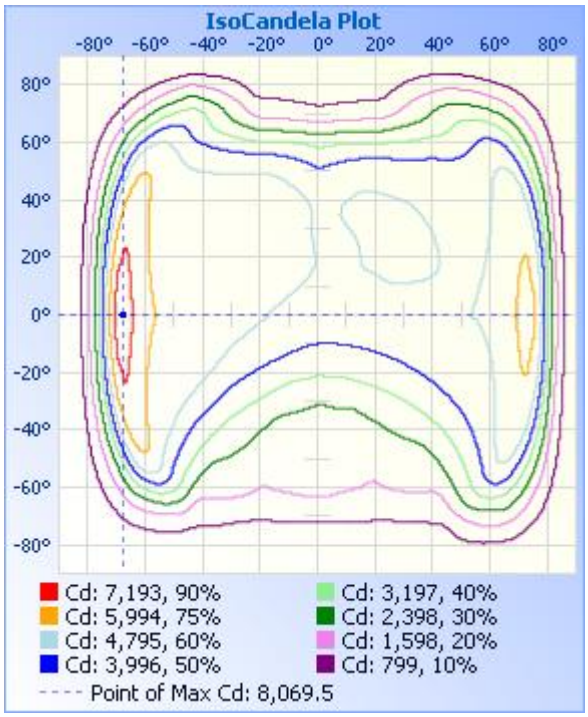
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	426.1	2.2%	90-100	0	0%
10-20	1,249.7	6.3%	100-110	0	0%
20-30	1,995.0	10.1%	110-120	0	0%
30-40	2,648.1	13.5%	120-130	0	0%
40-50	3,179.6	16.2%	130-140	0	0%
50-60	3,478.1	17.7%	140-150	0	0%
60-70	3,521.7	17.9%	150-160	0	0%
70-80	2,619.7	13.3%	160-170	0	0%
80-90	566.6	2.9%	170-180	0	0%

Photometric Data









Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	4480	4480	4480	4480	4480	4480	4480	4480	4480	4480	4480	4480	4480	4480	4480	4480	4480
1	4517	4517	4515	4503	4484	4470	4459	4442	4440	4436	4450	4458	4475	4494	4505	4515	4517
2	4557	4554	4545	4528	4489	4464	4434	4403	4396	4396	4416	4437	4468	4504	4532	4545	4557
3	4598	4586	4577	4548	4498	4457	4412	4365	4355	4354	4385	4417	4466	4514	4557	4572	4598
4	4620	4617	4603	4570	4513	4450	4387	4321	4302	4305	4347	4401	4468	4526	4577	4597	4620
5	4652	4643	4632	4593	4518	4449	4365	4284	4249	4258	4314	4384	4465	4532	4596	4624	4652
6	4671	4670	4660	4617	4536	4446	4339	4232	4199	4207	4273	4365	4464	4543	4613	4643	4671
7	4689	4694	4679	4642	4549	4447	4314	4192	4150	4159	4238	4350	4469	4557	4632	4664	4689
8	4707	4716	4712	4663	4563	4447	4294	4149	4090	4108	4203	4334	4468	4567	4647	4682	4707
9	4723	4736	4730	4691	4583	4446	4266	4105	4029	4057	4169	4322	4477	4583	4658	4698	4723
10	4738	4751	4753	4721	4604	4449	4246	4061	3970	4003	4142	4306	4478	4598	4674	4706	4738
11	4747	4769	4777	4741	4632	4453	4225	4006	3909	3947	4102	4291	4479	4609	4687	4720	4747
12	4760	4781	4801	4767	4655	4455	4202	3956	3847	3895	4070	4280	4484	4622	4702	4728	4760
13	4771	4796	4818	4790	4674	4455	4178	3906	3784	3838	4034	4271	4486	4635	4708	4735	4771
14	4775	4808	4844	4817	4698	4467	4159	3849	3710	3779	3997	4264	4494	4647	4718	4738	4775
15	4778	4818	4862	4843	4722	4474	4139	3797	3646	3718	3964	4254	4502	4657	4732	4744	4778
16	4778	4825	4881	4870	4745	4484	4114	3740	3562	3656	3933	4243	4506	4668	4740	4748	4778
17	4786	4836	4898	4899	4772	4500	4090	3676	3484	3582	3892	4234	4515	4684	4748	4751	4786
18	4788	4845	4917	4928	4807	4512	4066	3614	3407	3514	3860	4222	4525	4701	4754	4754	4788
19	4790	4857	4944	4965	4843	4522	4043	3549	3322	3444	3825	4215	4531	4711	4760	4755	4790
20	4784	4868	4962	4989	4871	4531	4012	3487	3232	3373	3785	4213	4541	4727	4765	4757	4784
21	4782	4877	4991	5017	4909	4543	3986	3421	3147	3303	3752	4207	4547	4735	4775	4760	4782
22	4776	4890	5010	5041	4935	4560	3953	3353	3063	3230	3716	4202	4559	4743	4788	4761	4776
23	4774	4898	5035	5066	4963	4574	3921	3277	2974	3154	3673	4192	4565	4761	4801	4762	4774
24	4771	4908	5055	5092	4990	4586	3891	3208	2894	3080	3636	4188	4576	4767	4807	4758	4771
25	4768	4915	5073	5109	5020	4595	3861	3140	2813	3014	3595	4182	4576	4781	4816	4760	4768
26	4764	4922	5096	5126	5043	4611	3833	3075	2726	2943	3556	4177	4586	4789	4819	4761	4764
27	4758	4931	5113	5148	5066	4624	3802	3000	2645	2868	3519	4175	4592	4795	4832	4763	4758
28	4754	4946	5129	5174	5093	4636	3768	2930	2575	2801	3477	4171	4596	4803	4841	4768	4754

29	4749	4963	5152	5194	5111	4650	3732	2860	2503	2736	3438	4170	4600	4812	4852	4774	4749
30	4743	4978	5168	5206	5130	4664	3700	2797	2434	2673	3398	4164	4608	4818	4862	4781	4743
31	4742	4997	5189	5220	5154	4675	3666	2735	2362	2613	3356	4160	4623	4820	4875	4790	4742
32	4744	5022	5203	5237	5187	4688	3628	2668	2299	2543	3317	4156	4632	4830	4888	4799	4744
33	4732	5045	5220	5253	5209	4700	3589	2607	2238	2488	3272	4155	4635	4828	4896	4813	4732
34	4729	5068	5238	5269	5234	4722	3554	2551	2183	2433	3234	4157	4651	4836	4911	4820	4729
35	4725	5097	5257	5290	5258	4733	3522	2491	2130	2373	3193	4155	4656	4835	4922	4837	4725
36	4724	5123	5270	5310	5285	4748	3485	2434	2075	2318	3151	4156	4668	4832	4933	4850	4724
37	4711	5148	5288	5322	5311	4767	3455	2378	2027	2270	3112	4154	4680	4835	4942	4859	4711
38	4702	5172	5300	5337	5338	4781	3414	2318	1986	2216	3070	4152	4688	4833	4955	4872	4702
39	4684	5182	5305	5352	5374	4797	3377	2262	1946	2164	3032	4150	4704	4831	4953	4879	4684
40	4663	5190	5308	5364	5404	4822	3345	2208	1910	2114	2989	4154	4708	4831	4955	4881	4663
41	4636	5195	5313	5384	5442	4840	3311	2160	1876	2071	2947	4154	4714	4828	4949	4877	4636
42	4594	5192	5305	5400	5484	4858	3276	2111	1847	2026	2904	4156	4727	4821	4940	4872	4594
43	4550	5178	5298	5410	5516	4883	3236	2062	1825	1988	2862	4158	4733	4817	4928	4864	4550
44	4500	5171	5285	5415	5548	4908	3197	2024	1802	1943	2824	4160	4741	4811	4908	4845	4500
45	4444	5141	5277	5417	5573	4936	3164	1988	1786	1910	2782	4161	4745	4805	4893	4824	4444
46	4384	5116	5259	5421	5586	4963	3123	1955	1765	1882	2742	4163	4750	4794	4870	4795	4384
47	4317	5081	5242	5424	5601	4982	3088	1922	1748	1843	2696	4168	4762	4788	4847	4763	4317
48	4245	5041	5223	5424	5616	5007	3046	1892	1736	1814	2649	4170	4766	4776	4820	4724	4245
49	4175	4997	5198	5424	5638	5020	3005	1867	1723	1785	2610	4173	4771	4755	4786	4677	4175
50	4104	4937	5182	5422	5672	5038	2963	1843	1715	1763	2565	4171	4780	4737	4758	4630	4104
51	4023	4862	5158	5423	5695	5058	2914	1826	1704	1743	2520	4175	4780	4718	4725	4563	4023
52	3943	4787	5127	5419	5728	5073	2855	1798	1698	1723	2469	4177	4782	4700	4687	4495	3943
53	3857	4699	5100	5411	5770	5085	2803	1778	1702	1703	2425	4176	4794	4678	4649	4421	3857
54	3761	4602	5060	5406	5820	5109	2756	1763	1705	1688	2374	4180	4803	4659	4604	4337	3761
55	3653	4477	5027	5406	5875	5136	2693	1747	1699	1677	2326	4186	4827	4636	4563	4241	3653
56	3548	4351	4983	5405	5941	5162	2636	1733	1686	1659	2268	4190	4848	4617	4509	4126	3548
57	3431	4218	4935	5408	6018	5194	2583	1705	1689	1649	2220	4203	4879	4594	4456	4008	3431
58	3287	4075	4877	5424	6102	5236	2529	1673	1693	1612	2167	4216	4925	4584	4399	3883	3287
59	3143	3915	4814	5444	6186	5281	2476	1644	1703	1600	2121	4234	4963	4571	4341	3735	3143

60	2982	3733	4754	5461	6302	5341	2420	1634	1666	1583	2071	4253	5019	4563	4276	3579	2982
61	2804	3515	4688	5489	6455	5385	2373	1618	1644	1579	2024	4280	5076	4555	4204	3383	2804
62	2614	3309	4615	5522	6610	5442	2323	1561	1624	1532	1975	4304	5164	4549	4128	3191	2614
63	2392	3089	4519	5568	6811	5489	2268	1531	1613	1497	1928	4331	5250	4552	4055	2987	2392
64	2191	2846	4435	5630	7057	5552	2186	1491	1511	1468	1874	4366	5353	4573	3961	2773	2191
65	2011	2630	4326	5698	7334	5620	2111	1446	1460	1444	1813	4398	5471	4592	3862	2539	2011
66	1839	2428	4212	5784	7647	5695	2008	1368	1410	1357	1740	4448	5604	4617	3749	2338	1839
67	1654	2246	4104	5900	7915	5814	1940	1311	1291	1303	1694	4496	5749	4649	3624	2145	1654
68	1461	2066	3985	6047	8069	5958	1836	1231	1205	1256	1630	4544	5917	4688	3491	1975	1461
69	1264	1893	3854	6192	8069	6113	1710	1141	1087	1148	1557	4595	6064	4731	3341	1796	1264
70	1116	1696	3759	6239	7839	6179	1622	1066	976	1078	1458	4657	6240	4778	3202	1620	1116
71	983	1531	3689	6200	7379	6063	1526	952	851	968	1381	4722	6427	4802	3071	1445	983
72	886	1380	3664	6066	6724	5726	1414	839	735	862	1282	4785	6558	4805	2948	1284	886
73	797	1246	3670	5798	5937	5254	1332	714	612	735	1195	4793	6600	4788	2863	1147	797
74	721	1124	3675	5373	5002	4709	1216	606	517	601	1089	4716	6478	4732	2805	1011	721
75	648	1010	3635	4854	4180	4083	1132	521	438	514	999	4517	6186	4631	2750	917	648
76	577	913	3502	4315	3434	3469	1036	441	349	447	901	4206	5733	4438	2676	818	577
77	516	822	3296	3718	2837	2898	922	369	234	369	812	3808	5159	4116	2577	736	516
78	463	720	3047	3193	2289	2406	788	272	151	277	726	3407	4565	3760	2430	659	463
79	409	638	2811	2695	1876	1974	706	198	78	195	652	3032	3910	3371	2254	580	409
80	354	568	2529	2227	1523	1590	626	139	22	126	585	2641	3254	2966	2061	508	354
81	308	490	2254	1797	1180	1283	520	89	13	70	517	2299	2704	2567	1850	446	308
82	268	437	1970	1403	926	994	427	72	12	55	455	1923	2152	2210	1671	388	268
83	220	370	1698	1016	705	759	339	62	13	50	388	1536	1617	1799	1486	338	220
84	171	306	1410	753	493	544	260	56	10	37	318	1155	1235	1362	1298	279	171
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87	62	91	375	124	66	95	49	20	0	24	87	329	375	440	522	113	62
88	27	45	95	42	37	35	19	13	13	17	42	142	195	232	222	64	27
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180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

BUG Rating

Lum. Classification System (LCS)

LCS Zone	Lumens	%Lamp	%Lum
FL (0-30)	2024.9	10.3	10.3
FM (30-60)	5580.2	28.3	28.3
FH (60-80)	3499.3	17.8	17.8
FVH (80-90)	368.5	1.9	1.9
BL (0-30)	1645.9	8.4	8.4
BM (30-60)	3727.1	18.9	18.9
BH (60-80)	2641.5	13.4	13.4
BVH (80-90)	198.0	1.0	1.0
UL (90-100)	0.0	0.0	0.0
UH (100-180)	0.0	0.0	0.0
Total	19685.4	100.0	100.0
BUG Rating	**B4-U0-G4**		

2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2023-05-12	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AST-S-G12C-150WBT3DH3-abcde40 W		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
UTC230405 8E-F 2	277.0	60	0.530	146.18	0.995	8.09
	480.0	60	0.320	145.75	0.95	10.8
				DLC Pass Criteria	>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
CCT (K)	3993
Duv	-0.0031
Chromaticity (x, y)	x=0.3786 y=0.3690
Chromaticity (u', v')	u(u')=0.2270 v'=0.4978
Color Rendering Index (CRI)	84
R9	12
Rf	84
Rg	96
Rcs,h1(%)	-12

Special Color Rendering Indices			
R1	83	R9	12
R2	92	R10	80
R3	95	R11	82
R4	83	R12	66
R5	84	R13	86
R6	88	R14	98
R7	84	R15	78
R8	65	--	--
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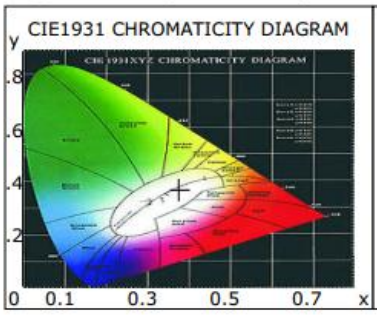
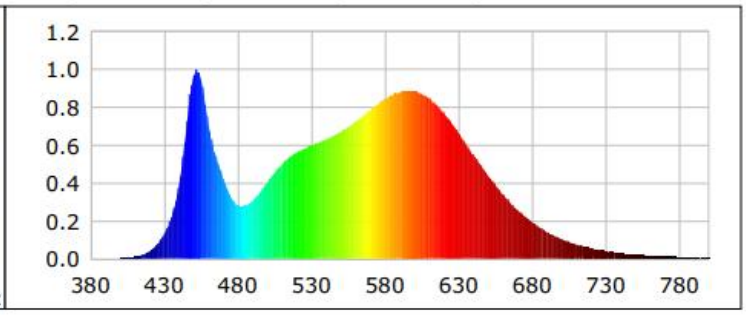
Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	277.0	480.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	21545.5	21359.7	>=10000(-10%)
Luminous Efficacy (lm/W)	147.39	146.55	Premium: >= 120(-3%)
Most worst Luminous/Highest Watts	146.12		

Spectral Power Distribution & Chromaticity Diagram



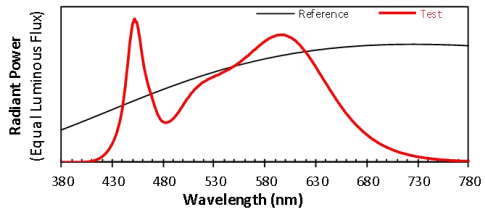


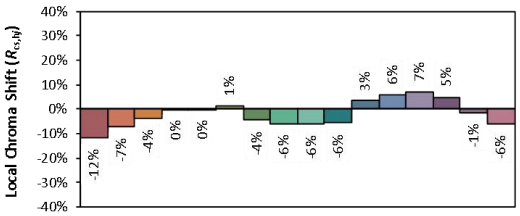
WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0645	535	0.5810	263.2063	690	0.2571	116.4525
385	0.0005	0.2071	540	0.5964	270.1727	695	0.2237	101.3211
390	0.0004	0.1871	545	0.6121	277.2810	700	0.1929	87.3683
395	0.0008	0.3559	550	0.6319	286.2809	705	0.1653	74.8768
400	0.0014	0.6204	555	0.6484	293.7206	710	0.1423	64.4570
405	0.0032	1.4294	560	0.6705	303.7304	715	0.1214	54.9823
410	0.0086	3.8803	565	0.6954	315.0226	720	0.1038	47.0368
415	0.0197	8.9370	570	0.7244	328.1828	725	0.0889	40.2815
420	0.0401	18.1501	575	0.7546	341.8244	730	0.0747	33.8318
425	0.0739	33.4817	580	0.7851	355.6815	735	0.0639	28.9615
430	0.1297	58.7634	585	0.8165	369.9039	740	0.0546	24.7213
435	0.2211	100.1526	590	0.8436	382.1830	745	0.0468	21.2157
440	0.3819	173.0102	595	0.8645	391.6436	750	0.0398	18.0075
445	0.6765	306.4452	600	0.8803	398.7712	755	0.0342	15.4728
450	0.9634	436.4551	605	0.8875	402.0509	760	0.0285	12.9298
455	0.9463	428.7078	610	0.8858	401.2780	765	0.0246	11.1231
460	0.7146	323.7054	615	0.8699	394.0738	770	0.0203	9.2148
465	0.5459	247.3230	620	0.8469	383.6754	775	0.0176	7.9799
470	0.4279	193.8562	625	0.8118	367.7740	780	0.0147	6.6695
475	0.3283	148.7289	630	0.7691	348.3950	785	0.0125	5.6693
480	0.2821	127.8034	635	0.7181	325.3325	790	0.0104	4.7338
485	0.2812	127.3922	640	0.6632	300.4533	795	0.0086	3.9105
490	0.3049	138.1306	645	0.6075	275.1891	800	0.0075	3.4007
495	0.3482	157.7310	650	0.5499	249.0996			
500	0.4038	182.9312	655	0.4931	223.4015			
505	0.4539	205.6257	660	0.4378	198.3217			
510	0.5003	226.6472	665	0.3884	175.9308			
515	0.5340	241.8953	670	0.3392	153.6505			
520	0.5605	253.8952	675	0.2963	134.2421			
525	0.5810	263.2063	680	0.2571	116.4525			
530	0.5964	270.1727	685	0.2237	101.3211			

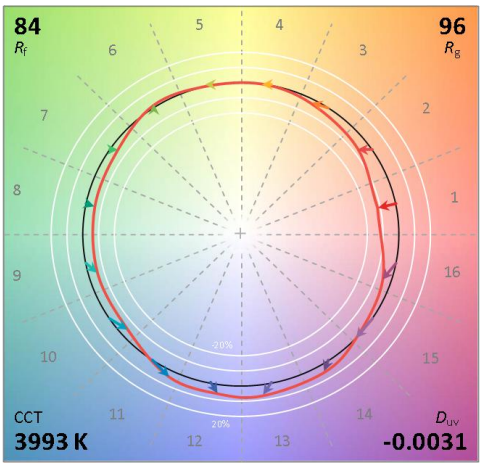
TM30

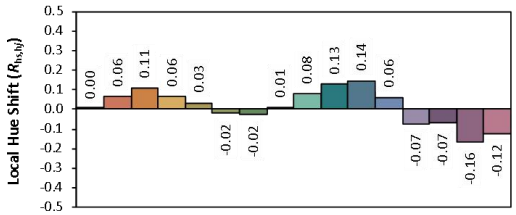
ANSI/IES TM-30-18 Color Rendition Report

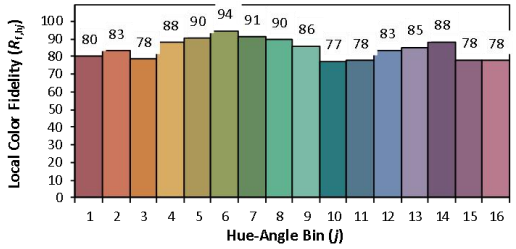
Source:	L128-3080RC35003P1 L128-5080RC35003P1	Manufacturer:	ASMART LIGHT CO., LTD
Date:	2023/5/12	Model:	AST-S-G12C-150WBT3DH3-abcde40W

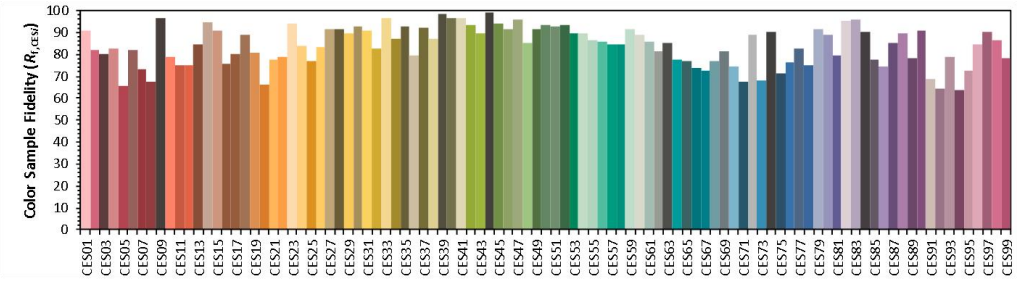












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3786
y	0.3690
u'	0.2270
v'	0.4978

CIE 13.3-1995 (CRI)

R_a	84
R_9	12

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

2.3 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2023-05-12	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AST-S-G12C-150WBT3DH3-abcde50 W		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
UTC230405 8E-F3	277.0	60	0.556	153.31	0.995	8.14
	480.0	60	0.335	152.59	0.95	10.91
				DLC Pass Criteria	>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

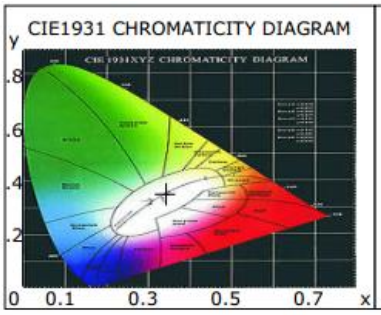
Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
CCT (K)	5119
Duv	0.0001
Chromaticity (x, y)	x=0.3419 y=0.3492
Chromaticity (u', v')	u(u')=0.2102 v'=0.4830
Color Rendering Index (CRI)	82
R9	2
Rf	83
Rg	95
Rcs,h1(%)	-14

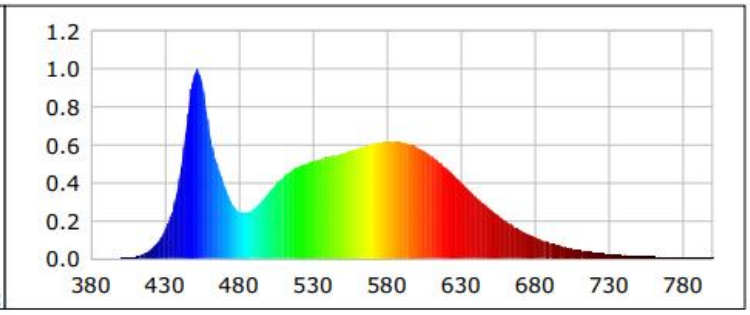
Special Color Rendering Indices			
R1	81	R9	2
R2	88	R10	72
R3	93	R11	81
R4	82	R12	62
R5	82	R13	83
R6	83	R14	96
R7	85	R15	76
R8	65	--	--
--	--	--	--
--	--	--	--

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	277.0	480.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	21182.8	21033.0	>=10000(-10%)
Luminous Efficacy (lm/W)	138.17	137.84	Premium: >= 120(-3%)
Most worst Luminous/Highest Watts	137.19		

Spectral Power Distribution & Chromaticity Diagram



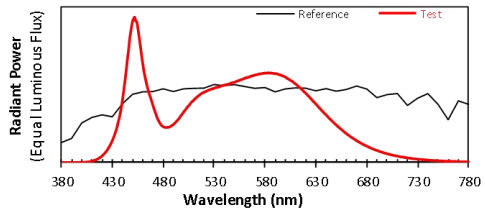


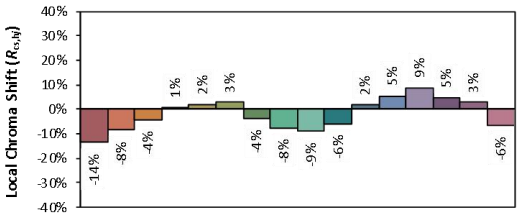
WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0005	0.3022	535	0.4992	287.7345	690	0.1504	86.7141
385	0.0003	0.1628	540	0.5103	294.1624	695	0.1304	75.1897
390	0.0010	0.6030	545	0.5196	299.4965	700	0.1128	65.0064
395	0.0005	0.3038	550	0.5328	307.0765	705	0.0961	55.4138
400	0.0011	0.6148	555	0.5404	311.5106	710	0.0832	47.9749
405	0.0038	2.2051	560	0.5528	318.6340	715	0.0714	41.1469
410	0.0095	5.4559	565	0.5651	325.7201	720	0.0602	34.6780
415	0.0220	12.6734	570	0.5783	333.3359	725	0.0513	29.5917
420	0.0449	25.8780	575	0.5909	340.5630	730	0.0443	25.5145
425	0.0849	48.9155	580	0.6010	346.3897	735	0.0373	21.5128
430	0.1493	86.0459	585	0.6104	351.8274	740	0.0319	18.4097
435	0.2537	146.2321	590	0.6165	355.3691	745	0.0268	15.4325
440	0.4286	247.0412	595	0.6153	354.6403	750	0.0231	13.3282
445	0.7187	414.2723	600	0.6111	352.2537	755	0.0195	11.2649
450	0.9734	561.0461	605	0.6018	346.8877	760	0.0172	9.9334
455	0.9309	536.5517	610	0.5880	338.9141	765	0.0148	8.5100
460	0.6778	390.6888	615	0.5665	326.5071	770	0.0115	6.6471
465	0.5053	291.2477	620	0.5413	312.0103	775	0.0103	5.9442
470	0.3913	225.5706	625	0.5107	294.3408	780	0.0097	5.5968
475	0.2940	169.4616	630	0.4768	274.8514	785	0.0072	4.1777
480	0.2471	142.4536	635	0.4403	253.7919	790	0.0059	3.4050
485	0.2426	139.8346	640	0.4023	231.8898	795	0.0054	3.1344
490	0.2611	150.5137	645	0.3646	210.1328	800	0.0048	2.7412
495	0.2982	171.8661	650	0.3287	189.4477			
500	0.3464	199.6568	655	0.2921	168.3790			
505	0.3905	225.0793	660	0.2583	148.8663			
510	0.4304	248.0795	665	0.2283	131.5670			
515	0.4606	265.5029	670	0.1991	114.7598			
520	0.4825	278.0990	675	0.1738	100.1608			
525	0.4992	287.7345	680	0.1504	86.7141			
530	0.5103	294.1624	685	0.1304	75.1897			

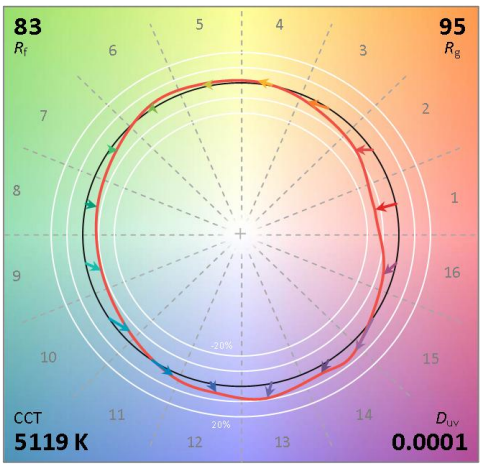
TM30

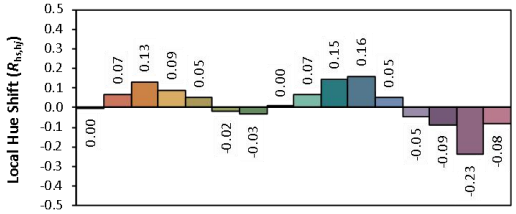
ANSI/IES TM-30-18 Color Rendition Report

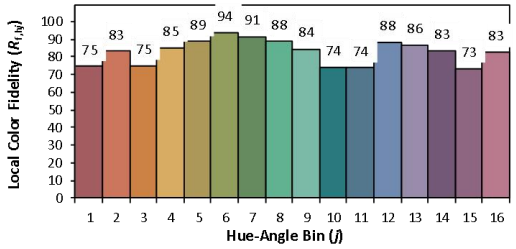
Source:	L128-5080RC35003P1	Manufacturer:	ASMART LIGHT CO., LTD
Date:	2023/5/12	Model:	AST-S-G12C-150WBT3DH3-abcde50W

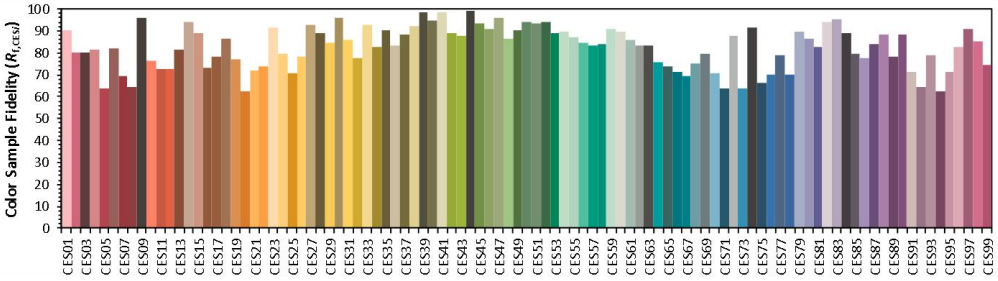












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3419
y	0.3492
u'	0.2102
v'	0.4830

CIE 13.3-1995 (CRI)

R_a	82
R_9	2

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

3. Test Equipment

Equipment Name	Model No.	Serial No.	Calibration Date
Goniophotometeric System	GPM-3000	DYHXF120001	2023-01-17
AC Power Source	CHP-500C	DYBWD010159	2023-01-18
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2023-02-01
Digital Power Meter	WT500	DYDWQ20010	2023-01-18
Integral Sphere (2M)	2M	DYJCE120067	2023-01-17
Digital Power Meter	WT500	DYDWQ200006	2023-01-18
Optical Color and Electrical Measurement System	CMS-3000S	DYJCE120067	2023-01-17
Expand Uncertainty: Photometric Measurement (Sphere): 2.08%, k=2 Chromaticity Measurement(Sphere):25.6K, k=2 Photometric Measurement(Goniophotometer):2.645%, k=2			

****** END OF REPORT ******