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-300WBT3SA1-abcdef

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

Representative (Tested) Model:
AST-S-G12C-300WBT3SA1-abcde30
AST-S-G12C-300WBT3SA1-abcde65

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

Test & Report By:

Winny Wu

Engineer: Winny Wu

Date: 2023-02-20

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-300WBT3SA1-abcdef	
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	120-277Vac, 50/60 Hz	
Nominal Power	300W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K, 3500K, 4000K, 4500K, 5000K, 5700K, 6500K	
LED Manufacturer	Lumileds Holding B.V.	
LED Model	L128-XX80RC35003P1	
Sample Number	BLC2212018E3-F1~2	
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	2022-12-10
Date of Test	2023-02-20
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-79-2017 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2017 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 25 ºC ±1 ºC. 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-300WBT3SA1-abcde30:1.033
AST-S-G12C-300WBT3SA1-abcde65:1.032

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 25 ºC ±1 ºC. 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	2023-02-20	Test Ambient:	25.2 ℃
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AST-S-G12C-300WBT3SA1-abcde30		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC221201 8E3-F1	120.0	60	2.545	303.9	0.995	7.71
	277.0	60	1.111	293.2	0.953	8.89
				DLC Pass Criteria	>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

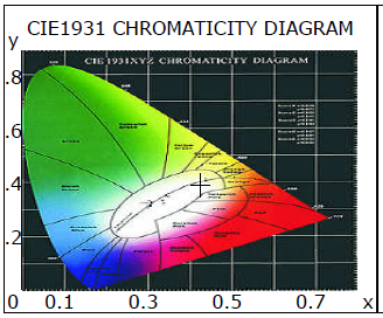
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	3123
Duv	-0.0022
Chromaticity (x, y)	x=0.4256 y=0.3947
Chromaticity (u', v')	u(u')=0.2472 v'=0.5159
Color Rendering Index (CRI)	82
R9	6
Rf	83
Rg	98
Rcs,h1(%)	-11

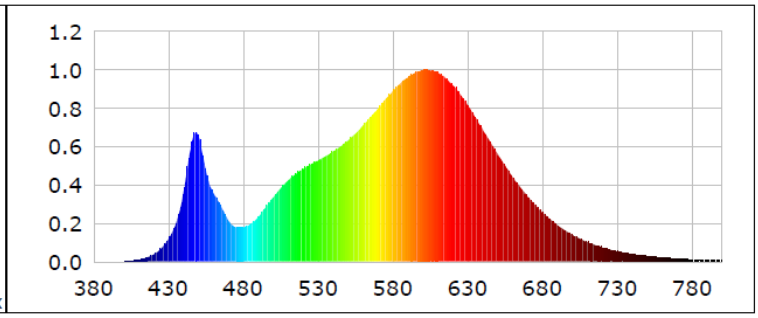
Special Color Rendering Indices			
R1	80	R9	6
R2	90	R10	77
R3	96	R11	80
R4	81	R12	71
R5	81	R13	83
R6	88	R14	98
R7	82	R15	74
R8	59	--	--
--	--	--	--
--	--	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	40050.1	39080.6	>=10000(-10%)
Luminous Efficacy (lm/W)	131.80	133.29	Premium: >= 120(-3%)
Most worst Luminous/Highest	128.61		
Zonal lumens in the 0-90 °zone (%)	100	--	Category 1: >=100(-1) Category 2: >=85(-3)
Zonal lumens in the 80-90 °zone (%)	1.8	--	<=10(+3)
Beam Angle (°)	55.5	--	--
Center Beam Candle Power (cd)	8902	--	--

Spectral Power Distribution & Chromaticity Diagram



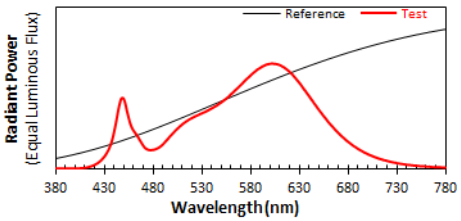


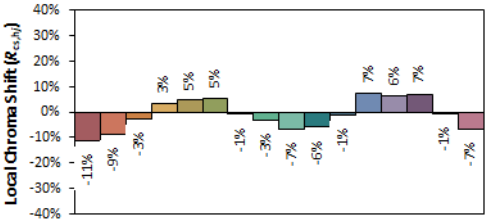
WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0003	0.2801	535	0.5050	478.7165	690	0.3391	321.4420
385	0.0003	0.2582	540	0.5257	498.3321	695	0.2961	280.6982
390	0.0004	0.3510	545	0.5482	519.6993	700	0.2563	242.9983
395	0.0006	0.5288	550	0.5744	544.4934	705	0.2206	209.1591
400	0.0013	1.2269	555	0.5986	567.4706	710	0.1899	180.0036
405	0.0033	3.1338	560	0.6306	597.8069	715	0.1639	155.3373
410	0.0082	7.7598	565	0.6663	631.5908	720	0.1391	131.8325
415	0.0185	17.5111	570	0.7086	671.7762	725	0.1194	113.2047
420	0.0355	33.6910	575	0.7526	713.4764	730	0.1013	96.0151
425	0.0658	62.3377	580	0.7971	755.5927	735	0.0864	81.8699
430	0.1144	108.4421	585	0.8442	800.2937	740	0.0735	69.6422
435	0.1953	185.1344	590	0.8876	841.4261	745	0.0626	59.3650
440	0.3507	332.4096	595	0.9269	878.6361	750	0.0527	49.9437
445	0.5909	560.1639	600	0.9596	909.6541	755	0.0445	42.1577
450	0.6603	625.9402	605	0.9848	933.5559	760	0.0381	36.0887
455	0.4795	454.5345	610	0.9986	946.6046	765	0.0326	30.9316
460	0.3609	342.0900	615	0.9973	945.4585	770	0.0271	25.6727
465	0.2937	278.4204	620	0.9861	934.7960	775	0.0234	22.1939
470	0.2163	205.0448	625	0.9587	908.8094	780	0.0197	18.6438
475	0.1792	169.9087	630	0.9219	873.9731	785	0.0173	16.3788
480	0.1786	169.3203	635	0.8725	827.1059	790	0.0153	14.4603
485	0.1955	185.3260	640	0.8167	774.2143	795	0.0130	12.3045
490	0.2305	218.5355	645	0.7530	713.8531	800	0.0100	9.4966
495	0.2818	267.1038	650	0.6906	654.6884			
500	0.3332	315.8863	655	0.6238	591.3385			
505	0.3805	360.6567	660	0.5607	531.5723			
510	0.4215	399.5921	665	0.4994	473.4640			
515	0.4550	431.2957	670	0.4409	417.9784			
520	0.4819	456.8603	675	0.3891	368.8137			
525	0.5050	478.7165	680	0.3391	321.4420			
530	0.5257	498.3321	685	0.2961	280.6982			

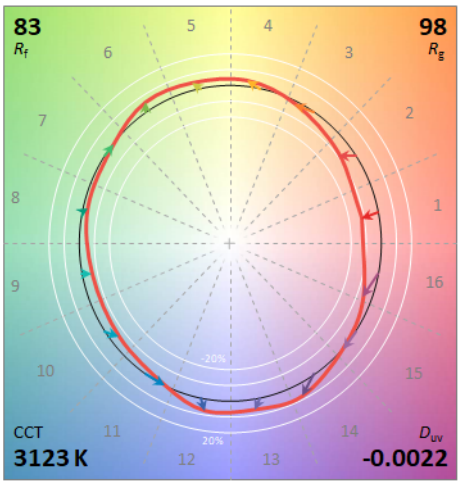
TM30

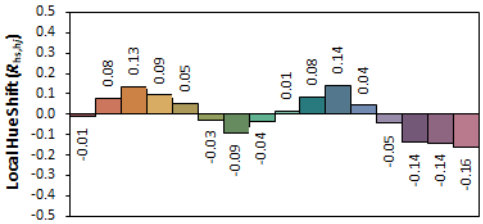
ANSI/IES TM-30-18 Color Rendition Report

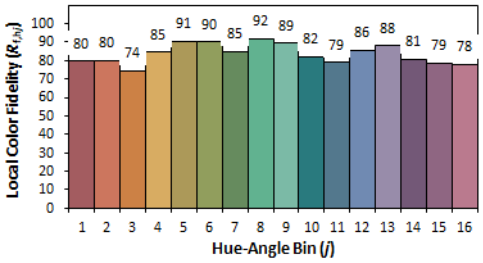
Source:	L128-XX80RC35003P1	**Manufacturer**	ASMART LIGHT CO., LTD
Date:	2023/2/20	**Model:**	AST-S-G12C-300WBT3SA1-abcde30

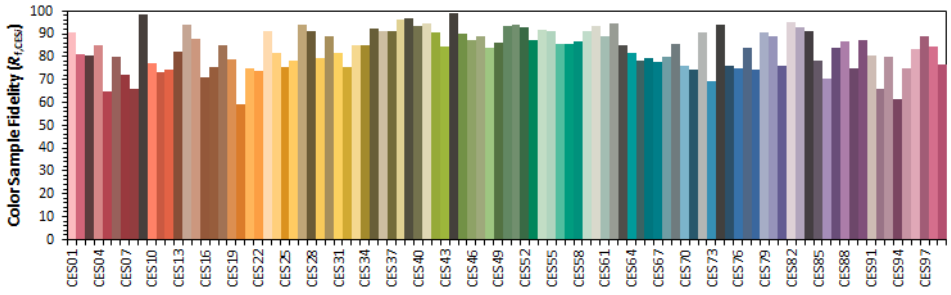












x	0.4256
y	0.3947
u'	0.2472
v'	0.5159

CIE 13.3-1995 (CRI)

R_a	82
R_9	6

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

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

Zonal Lumen Tabulation

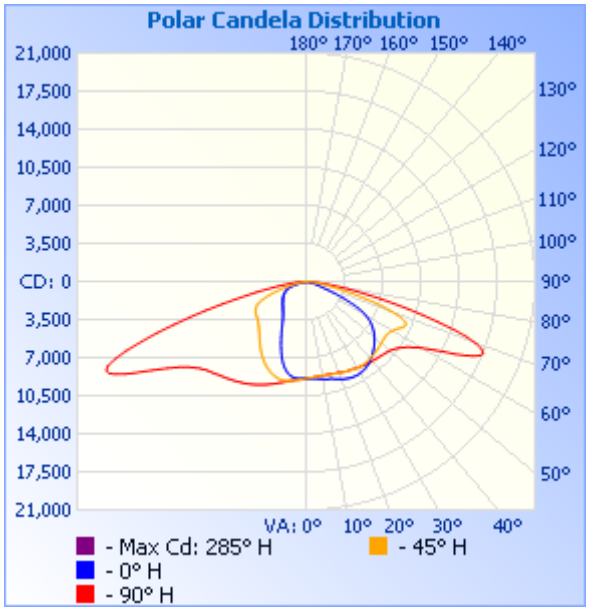
Zonal Lumen Summary

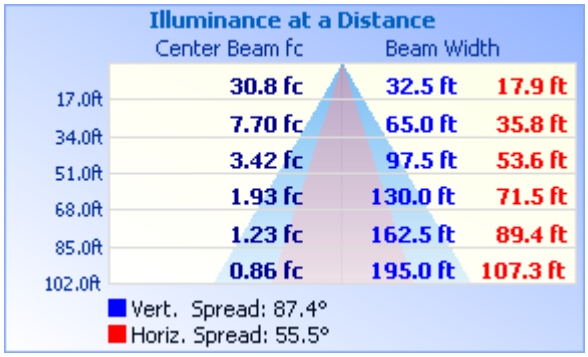
Zone	Lumens	% Lamp	% Luminaire
0-30	7,419.5	18.5%	18.5%
0-40	12,669.8	31.6%	31.6%
0-60	26,135.9	65.3%	65.3%
60-90	13,912.5	34.7%	34.7%
70-100	5,527.6	13.8%	13.8%
90-120	0	0%	0%
0-90	40,048.4	100%	100%
90-180	0	0%	0%
0-180	40,048.4	100%	100%

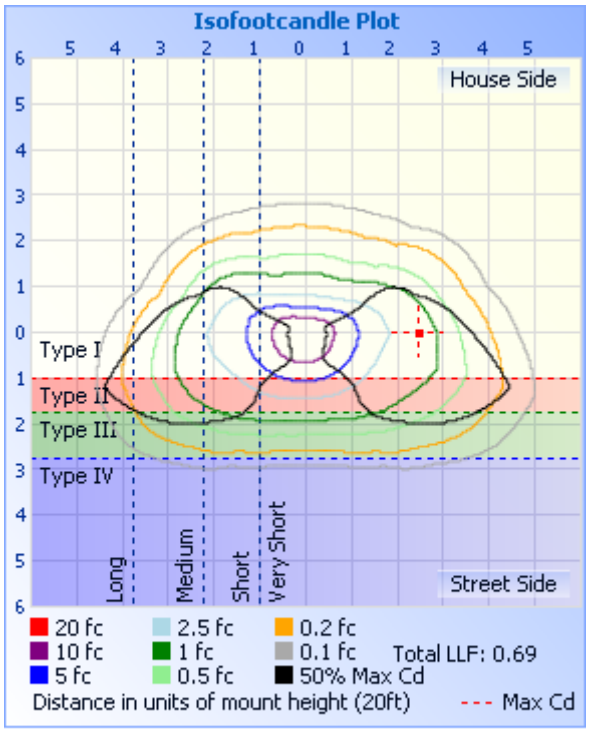
Lumens Per Zone

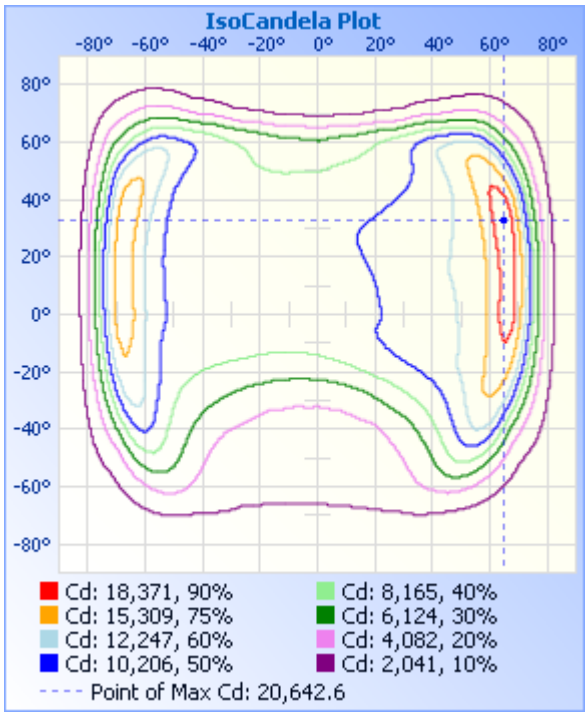
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	855.1	2.1%	90-100	0	0%
10-20	2,535.9	6.3%	100-110	0	0%
20-30	4,028.5	10.1%	110-120	0	0%
30-40	5,250.3	13.1%	120-130	0	0%
40-50	6,234.6	15.6%	130-140	0	0%
50-60	7,231.6	18.1%	140-150	0	0%
60-70	8,384.9	20.9%	150-160	0	0%
70-80	4,788.4	12.0%	160-170	0	0%
80-90	739.3	1.8%	170-180	0	0%

Photometric Data









Candela Table - Type C

	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345	360
0	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902	8902
1	8900	8889	8880	8873	8868	8866	8877	8877	8879	8884	8894	8900	8910	8918	8923	8934	8941	8939	8935	8929	8928	8920	8916	8907	8900
2	8900	8879	8866	8851	8836	8833	8853	8855	8857	8869	8890	8900	8918	8937	8951	8967	8979	8982	8969	8963	8956	8943	8936	8916	8900
3	8909	8877	8853	8828	8807	8804	8835	8838	8841	8856	8882	8903	8925	8954	8976	9006	9018	9026	9013	9003	8989	8972	8960	8937	8909
4	8922	8881	8847	8812	8784	8776	8816	8823	8827	8843	8878	8902	8934	8971	9009	9046	9058	9074	9052	9047	9029	9007	8991	8960	8922
5	8943	8892	8845	8799	8762	8751	8804	8806	8817	8828	8866	8892	8934	8983	9037	9088	9104	9132	9052	9098	9071	9048	9029	8988	8943
6	8970	8904	8849	8790	8745	8730	8795	8793	8807	8812	8847	8876	8924	8984	9059	9125	9151	9187	9072	9126	9130	9097	9071	9019	8970
7	8996	8918	8857	8784	8730	8707	8784	8781	8796	8791	8824	8841	8898	8976	9076	9162	9212	9263	9136	9126	9194	9156	9118	9054	8996
8	9024	8936	8862	8782	8719	8690	8775	8773	8781	8768	8789	8794	8855	8955	9082	9195	9287	9290	9189	9193	9194	9212	9171	9091	9024
9	9056	8956	8872	8781	8709	8672	8768	8763	8767	8742	8742	8729	8795	8914	9077	9226	9288	9319	9244	9257	9237	9211	9201	9138	9056
10	9089	8979	8882	8785	8704	8659	8764	8757	8750	8707	8674	8648	8715	8858	9056	9253	9322	9411	9301	9329	9309	9245	9201	9190	9089
11	9126	9006	8896	8792	8701	8647	8759	8752	8736	8668	8600	8544	8608	8779	9022	9289	9395	9484	9361	9392	9369	9312	9236	9190	9126
12	9188	9036	8911	8801	8698	8640	8759	8752	8718	8617	8508	8424	8482	8667	8975	9305	9451	9557	9423	9456	9436	9373	9303	9190	9188
13	9192	9069	8929	8808	8695	8636	8764	8749	8696	8564	8405	8282	8318	8548	8916	9305	9510	9631	9495	9525	9498	9429	9361	9264	9192
14	9192	9110	8950	8819	8693	8633	8771	8747	8676	8501	8287	8103	8147	8405	8836	9305	9558	9708	9564	9601	9559	9489	9415	9321	9192

15	9233	9157	8974	8831	8699	8635	8784	8748	8655	8426	8149	7920	7947	8236	8741	9285	9610	9785	9638	9677	9624	9548	9469	9378	9233
16	9296	9223	9005	8844	8706	8638	8799	8753	8633	8345	8000	7721	7738	8056	8620	9251	9656	9861	9715	9750	9695	9612	9534	9434	9296
17	9354	9223	9042	8859	8709	8640	8817	8764	8606	8244	7818	7501	7503	7832	8489	9215	9701	9949	9797	9834	9774	9679	9597	9498	9354
18	9414	9223	9078	8876	8717	8649	8837	8771	8578	8140	7636	7267	7256	7613	8343	9169	9748	10025	9885	9916	9846	9745	9658	9557	9414
19	9484	9306	9114	8898	8728	8659	8864	8782	8546	8037	7445	7030	6976	7383	8186	9111	9782	10105	9972	9996	9923	9819	9731	9620	9484
20	9542	9358	9161	8923	8741	8671	8896	8794	8517	7924	7254	6755	6714	7142	8000	9049	9811	10182	10047	10075	9995	9892	9799	9681	9542
21	9594	9404	9199	8948	8755	8684	8927	8810	8481	7805	7047	6498	6442	6887	7814	8977	9838	10260	10137	10156	10071	9964	9858	9739	9594
22	9633	9445	9252	8978	8775	8703	8959	8825	8442	7684	6814	6244	6175	6632	7622	8897	9859	10341	10217	10247	10152	10034	9916	9794	9633
23	9673	9483	9282	9006	8796	8719	8992	8839	8400	7533	6596	5990	5907	6343	7420	8808	9881	10420	10299	10325	10229	10109	9975	9840	9673
24	9711	9515	9282	9034	8822	8739	9047	8855	8352	7397	6378	5742	5649	6085	7207	8717	9899	10490	10383	10405	10310	10177	10029	9882	9711
25	9742	9546	9282	9062	8846	8760	9053	8874	8303	7250	6163	5506	5379	5840	6997	8604	9910	10559	10454	10488	10388	10248	10079	9918	9742
26	9764	9568	9299	9089	8869	8782	9053	8890	8247	7089	5930	5254	5148	5599	6762	8499	9918	10633	10538	10574	10465	10306	10122	9949	9764
27	9776	9587	9332	9118	8894	8808	9052	8901	8191	6940	5718	5036	4922	5339	6544	8381	9913	10701	10608	10657	10540	10362	10162	9974	9776
28	9785	9596	9353	9149	8926	8831	9101	8916	8137	6784	5519	4830	4714	5118	6328	8260	9908	10770	10692	10738	10610	10415	10198	9990	9785
29	9786	9599	9365	9171	8954	8856	9142	8929	8068	6629	5321	4636	4504	4906	6114	8138	9899	10825	10762	10817	10679	10465	10221	9998	9786
30	9778	9592	9379	9195	8984	8888	9175	8937	8002	6472	5127	4458	4330	4712	5901	7993	9889	10878	10833	10895	10764	10513	10243	9996	9778
31	9762	9578	9380	9222	9013	8916	9207	8946	7936	6321	4948	4282	4173	4530	5703	7865	9876	10934	10908	10973	10837	10556	10260	9985	9762
32	9733	9554	9370	9237	9043	8945	9237	8955	7866	6153	4763	4134	4034	4370	5488	7729	9858	10990	10974	11053	10903	10598	10268	9968	9733
33	9698	9523	9358	9250	9071	8975	9269	8961	7795	6008	4605	4004	3908	4205	5300	7595	9834	11041	11033	11132	10970	10644	10270	9939	9698

34	9657	9487	9324	9259	9103	9008	9307	8962	7723	5863	4455	3878	3797	4072	5125	7463	9810	11091	11099	11213	11033	10679	10258	9907	9657
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165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
176	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
177	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
178	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	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)	3977.3	9.9	9.9
FM (30-60)	11335.9	28.3	28.3
FH (60-80)	8387.5	20.9	20.9
FVH (80-90)	546.7	1.4	1.4
BL (0-30)	3442.1	8.6	8.6
BM (30-60)	7383.6	18.4	18.4
BH (60-80)	4784.6	11.9	11.9
BVH (80-90)	192.4	0.5	0.5
UL (90-100)	0.0	0.0	0.0
UH (100-180)	0.0	0.0	0.0
Total	40050.1	99.9	100.0
BUG Rating	**B4-U0-G4**		

Certificate#4810.01

2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2023-02-20	Test Ambient:	25.2 ºC
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AST-S-G12C-300WBT3SA1-abcde65		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC221201 8E3-F2	120.0	60	2.544	303.7	0.995	7.56
	277.0	60	1.113	293.4	0.952	8.97
				DLC Pass Criteria	>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

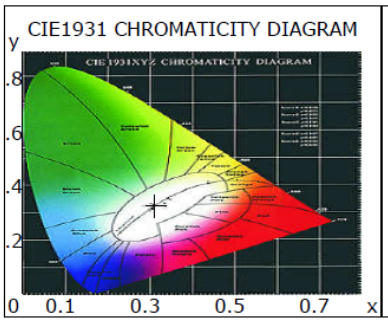
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	6510
Duv	0.0015
Chromaticity (x, y)	x=0.3130 y=0.3261
Chromaticity (u', v')	u(u')=0.1991 v'=0.4668
Color Rendering Index (CRI)	81
R9	-7
Rf	81
Rg	93
Rcs,h1(%)	-15

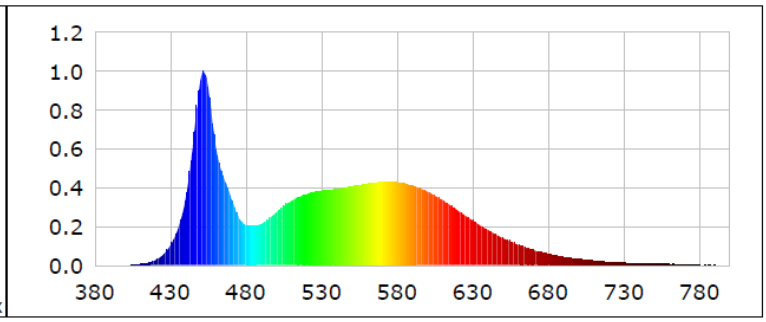
Special Color Rendering Indices			
R1	79	R9	-7
R2	88	R10	69
R3	91	R11	79
R4	80	R12	55
R5	80	R13	82
R6	81	R14	96
R7	86	R15	74
R8	65	--	--
--	--	--	--
--	--	--	--

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	42039.5	40920.5	>=10000(-10%)
Luminous Efficacy (lm/W)	138.42	139.47	Premium: >= 120(-3%)
Most worst Luminous/Highest Watts	134.74		

Spectral Power Distribution & Chromaticity Diagram



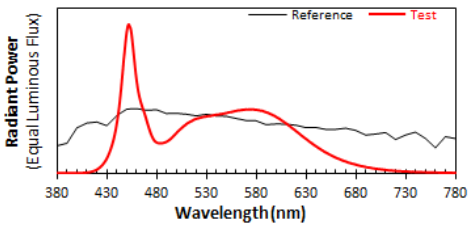


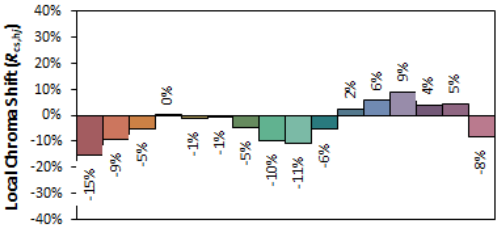
WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0003	0.4136	535	0.3750	497.2965	690	0.0790	104.8248
385	0.0005	0.6656	540	0.3813	505.6434	695	0.0674	89.3579
390	0.0004	0.4649	545	0.3869	513.1298	700	0.0583	77.3675
395	0.0005	0.6668	550	0.3943	522.8863	705	0.0482	63.9256
400	0.0013	1.7127	555	0.3980	527.9025	710	0.0420	55.6536
405	0.0020	2.7022	560	0.4045	536.4891	715	0.0360	47.7426
410	0.0049	6.5430	565	0.4108	544.7899	720	0.0300	39.8069
415	0.0109	14.4528	570	0.4192	555.9501	725	0.0263	34.9396
420	0.0242	32.1231	575	0.4235	561.6385	730	0.0223	29.5836
425	0.0509	67.4409	580	0.4278	567.3468	735	0.0188	24.9126
430	0.0998	132.3487	585	0.4287	568.5983	740	0.0157	20.8344
435	0.1842	244.2835	590	0.4266	565.8030	745	0.0132	17.4610
440	0.3328	441.3920	595	0.4203	557.3864	750	0.0116	15.4352
445	0.6129	812.8152	600	0.4099	543.6913	755	0.0095	12.5777
450	0.9510	1261.3122	605	0.3964	525.7387	760	0.0078	10.2899
455	0.9230	1224.1360	610	0.3786	502.0929	765	0.0075	9.9531
460	0.6193	821.4156	615	0.3576	474.2787	770	0.0068	9.0503
465	0.4590	608.7726	620	0.3348	444.0918	775	0.0058	7.6679
470	0.3540	469.5412	625	0.3097	410.7321	780	0.0052	6.8670
475	0.2521	334.3391	630	0.2831	375.4439	785	0.0042	5.5605
480	0.2065	273.9149	635	0.2553	338.5395	790	0.0029	3.8500
485	0.2019	267.7492	640	0.2304	305.6281	795	0.0033	4.3926
490	0.2115	280.4542	645	0.2054	272.3911	800	0.0023	3.0848
495	0.2369	314.1470	650	0.1816	240.8392			
500	0.2705	358.7315	655	0.1596	211.6390			
505	0.3021	400.6267	660	0.1391	184.4529			
510	0.3307	438.5483	665	0.1214	160.9941			
515	0.3498	463.8626	670	0.1045	138.6479			
520	0.3657	484.9937	675	0.0906	120.2192			
525	0.3750	497.2965	680	0.0790	104.8248			
530	0.3813	505.6434	685	0.0674	89.3579			

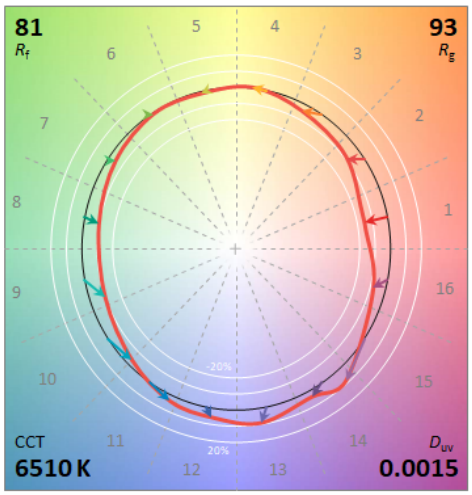
TM30

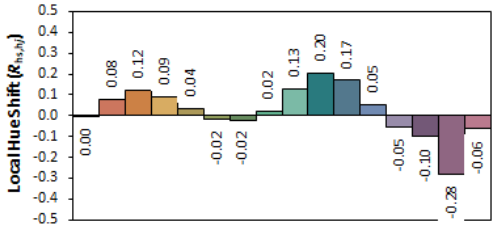
ANSI/IES TM-30-18 Color Rendition Report

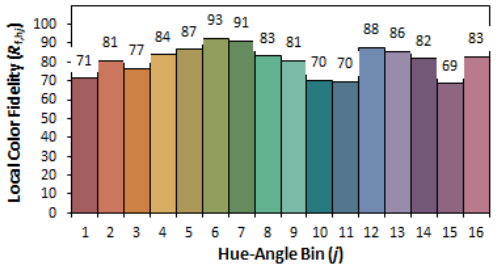
Source:	L128-XX80RC35003P1	**Manufacturer**	ASMART LIGHT CO., LTD
Date:	2023/2/20	**Model:**	AST-S-G12C-300WBT3SA1-abcde65

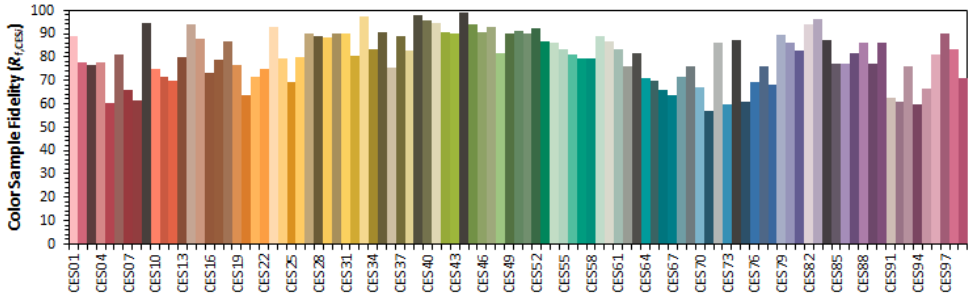












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3130
y	0.3261
u'	0.1991
v'	0.4668

CIE 13.3-1995 (CRI)

R_a	81
R_9	-7

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

Calculated Efficacy Data for family models:

Model Number	Luminous Flux (lm)	Power (W)	Efficacy (lm/W)
AST-S-G12C-300WBT3SA1-abcde30	40050.1	303.9	131.79
AST-S-G12C-300WBT3SA1-abcde35	40381.7	303.87	132.89
AST-S-G12C-300WBT3SA1-abcde40	40713.2	303.83	134.00
AST-S-G12C-300WBT3SA1-abcde45	41044.8	303.80	135.10
AST-S-G12C-300WBT3SA1-abcde50	41376.4	303.77	136.21
AST-S-G12C-300WBT3SA1-abcde57	41707.9	303.73	137.32
AST-S-G12C-300WBT3SA1-abcde65	42039.5	303.7	138.42

*1: This value is calculated and the calculation formula is as below:

40381.7 = (41707.9 -40050.1) / 6 +40050.1
40713.2 = (41707.9 -40050.1) / 6 +40381.7
41044.8 = (41707.9 -40050.1) / 6 +40713.2
41376.4 = (41707.9 -40050.1) / 6 +41044.8
42039.5 = (41707.9 -40050.1) / 6 +41376.4

*2: This value is calculated and the calculation formula is as below:

303.87 = (303.70 -303.90) / 6 +303.90
303.83 = (303.70 -303.90) / 6 +303.87
303.80 = (303.70 -303.90) / 6 +303.83
303.77 = (303.70 -303.90) / 6 +303.80
303.73 = (303.70 -303.90) / 6 +303.77

*3: This value is calculated and the calculation formula is as below:

131.79 = 40050.1 / 303.90
132.89 = 40381.7 / 303.87
134.00 = 40713.2 / 303.83
135.10 = 41044.8 / 303.80
136.21 = 41376.4 / 303.77
137.32 = 41707.9 / 303.73
138.42 = 42039.5 / 303.70

3. Test Equipment

Equipment Name	Model No.	Serial No.	Calibration Date
Goniophotometeric System	GPM-3000	DYHXF120001	2022-01-18
AC Power Source	CHP-500C	DYBWD010159	2022-01-25
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2022-01-25
Digital Power Meter	WT500	DYDWQ20010	2022-01-25
Integral Sphere (2M)	2M	DYJCE120067	2022-01-18
Digital Power Meter	WT500	DYDWQ200006	2022-01-25
Optical Color and Electrical Measurement System	CMS-3000S	DYJCE120067	2022-01-18
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 ********