



Report No.: BLC2101029E-C

## 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-SP01B-1000WSJT1C1-acdf

Remark: "a" can be any two letters for lamp colors; "c" stands for surge protector, can be S or blank, S stands for surge protector, blank for no surge protector; "d" can be "AM" or "FM" to represent mounting bracket types; "f" can be any digits for CCT.

Representative (Tested) Model:  
AST-SP01B-1000WSJT1C1-acd30  
AST-SP01B-1000WSJT1C1-acd57

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

Test & Report By:

*Lily Yang*

Engineer: Lily Yang

Date: 2021-01-29

Review By:

*Jason Luo*

Manager: Jason Luo

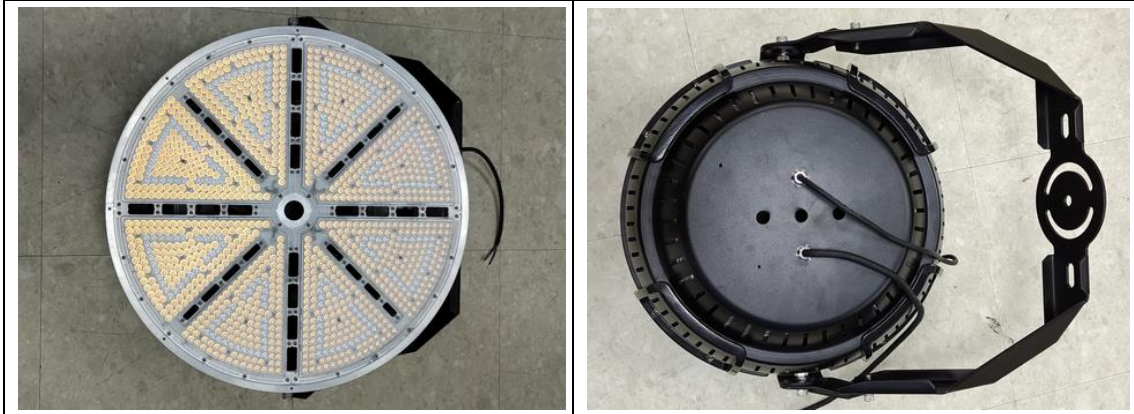


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### 1.1 Product Information:

Organization Name	ASmart LIGHT CO., LTD	
Brand Name	ASmart	
Model Number	AST-SP01B-1000WSJT1C1-acdf	
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	120-347Vac, 50/60 Hz	
Nominal Power	1000W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K, 4000K, 4500K, 5000K, 5700K	
LED Manufacturer	Bridgelux	
LED Model	BXEM-30C-12H-6C	
Sample Number	BLC2101029E-C1(3000K), C3(5700K)	
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	2020-12-18
Date of Test	2021-01-27
Test item	<ol style="list-style-type: none"><li>1. Total Luminous Flux</li><li>2. Luminous Distribution Intensity</li><li>3. Luminous Efficacy</li><li>4. Correlated Color Temperature</li><li>5. Color Rendering Index</li><li>6. Chromaticity Coordinate</li><li>7. Electrical Parameters</li></ol>
Reference Standard	<ol style="list-style-type: none"><li>1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products</li><li>2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products</li><li>3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources</li><li>4. CIE 15-2004 Technical Report Colorimetry</li><li>5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source</li><li>6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems</li></ol>
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  $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ , 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  $1\text{ }^{\circ}$  vertical intervals and  $22.5\text{ }^{\circ}$  horizontal intervals.

### 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  $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ . 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.

### 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  $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ . 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)*

<b>Test date</b>	2021-01-27	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	AST-SP01B-1000WSJT1C1-acd30		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC210102	120.0	60	8.673	1039.72	0.999	5.68
9E-C1	347.0	60	3.082	982.80	0.919	14.65
<b>DLC Pass Criteria</b>					>= 0.9(-3%)	<= 20(+5)

**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

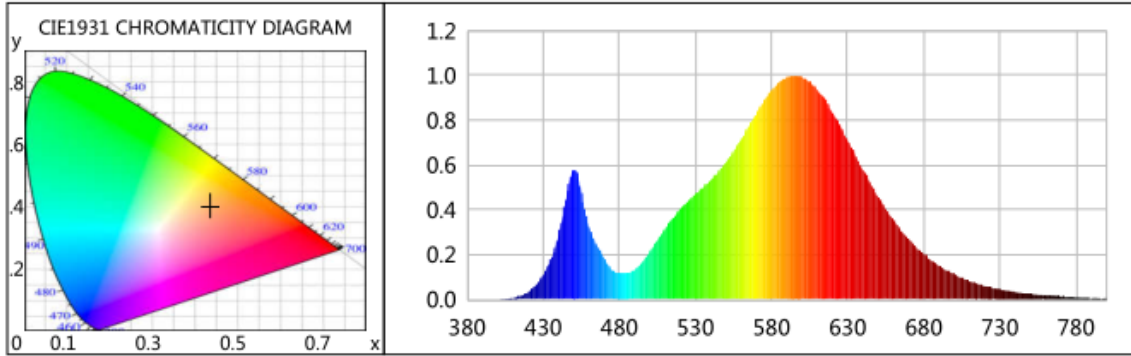
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	69	R9	-31
Frequency (Hz)	60	R2	83	R10	62
CCT (K)	3001	R3	95	R11	64
Duv	-0.0005	R4	69	R12	53
Chromaticity (x, y)	x=0.4361 y=0.4026	R5	69	R13	72
Chromaticity (u', v')	u(u')=0.2507 v'=0.5207	R6	78	R14	97
Color Rendering Index (CRI)	73	R7	77	R15	61
R9	-31	R8	44	--	--
Rf	76	--	--	--	--
Rg	94	--	--	--	--
Rcs,h1(%)	-16				

**Photometric Measurement – Goniophotometer Method:**

Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	120.0	347.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	146084.3	138784.5	>=30000(-10%)
Luminous Efficacy (lm/W)	140.50	141.21	Premium: >= 120(-3%)
Most worst Luminous/Highest	133.48		
Zonal lumens in the 0-90 °zone (%)	100	--	Category 1: >=100(-1) Category 2: >=85(-3)
Zonal lumens in the 80-90 °zone (%)	1.9	--	<=10(+3)
Beam Angle (°)	22.4	--	--
Center Beam Candle Power (cd)	438004	--	--



### 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	0.5823	525	0.4376	1338.0998	670	0.2695	824.1035
385	0.0004	1.3485	530	0.4689	1433.9806	675	0.2348	717.9725
390	0.0002	0.5043	535	0.5004	1530.2168	680	0.2032	621.4541
395	0.0002	0.5308	540	0.5331	1630.2814	685	0.1752	535.6454
400	0.0011	3.3917	545	0.5686	1738.6818	690	0.1506	460.5349
405	0.0026	8.0180	550	0.6110	1868.5271	695	0.1300	397.3955
410	0.0071	21.5855	555	0.6600	2018.4228	700	0.1120	342.4835
415	0.0167	51.1232	560	0.7144	2184.6327	705	0.0963	294.5143
420	0.0339	103.6865	565	0.7707	2356.8260	710	0.0822	251.4425
425	0.0631	192.8198	570	0.8273	2529.8818	715	0.0715	218.5837
430	0.1097	335.3360	575	0.8849	2706.1410	720	0.0610	186.4729
435	0.1797	549.4009	580	0.9326	2852.0323	725	0.0530	162.2146
440	0.2840	868.5779	585	0.9680	2960.1896	730	0.0445	136.1385
445	0.4497	1375.1950	590	0.9912	3031.1903	735	0.0384	117.4328
450	0.5773	1765.4005	595	0.9979	3051.6023	740	0.0335	102.4376
455	0.4775	1460.1309	600	0.9935	3038.1078	745	0.0284	86.8390
460	0.3202	979.3083	605	0.9720	2972.3202	750	0.0255	77.9286
465	0.2447	748.3258	610	0.9374	2866.6231	755	0.0219	66.8800
470	0.1829	559.3421	615	0.8923	2728.8332	760	0.0186	56.7891
475	0.1342	410.3200	620	0.8364	2557.7127	765	0.0160	48.9205
480	0.1170	357.8390	625	0.7746	2368.7033	770	0.0132	40.2991
485	0.1179	360.4773	630	0.7091	2168.4969	775	0.0120	36.8111
490	0.1333	407.6586	635	0.6436	1968.2789	780	0.0097	29.6962
495	0.1661	508.0804	640	0.5796	1772.5199	785	0.0095	29.0881
500	0.2128	650.7628	645	0.5167	1579.9964	790	0.0057	17.3609
505	0.2637	806.5116	650	0.4584	1401.7222	795	0.0060	18.3083
510	0.3154	964.4222	655	0.4037	1234.4775	800	0.0050	15.3550
515	0.3616	1105.7739	660	0.3543	1083.4030			
520	0.4026	1231.1774	665	0.3094	946.1335			

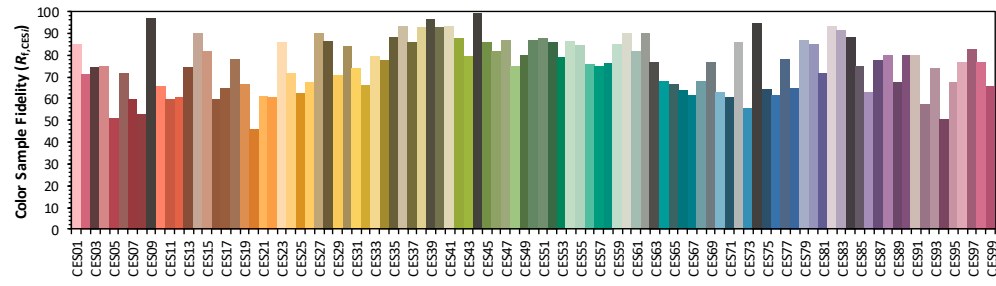
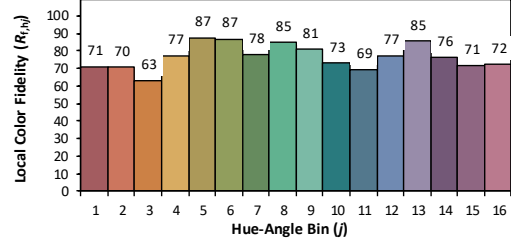
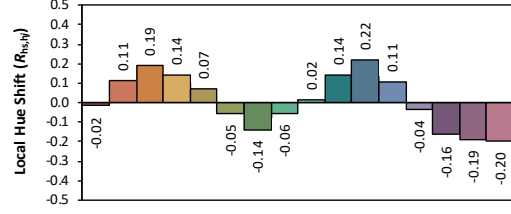
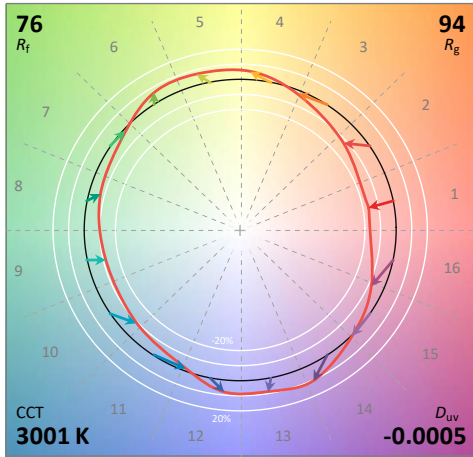
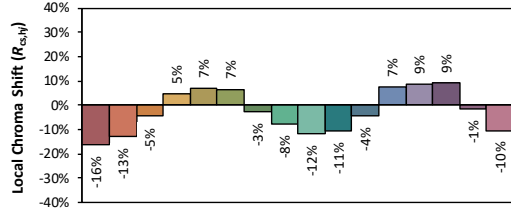
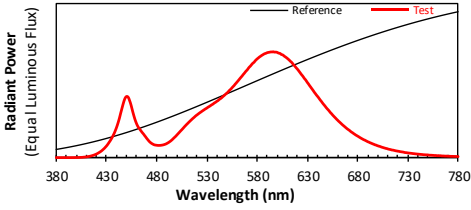


# TM30

## ANSI/IES TM-30-18 Color Rendition Report

Source: BXEM-30C-12H-6C  
 Date: 2021/1/27

Manufacturer: ASHART LIGHT CO., LTD  
 Model: AST-SP01B-1000WSJT1C1-acd30



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

$x$	0.4361	CIE 13.3-1995 (CRI)	
$y$	0.4026		
$u'$	0.2507		
$v'$	0.5207		
		$R_a$	73
		$R_9$	-31

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



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## Zonal Lumen Tabulation

### Zonal Lumen Summary

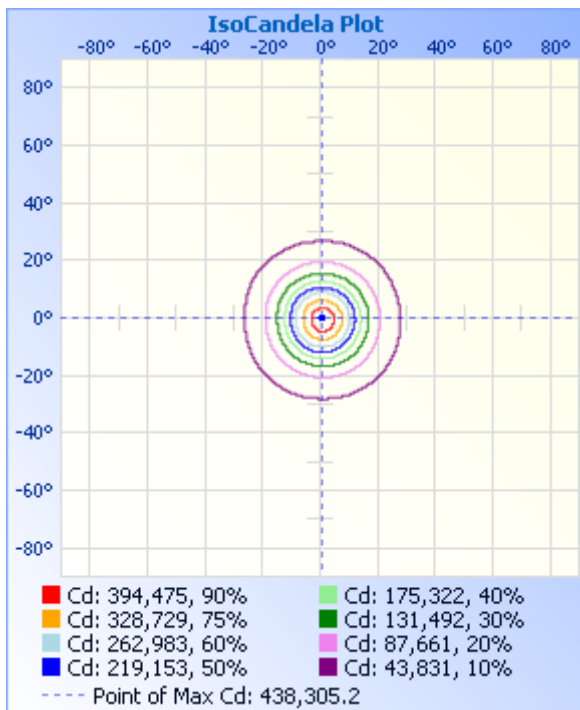
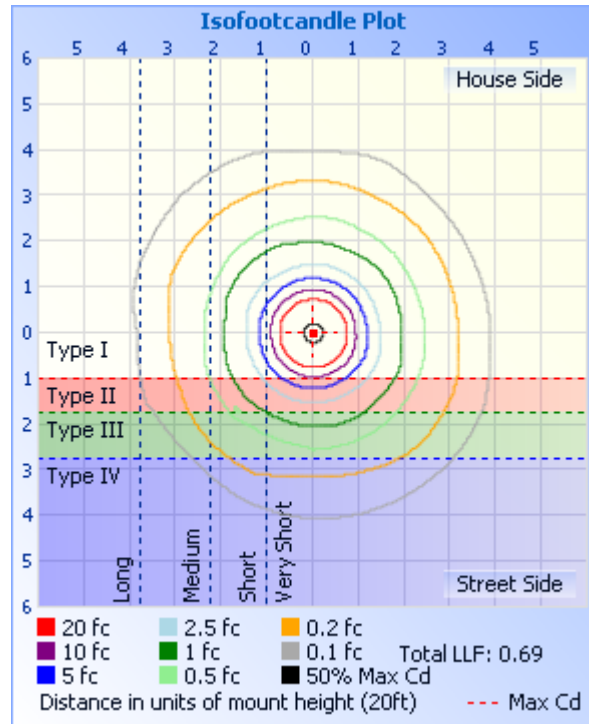
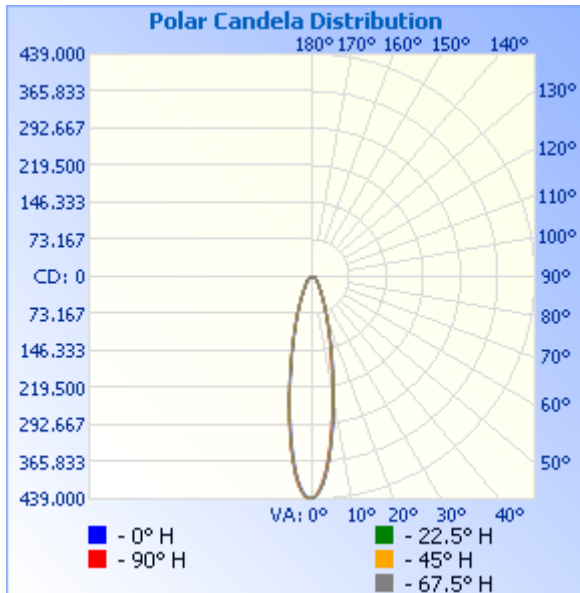
Zone	Lumens	% Lamp	% Luminaire
0-30	98,032.6	67.1%	67.2%
0-40	113,638.1	77.8%	77.8%
0-60	132,575.7	90.8%	90.8%
60-90	13,408.2	9.2%	9.2%
70-100	7,224.1	4.9%	4.9%
90-120	0	0%	0%
0-90	145,983.9	99.9%	100%
90-180	0	0%	0%
0-180	145,983.9	99.9%	100%

### Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	31,491.7	21.6%	90-100	0	0%
10-20	41,184.8	28.2%	100-110	0	0%
20-30	25,356.1	17.4%	110-120	0	0%
30-40	15,605.4	10.7%	120-130	0	0%
40-50	10,857.6	7.4%	130-140	0	0%
50-60	8,080.0	5.5%	140-150	0	0%
60-70	6,184.1	4.2%	150-160	0	0%
70-80	4,469.2	3.1%	160-170	0	0%
80-90	2,754.9	1.9%	170-180	0	0%



**Photometric Data**



	Center Beam fc	Beam Width	
17.0ft	1,515.6 fc	6.8 ft	6.7 ft
34.0ft	378.9 fc	13.6 ft	13.4 ft
51.0ft	168.4 fc	20.4 ft	20.2 ft
68.0ft	94.7 fc	27.1 ft	26.9 ft
85.0ft	60.6 fc	33.9 ft	33.6 ft
102.0ft	42.1 fc	40.7 ft	40.3 ft

■ Vert. Spread: 22.6°  
■ Horiz. Spread: 22.4°





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Certificate#4810.01

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	438004	438004	438004	438004	438004	438004	438004	438004	438004	438004	438004	438004	438004	438004	438004	438004	438004
1	433212	432679	431870	432813	430979	432865	434507	436302	437271	437987	438245	437814	438305	437330	435757	434701	433212
2	423731	421926	421429	422430	419353	422418	425264	427721	430569	432267	432921	432311	433772	431146	428424	426222	423731
3	409680	406998	406284	406234	403395	407455	411544	415088	418803	421548	422600	421755	423686	420025	415870	411223	409680
4	391400	388257	387296	387562	383189	388195	391201	397823	402382	405795	407145	404469	408865	404000	398974	393618	391400
5	367817	366441	365069	365690	359971	365632	369101	376473	382073	386075	385384	384534	390047	384269	378529	372472	367817
6	344353	340450	341482	341256	335315	338925	345125	353284	359274	363726	363036	362212	365341	359179	355381	349011	344353
7	319338	315233	313793	316286	307414	313515	319831	326162	332536	337410	339052	338038	340885	334375	328195	324204	319338
8	293572	289105	287672	290278	281370	287683	293946	300079	306395	311712	313724	310143	314741	308460	302073	298291	293572
9	267686	263476	262017	261899	255961	262122	265932	274625	280799	285979	287862	284516	288194	282089	276340	270267	267686
10	240761	239358	237998	237777	231556	237622	241466	249478	255596	260298	259553	259373	262702	257016	251249	245579	240761
11	217894	216494	215323	215195	208355	211740	217507	225080	231143	235836	235035	234437	238063	232870	227645	222220	217894
12	197039	193682	194182	194361	185455	190812	196133	203270	208498	210757	212291	212305	212838	210274	205764	200972	197039
13	177804	174992	173368	173475	167039	171889	176837	183452	186569	190572	192304	191454	192013	187846	183900	179741	177804
14	159984	157178	155828	157503	149709	154331	159079	163634	167931	171591	172886	170914	172224	168637	164942	161847	159984
15	143972	141375	140149	141479	134906	138761	142842	147426	151066	154928	155845	154198	154677	151365	148705	145383	143972
16	128148	127409	126330	126130	121172	125298	127770	133107	136503	139434	140821	139385	138937	136487	134106	131149	128148
17	115444	115281	114063	114312	109179	111582	115081	119827	123100	125915	125727	125300	125856	123091	120708	118244	115444
18	104462	104614	103311	103133	97671	100882	104065	108028	110089	112396	113305	113377	112207	111211	109184	106581	104462
19	94930	92864	93111	93218	88471	91311	94146	97149	99653	101934	102553	102925	100916	100461	98742	96808	94930
20	85773	84447	84014	84427	79839	82903	84769	87819	90087	92246	93128	92162	91314	90267	88571	87410	85773
21	77554	76305	75743	76969	72496	74764	76794	80055	81407	83794	82997	83510	82499	80948	79801	79119	77554
22	69914	69846	68817	69407	65705	68378	69596	72462	74365	76030	76294	75533	74487	73551	72468	71695	69914
23	63758	63215	63096	63247	59549	61015	63108	65634	67749	68368	68593	68819	67026	67131	65963	65004	63758
24	57739	57289	57789	57813	53962	56313	57718	60441	61354	62287	62528	62226	60921	60644	59610	59130	57739
25	52879	52479	52379	52743	49546	51191	53004	54602	55778	56876	56945	56914	55116	54898	54558	53750	52879
26	48428	48304	48037	48123	45465	47450	48003	49868	50850	52118	51397	51584	50700	49809	49168	49477	48428
27	43790	44079	43523	44368	42136	42850	44015	45527	46280	47858	47451	46721	45783	45276	44522	44795	43790
28	40482	40196	40043	40873	38105	39800	40585	42377	42886	42945	43230	42897	41684	41485	41007	41270	40482
29	37327	37431	37458	37377	35462	36346	37949	38887	39033	39715	39474	39782	38339	38014	37679	37525	37327
30	34531	34631	35270	35214	33153	33835	34874	35601	36338	36641	36648	36893	35144	35099	34705	35073	34531
31	32212	31831	32255	32567	30260	31459	32204	33353	33900	34562	33823	33639	32016	32133	31900	32553	32212
32	29739	29752	29584	30628	28487	29319	29670	30748	31189	31023	31531	30715	29841	29791	29721	29744	29739
33	27659	27863	27844	28344	26479	27078	27879	29080	29279	29203	28895	28794	27332	27617	27930	27514	27659
34	26090	26265	25862	26475	24756	25410	25953	27343	27232	27176	27137	27133	25476	25899	25801	26117	26090
35	23941	24771	24570	24537	22983	23675	24348	25147	25220	25904	25259	25316	23468	24214	24196	24364	23941
36	22662	22744	22795	23395	21762	22461	23131	23751	23634	23946	23640	23689	22481	22798	22624	22849	22662
37	21673	21507	21641	21544	20357	20625	21171	22474	22253	22245	22365	22634	20859	20877	21340	21572	21673
38	20292	20081	20521	20644	19052	19833	19887	21146	20514	21163	20969	20505	19103	19866	20056	20158	20292
39	19184	19033	19091	19277	18049	18198	19211	19699	19593	19909	19935	19571	18233	18384	18958	18660	19184
40	18109	18157	18264	18308	16711	17625	18130	18439	18365	18827	19056	18221	17045	17676	17707	17843	18109
41	16899	17178	17264	17598	15740	16227	17184	17468	17291	17848	17575	17927	16209	16345	16879	17026	16899
42	15910	16319	16541	16179	15038	15738	16187	16941	16524	17418	16420	16526	15423	15468	15916	16277	15910
43	15483	15271	15524	15730	14335	14946	15038	15970	15927	16164	15852	15833	14687	14896	15173	15238	15483
44	14784	14533	15128	14830	13800	14272	14227	14880	15125	15203	15352	15107	14068	14154	14531	14523	14784
45	13863	13966	14008	13895	13231	13025	13923	13978	14443	14756	14473	14501	13348	13581	13399	13876	13863
46	13863	13141	13146	13653	12445	12452	13281	13280	13625	14034	13750	13030	12646	12772	13179	13127	13863

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01  
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Guangzhou, People's Republic of China. info@bellingtest.com

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47	13011	12952	12819	13220	11709	12233	12486	13314	13028	13210	13009	12805	12094	12233	12486	12957	13011
48	12209	12265	12216	12442	11358	11627	11827	12327	12874	12660	12423	12165	11057	11576	12165	12088	12209
49	11885	11733	11699	12113	10588	10852	11337	11986	11851	11698	11820	12182	11073	11239	11185	11578	11885
50	11016	11011	10941	11455	10388	10380	11101	11152	11374	11303	11079	11525	10388	10919	10983	11067	11016
51	10896	10461	10700	11421	9618	9824	10712	10811	11237	11337	10683	11196	9819	10262	10408	10437	10896
52	10180	10564	10080	10590	9585	9386	9800	10335	10197	10822	10148	10123	9501	9133	9986	10028	10180
53	9720	9998	9856	10123	9100	8577	9749	9534	10112	9963	10338	9500	9417	8745	9986	10062	9720
54	9583	9465	8977	9915	8715	8880	9462	9466	10010	9706	9442	9483	8598	8914	9445	9654	9583
55	9123	9139	9132	9604	8447	8257	8887	9126	9311	9499	9184	9656	8414	8577	8972	9058	9123
56	8748	8984	8942	9275	7343	7852	8381	8530	9174	8641	8598	8894	8113	7869	8178	8751	8748
57	8253	7919	8494	8479	7511	7515	8060	8649	8560	8280	9046	8825	7828	8408	8178	8343	8253
58	8219	8297	8029	8358	7209	7094	8229	8206	8560	8555	8236	8635	7159	7465	7823	7849	8219
59	8083	8469	7978	7735	6942	7128	7232	7730	8151	8211	8115	8168	6959	7279	7434	8036	8083
60	7725	7850	7616	7908	6791	6235	7401	7815	7503	8142	7874	7770	6591	7128	7603	7389	7725
61	7060	7146	7564	7562	6691	6757	7249	7202	7656	7369	7822	7510	6557	6858	7333	7389	7060
62	6599	7283	7116	7268	6356	6437	7096	6776	6889	7558	7598	6904	6206	6470	6623	7049	6599
63	6872	6682	6685	6628	5453	6201	6978	6197	6889	6854	6875	6454	5988	6858	6792	6640	6872
64	6633	7009	6582	6749	6005	6049	5677	6095	5951	7129	7288	6956	5152	6403	6725	6265	6633
65	6633	6717	5893	6247	5353	5712	6167	6623	6514	6837	6565	6489	4884	6016	6184	6385	6633
66	6019	6356	6496	6281	5403	5796	6015	5840	5883	6734	6547	6385	4951	5864	6032	5823	6019
67	5781	5531	6323	6160	5085	5476	5255	5806	6531	6184	6427	5987	4951	5813	4680	5959	5781
68	5593	6012	5634	5503	5353	5005	5559	5584	6088	5995	5738	4707	5001	5527	5728	4989	5593
69	6173	5274	5686	5745	5068	4634	5356	5942	6054	5136	5169	5953	4700	4752	5964	5976	6173
70	5695	5703	5927	5451	4801	4465	5255	5653	5303	5411	5944	5330	4015	5375	5305	5618	5695
71	5201	5188	3928	5122	4316	4651	5035	4699	5013	5274	5617	5589	4600	4398	4038	5210	5201
72	4519	4672	5462	4378	4466	4347	4613	4137	4945	5222	4480	4862	4349	4128	4697	4682	4519
73	3257	4415	5203	5105	3797	4297	4613	4716	5354	5222	5341	5018	3864	4314	4630	4852	3257
74	4758	4690	4635	3634	3697	4246	3565	4597	4365	4191	4497	5036	3797	4668	4342	4767	4758
75	4297	4741	4618	4395	3981	3876	4258	4171	4860	4896	5014	4395	3747	3741	3819	4171	4297
76	4195	4758	4394	4170	3362	3303	3498	4308	3956	4415	4514	4741	3596	3977	2822	3865	4195
77	4127	2560	4204	4326	3161	2780	2754	4239	4519	4707	4687	3530	3496	4010	4038	4580	4127
78	3513	4398	4049	3720	3178	3471	3261	3695	3973	4243	4152	4378	2292	3656	3869	4001	3513
79	4007	3333	3860	3374	2877	2342	4021	3746	2780	4054	4170	3842	3028	3539	3835	4239	4007
80	2950	3814	3567	3599	2793	2949	3379	4018	3564	3779	3980	3634	2927	3319	3160	3456	2950
81	3496	3092	3343	3340	2509	2797	3075	3099	3257	3607	3670	3824	2877	2898	3430	3184	3496
82	3581	3710	3412	2890	2609	2645	3227	3507	3104	3229	3653	3444	2442	2140	3041	3592	3581
83	3325	3367	2877	2301	2509	2494	2754	3371	2933	2508	2929	3565	2676	3353	2991	2894	3325
84	2848	3229	2016	2405	2275	1971	2619	3320	2899	3315	2895	2994	2325	2578	2636	3031	2848
85	2916	2663	2791	2682	1907	1567	1926	2809	3104	2834	2981	2959	2024	2393	2602	2673	2916
86	2234	2577	2584	2648	1388	1786	2230	2792	2456	2611	2808	2630	1907	2578	2129	2418	2234
87	2251	2302	2516	2786	1773	1719	2247	2741	2797	2577	2447	2821	1689	2056	2551	2384	2251
88	2183	2508	2740	2751	1790	1550	2197	1805	2456	2474	2205	2544	1840	994	2484	2298	2183
89	2404	2079	2292	2025	1957	1634	1690	2537	2114	2267	2395	2648	1489	1736	2332	2247	2404
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94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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## BUG

### Lum. Classification System (LCS)

<u>LCS Zone</u>	<u>Lumens</u>	<u>%Lamp</u>	<u>%Lum</u>
FL (0-30)	48469.5	33.2	33.2
FM (30-60)	17143.2	11.7	11.7
FH (60-80)	5312.3	3.6	3.6
FVH (80-90)	1370.5	0.9	0.9
BL (0-30)	49654.7	34.0	34.0
BM (30-60)	17410.1	11.9	11.9
BH (60-80)	5340.1	3.7	3.7
BVH(80-90)	1383.9	0.9	0.9
UL (90-100)	0.0	0.0	0.0
UH (100-180)	0.0	0.0	0.0
Total	146084.3	99.9	100.0
<b>BUG Rating</b>	<b>B5-U0-G5</b>		

**2.2 Electrical, Photometric and Chromaticity Measurements***(Refer to Work Instruction BL-QP-033)*

<b>Test date</b>	2021-01-27	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	AST-SP01B-1000WSJT1C1-acd57		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC210102	120.0	60	8.666	1037.85	0.998	6.24
9E-C3	347.0	60	3.089	984.11	0.918	8.39
<b>DLC Pass Criteria</b>					$\geq 0.9(-3\%)$	$\leq 20(+5)$

**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

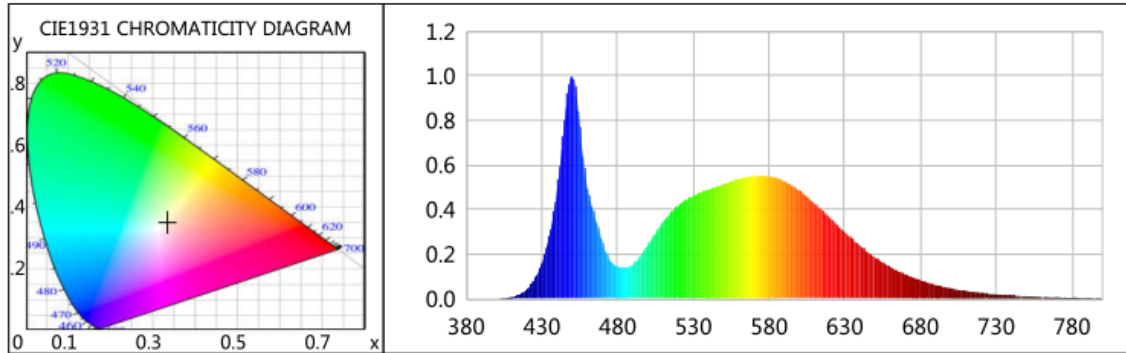
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	72	R9	-27
Frequency (Hz)	60	R2	80	R10	53
CCT (K)	5354	R3	86	R11	72
Duv	0.0016	R4	75	R12	48
Chromaticity (x, y)	x=0.3360 y=0.3473	R5	73	R13	74
Chromaticity (u', v')	u(u')=0.2069 v'=0.4812	R6	73	R14	92
Color Rendering Index (CRI)	75	R7	82	R15	67
R9	-27	R8	58	--	--
Rf	76	--	--	--	--
Rg	94	--	--	--	--
Rcs,h1(%)	-17	--	--	--	--

**Photometric Measurement – Sphere-Spectroradiometer Method:**

Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	120.0	347.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	149993.8	143315.9	$\geq 30000(-10\%)$
Luminous Efficacy (lm/W)	144.52	145.63	Premium: $\geq 120(-3\%)$
Most worst Luminous/Highest Watts	138.09		



### 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	2.3997	525	0.4428	2010.1110	670	0.1097	498.0248
385	0.0004	1.9883	530	0.4616	2095.6345	675	0.0951	431.7430
390	0.0006	2.8795	535	0.4777	2168.8236	680	0.0833	378.0986
395	0.0006	2.9386	540	0.4901	2224.9850	685	0.0718	326.1761
400	0.0009	3.8880	545	0.5011	2274.7662	690	0.0622	282.4508
405	0.0028	12.8489	550	0.5143	2335.1104	695	0.0537	244.0059
410	0.0078	35.5292	555	0.5260	2388.2324	700	0.0463	210.0560
415	0.0193	87.7332	560	0.5379	2441.9713	705	0.0402	182.6605
420	0.0422	191.3972	565	0.5459	2478.1628	710	0.0348	158.1438
425	0.0856	388.6268	570	0.5509	2501.2373	715	0.0308	139.9488
430	0.1620	735.3071	575	0.5535	2512.6648	720	0.0259	117.5802
435	0.2871	1303.4259	580	0.5513	2502.9592	725	0.0227	103.2495
440	0.4865	2208.8840	585	0.5417	2459.0989	730	0.0190	86.1921
445	0.8033	3647.1398	590	0.5280	2397.1351	735	0.0167	76.0317
450	1.0000	4539.9721	595	0.5096	2313.5224	740	0.0140	63.6030
455	0.7755	3520.6387	600	0.4864	2208.3506	745	0.0123	55.9080
460	0.4999	2269.6908	605	0.4595	2086.1262	750	0.0119	53.8777
465	0.3681	1671.2262	610	0.4293	1949.1309	755	0.0102	46.2278
470	0.2548	1156.7294	615	0.3981	1807.3714	760	0.0086	39.0325
475	0.1756	797.1650	620	0.3649	1656.7707	765	0.0070	31.8002
480	0.1447	657.1064	625	0.3311	1503.3140	770	0.0065	29.5860
485	0.1409	639.8369	630	0.2985	1355.3025	775	0.0054	24.3312
490	0.1550	703.5471	635	0.2682	1217.5468	780	0.0040	18.3105
495	0.1902	863.6859	640	0.2386	1083.0818	785	0.0040	18.0227
500	0.2409	1093.5083	645	0.2104	955.3417	790	0.0038	17.2184
505	0.2938	1334.0242	650	0.1861	845.0596	795	0.0024	10.7920
510	0.3429	1556.7667	655	0.1647	747.8778	800	0.0021	9.3894
515	0.3844	1745.2634	660	0.1432	650.0819			
520	0.4181	1898.3322	665	0.1251	567.8688			

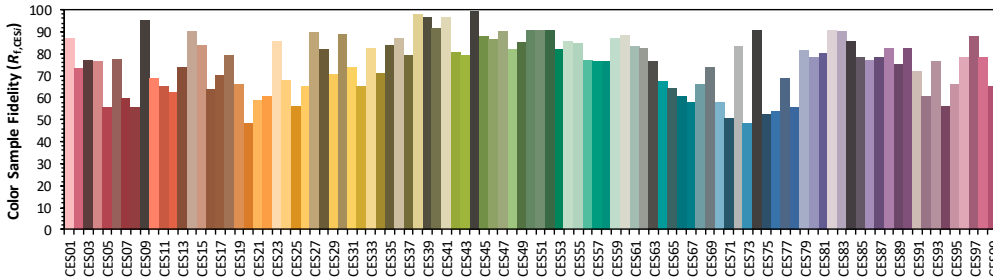
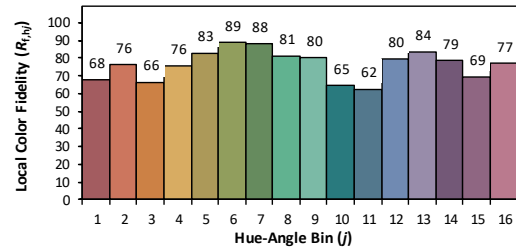
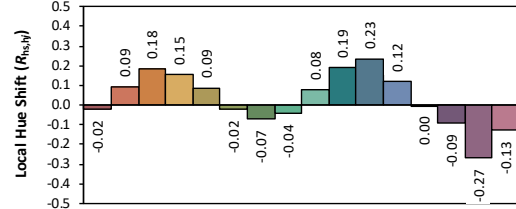
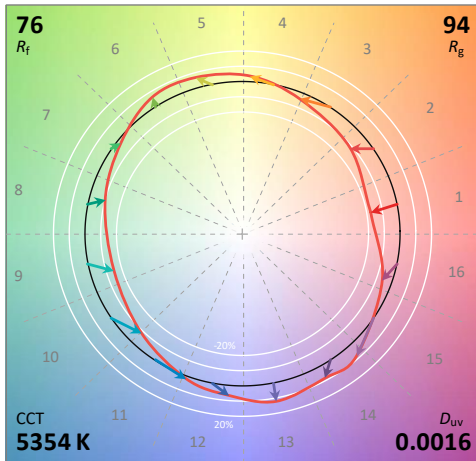
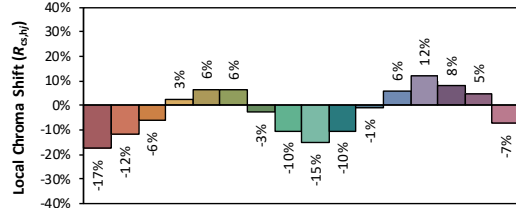
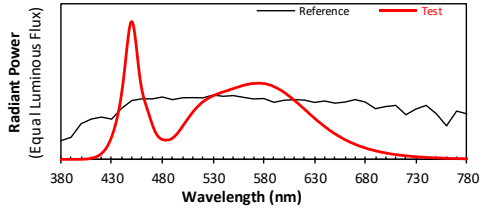


# TM30

## ANSI/IES TM-30-18 Color Rendition Report

Source: BXEM-30C-12H-6C  
Date: 2021/1/27

Manufacturer: ASHART LIGHT CO., LTD  
Model: AST-SP01B-1000WSJT1C1-acd57



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

x 0.3360  
y 0.3473  
u' 0.2069  
v' 0.4812

CIE 13.3-1995 (CRI)  
Ra 75  
Rg -27

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



**Calculated Efficacy Data for family models:**

Model Number	Luminous Flux (lm)	Power (W)	Efficacy (lm/W)
AST-SP01B-1000WSJT1C1-acd30	146084.3	1039.72	140.50
AST-SP01B-1000WSJT1C1-acd40	147061.7	1038.79	141.57
AST-SP01B-1000WSJT1C1-acd45	148039.1	1038.79	142.51
AST-SP01B-1000WSJT1C1-acd50	148772.1	1038.79	143.22
AST-SP01B-1000WSJT1C1-acd57	149993.8	1037.85	144.52

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

$$147061.7 = ( 149993.8 - 146084.3 ) / 4 + 146084.3$$

$$148039.1 = ( 149993.8 - 146084.3 ) / 4 + 147061.7$$

$$148772.1 = ( 149993.8 - 146084.3 ) / 4 + 148039.1$$

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

$$1038.79 = ( 1037.85 + 1039.72 ) / 2$$

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

$$141.57 = 147061.7 / 1038.79$$

$$142.51 = 148039.1 / 1038.79$$

$$143.22 = 148772.1 / 1038.79$$



Report No.: BLC2101029E-C

Certificate#4810.01

### 3. Test Equipment

Equipment Name	Model No.	Serial No.	Next Calibration Date
Goniophotometric System	GPM-3000	DYHXF120001	2021-02-26
AC Power Source	CHP-500C	N/A	2021-03-29
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2021-03-01
Digital Power Meter	WT500	DYDWQ200006	2021-03-29
Integral Sphere (2M)	2M	DYJCE120067	2021-02-26
Digital Power Meter	WT500	DYDWQ200006	2021-03-29
Optical Color and Electrical Measurement System	CMS-3000S	DYJCE120067	2021-02-26

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 \*\*\*\*\***