



Report No.: BLC2201039E-C

LM-79-08 Test Report

For

Beyond LED Technology

1939 Parker Court, Stone Mountain, GA 30087

Fuel Pump Canopy Luminaires

Model name(s): BLT-CP06-150WWASA1-WH57

Remark: "a" can be any two letters to represent lamp colors; "b" can be any digits for CCT.

Representative (Tested) Model:

AST-CP06-150WWASA1-a40

AST-CP06-150WWASA1-a57

Model Different: N/A

Test & Report By:

Sophie Yang

Engineer: Sophie Yang

Date: 2022-02-16

Review By:

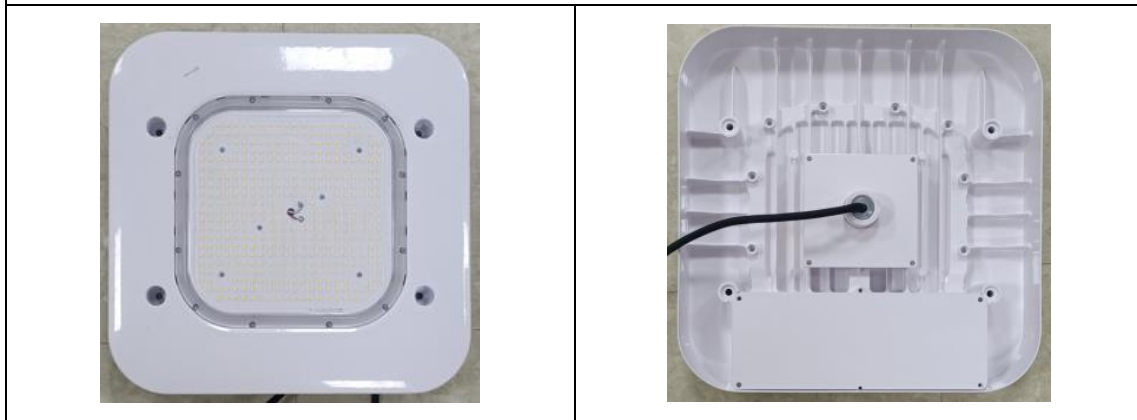
Jason Luo

Manager: Jason Luo

1.1 Product Information:

Organization Name	Beyond LED Technology	
Brand Name	Beyond LED Technology	
Model Number	BLT-CP06-150WWASA1-WH57	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Fuel Pump Canopy Luminaires	
Rated Voltage / Frequency	120-277Vac, 50/60 Hz	
Nominal Power	150W	
Rated Initial Lamp Lumen	--	
Declared CCT	4000K,4500K,5000K,5700K	
LED Manufacturer	Lumileds Holding B.V.	
LED Model	L128-XX80RA35000P1	
Sample Number	BLC2201039E-C1(4000K), C2(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	2022-01-20
Date of Test	2022-01-26
Test item	<ol style="list-style-type: none"> 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 Premium	<ol style="list-style-type: none"> 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 $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$, 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 ° vertical intervals and 22.5 ° horizontal intervals. Goniophotometer far field detector $f\theta = 1.42\%$, 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 $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. 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.

Self-absorption:

AST-CP06-150WWASA1-a40:1.0488

AST-CP06-150WWASA1-a57:1.0489

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.

Laboratory: UTEST TECHNICAL LABORATORY A2LA Certificate# 4810.01

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Report Format Number BL-FM-SA-012

2.1 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2022-01-26	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AST-CP06-150WWASA1-a40		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC220103	120.0	60	1.269	151.39	0.994	9.19
9E-C1	277.0	60	0.569	148.16	0.94	11.16
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

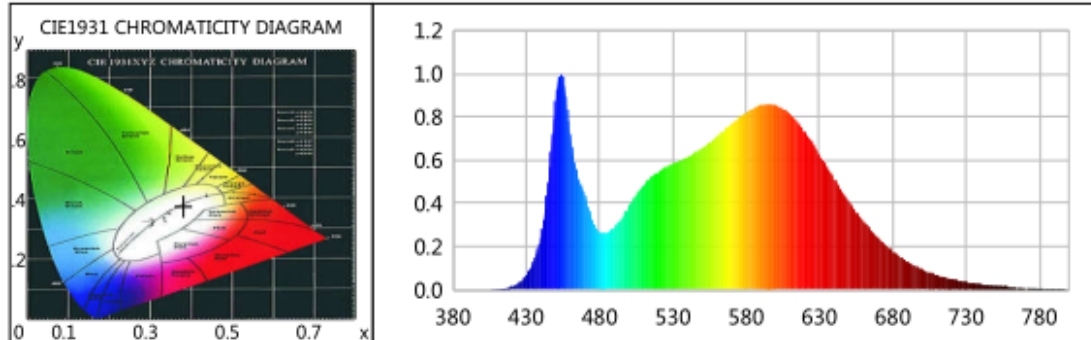
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	4
Frequency (Hz)	60	R2	91	R10	78
CCT (K)	3960	R3	96	R11	79
Duv	0.0001	R4	80	R12	60
Chromaticity (x, y)	x=0.3822 y=0.3780	R5	81	R13	84
Chromaticity (u', v')	u(u')=0.2258 v'=0.5024	R6	87	R14	98
Color Rendering Index (CRI)	83	R7	84	R15	75
R9	4	R8	62	--	--
Rf	83	--	--	--	--
Rg	93	--	--	--	--
Rcs,h1 (%)	-13	--	--	--	--

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)	21830.7	21385.5	>2000lm (-10%)
Luminous Efficacy (lm/W)	144.20	144.34	Premium: >= 120(-3%)
Most worst Luminous/Highest Watts	141.26		
Zonal lumens in the 0-40 °zone (%)	46	--	>=40(-3)
Zonal lumens in the 40-70 °zone (%)	47.0	--	>=40(-3)
Beam Angle (°)	113.8	--	--
Center Beam Candle Power (cd)	7807	--	--

Spectral Power Distribution & Chromaticity Diagram

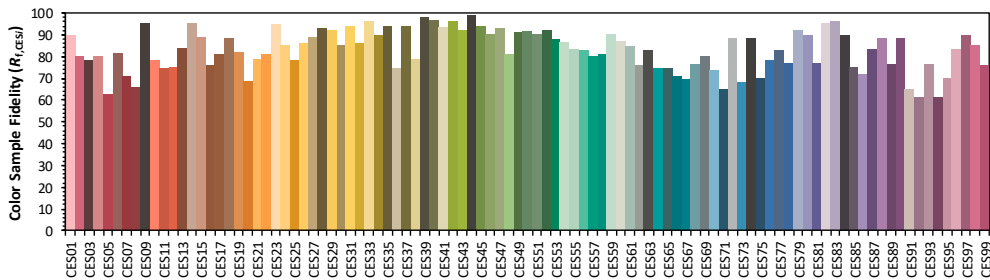
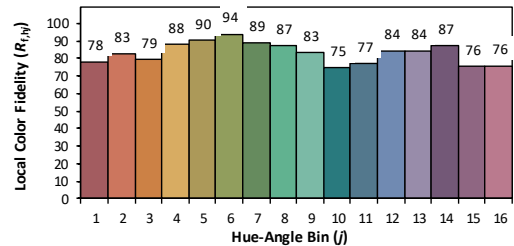
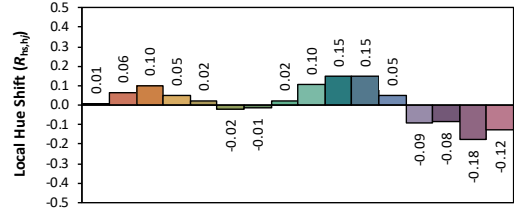
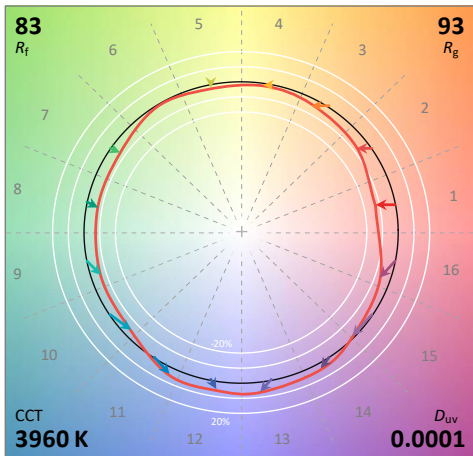
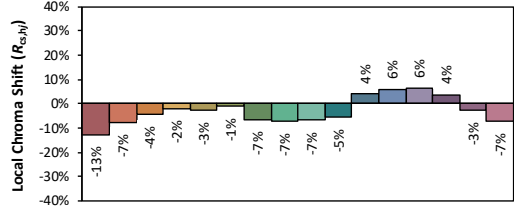
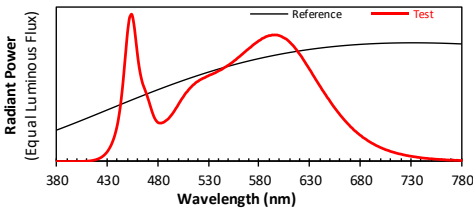


WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0005	0.2199	535	0.5656	244.1874	690	0.2398	103.5130
385	0.0006	0.2630	540	0.5820	251.2699	695	0.2069	89.3267
390	0.0003	0.1221	545	0.5975	257.9361	700	0.1781	76.9069
395	0.0006	0.2698	550	0.6146	265.3196	705	0.1541	66.5261
400	0.0003	0.1486	555	0.6339	273.6705	710	0.1313	56.7026
405	0.0011	0.4594	560	0.6546	282.5843	715	0.1122	48.4504
410	0.0025	1.0884	565	0.6807	293.8616	720	0.0953	41.1380
415	0.0068	2.9482	570	0.7086	305.8916	725	0.0801	34.5950
420	0.0156	6.7519	575	0.7383	318.7444	730	0.0685	29.5805
425	0.0331	14.2731	580	0.7668	331.0218	735	0.0586	25.3165
430	0.0664	28.6473	585	0.7957	343.5241	740	0.0507	21.8952
435	0.1300	56.1159	590	0.8205	354.2361	745	0.0425	18.3520
440	0.2492	107.5784	595	0.8399	362.5832	750	0.0363	15.6879
445	0.4970	214.5480	600	0.8549	369.0562	755	0.0314	13.5536
450	0.8732	376.9754	605	0.8590	370.8351	760	0.0258	11.1443
455	0.9847	425.1131	610	0.8546	368.9592	765	0.0221	9.5331
460	0.7191	310.4627	615	0.8385	361.9972	770	0.0190	8.2130
465	0.5293	228.5104	620	0.8123	350.6883	775	0.0159	6.8776
470	0.4332	187.0091	625	0.7761	335.0293	780	0.0130	5.5993
475	0.3252	140.3981	630	0.7304	315.3165	785	0.0108	4.6735
480	0.2655	114.6125	635	0.6793	293.2436	790	0.0094	4.0511
485	0.2647	114.2725	640	0.6249	269.7738	795	0.0089	3.8538
490	0.2877	124.2072	645	0.5695	245.8711	800	0.0080	3.4522
495	0.3301	142.4869	650	0.5140	221.8840			
500	0.3837	165.6630	655	0.4612	199.0891			
505	0.4370	188.6738	660	0.4108	177.3637			
510	0.4838	208.8569	665	0.3620	156.2630			
515	0.5201	224.5498	670	0.3172	136.9334			
520	0.5454	235.4573	675	0.2769	119.5513			
525	0.5656	244.1874	680	0.2398	103.5130			
530	0.5820	251.2699	685	0.2069	89.3267			

TM30

ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35000P1 **Manufacturer:** ASHART LIGHT CO., LTD
Date: 2022/1/26 **Model:** AST-CP06-150WWASA1-a40



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

x	0.3823	CIE 13.3-1995 (CRI) R_a 83 R_9 4
y	0.3780	
u'	0.2258	
v'	0.5024	

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

Zonal Lumen Tabulation

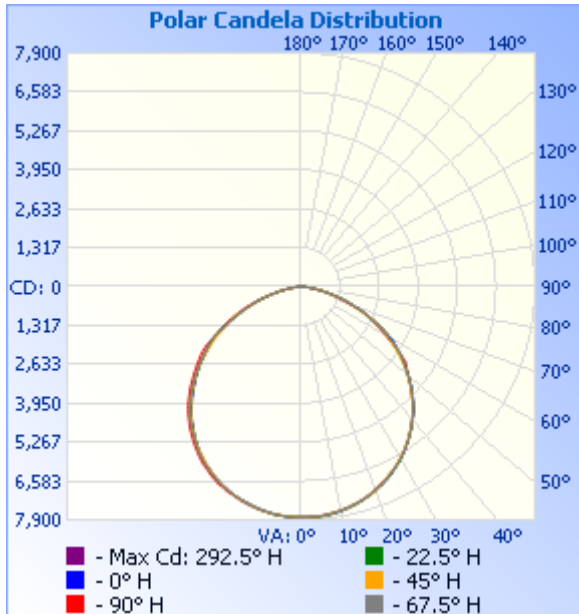
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	6,113.5	28%	28%
0-40	10,047.9	46%	46%
0-60	17,736.5	81.2%	81.3%
60-90	4,016.7	18.4%	18.4%
70-100	1,467.5	6.7%	6.7%
90-120	29.3	0.1%	0.1%
0-90	21,753.2	99.6%	99.7%
90-180	75.2	0.3%	0.3%
0-180	21,828.4	100%	100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	739.8	3.4%	90-100	15.6	0.1%
10-20	2,127.5	9.7%	100-110	6.3	0%
20-30	3,246.3	14.9%	110-120	7.4	0%
30-40	3,934.4	18.0%	120-130	8.9	0%
40-50	4,072.3	18.7%	130-140	9.5	0%
50-60	3,616.3	16.6%	140-150	10.3	0%
60-70	2,564.8	11.7%	150-160	9.1	0%
70-80	1,206.7	5.5%	160-170	6.0	0%
80-90	245.1	1.1%	170-180	2.1	0%

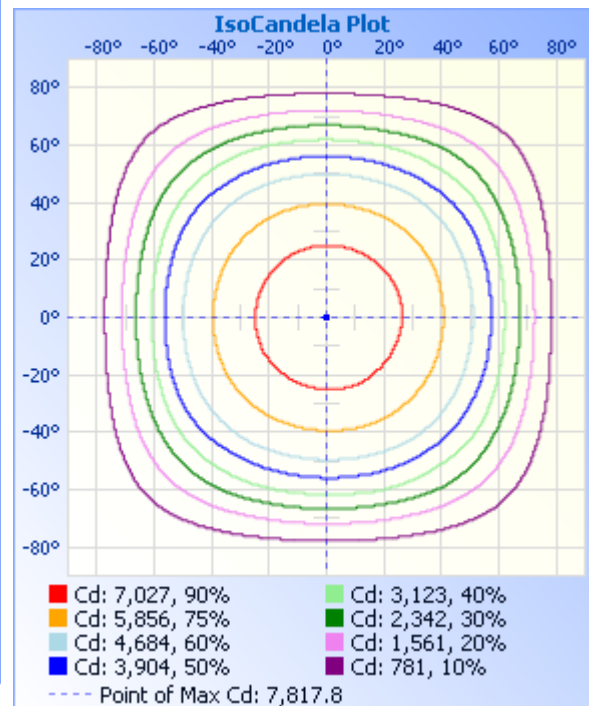
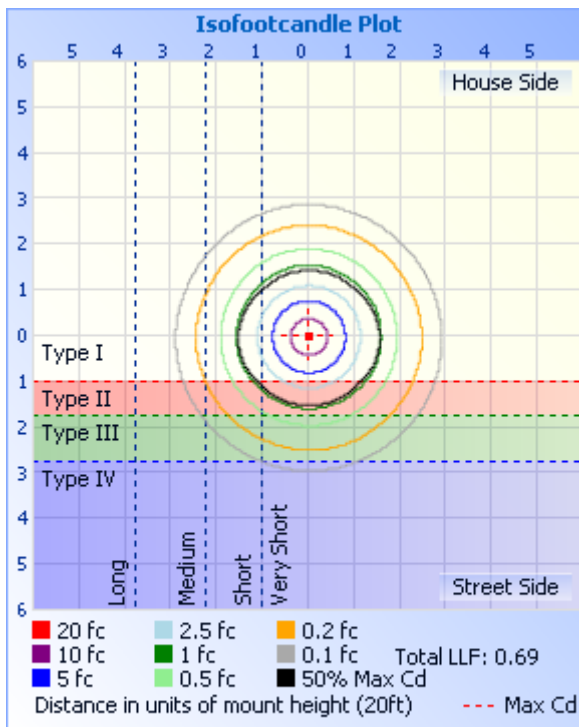
Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
17.0ft	27.0 fc	50.6 ft	52.1 ft
34.0ft	6.75 fc	101.2 ft	104.3 ft
51.0ft	3.00 fc	151.8 ft	156.4 ft
68.0ft	1.69 fc	202.5 ft	208.5 ft
85.0ft	1.08 fc	253.1 ft	260.7 ft
102.0ft	0.75 fc	303.7 ft	312.8 ft

■ Vert. Spread: 112.2°
■ Horiz. Spread: 113.8°



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	7807	7807	7807	7807	7807	7807	7807	7807	7807	7807	7807	7807	7807	7807	7807	7807	7807
1	7803	7808	7811	7802	7813	7811	7794	7808	7807	7804	7792	7807	7804	7818	7804	7803	7803
2	7802	7806	7804	7803	7808	7808	7788	7803	7806	7801	7789	7801	7802	7815	7802	7803	7802
3	7803	7816	7797	7795	7805	7802	7783	7799	7800	7798	7776	7797	7790	7809	7786	7800	7803
4	7797	7809	7798	7789	7799	7798	7773	7787	7786	7795	7777	7787	7784	7799	7780	7791	7797
5	7790	7803	7778	7777	7790	7796	7766	7778	7779	7784	7768	7779	7774	7791	7766	7778	7790
6	7776	7793	7777	7772	7774	7786	7749	7763	7763	7775	7752	7752	7764	7788	7752	7762	7776
7	7770	7777	7756	7752	7748	7769	7749	7736	7744	7759	7743	7736	7748	7762	7741	7751	7770
8	7755	7764	7738	7737	7729	7752	7720	7712	7725	7727	7724	7717	7727	7746	7729	7745	7755
9	7733	7735	7719	7714	7709	7735	7697	7689	7701	7702	7703	7699	7707	7727	7712	7721	7733
10	7708	7705	7695	7691	7687	7705	7672	7663	7664	7682	7676	7676	7689	7698	7688	7701	7708
11	7687	7684	7670	7664	7664	7676	7644	7633	7639	7652	7652	7655	7664	7679	7663	7683	7687
12	7661	7658	7641	7639	7631	7643	7615	7615	7605	7623	7618	7624	7638	7655	7636	7658	7661
13	7615	7629	7609	7604	7596	7615	7577	7582	7574	7593	7583	7591	7607	7630	7614	7625	7615
14	7583	7597	7578	7572	7572	7581	7542	7542	7541	7553	7555	7560	7580	7593	7589	7599	7583
15	7550	7560	7547	7542	7540	7544	7502	7505	7507	7525	7521	7523	7544	7561	7554	7561	7550
16	7517	7524	7508	7500	7498	7501	7467	7468	7472	7488	7482	7484	7509	7528	7517	7528	7517
17	7474	7480	7471	7465	7456	7447	7421	7422	7439	7443	7441	7438	7461	7493	7475	7490	7474
18	7437	7440	7431	7422	7416	7402	7377	7366	7393	7398	7398	7395	7424	7452	7438	7446	7437
19	7389	7397	7391	7374	7358	7359	7323	7323	7350	7355	7347	7358	7384	7410	7388	7380	7389
20	7335	7344	7342	7315	7308	7311	7277	7275	7289	7313	7299	7308	7350	7359	7344	7341	7335
21	7284	7295	7285	7263	7254	7263	7223	7225	7242	7263	7246	7269	7303	7316	7293	7289	7284
22	7237	7234	7230	7214	7201	7212	7171	7176	7187	7211	7191	7216	7259	7266	7232	7239	7237
23	7188	7179	7157	7163	7145	7155	7111	7123	7131	7153	7127	7154	7216	7217	7180	7186	7188
24	7128	7121	7098	7104	7092	7099	7053	7061	7076	7099	7073	7092	7157	7162	7119	7129	7128
25	7066	7063	7028	7041	7037	7046	6990	7003	7013	7037	7012	7037	7098	7101	7060	7066	7066
26	7003	7000	6965	6979	6976	6966	6925	6944	6943	6966	6950	6983	7037	7039	6992	7006	7003
27	6934	6934	6911	6913	6918	6902	6856	6877	6880	6899	6881	6925	6968	6970	6923	6940	6934
28	6862	6867	6842	6848	6852	6829	6793	6811	6817	6836	6822	6853	6906	6907	6863	6871	6862
29	6796	6805	6774	6785	6778	6760	6721	6733	6753	6764	6729	6784	6839	6837	6775	6790	6796

30	6722	6734	6693	6718	6710	6683	6630	6657	6668	6685	6658	6719	6767	6762	6703	6718	6722
31	6654	6643	6623	6650	6634	6607	6557	6575	6596	6601	6589	6646	6692	6686	6623	6643	6654
32	6572	6563	6548	6559	6552	6524	6483	6492	6517	6517	6517	6564	6607	6615	6546	6560	6572
33	6489	6480	6469	6480	6471	6439	6400	6406	6432	6429	6433	6464	6527	6538	6468	6472	6489
34	6402	6402	6389	6395	6394	6355	6317	6301	6342	6336	6349	6379	6442	6468	6391	6395	6402
35	6318	6317	6302	6306	6313	6267	6235	6209	6250	6246	6255	6288	6356	6387	6312	6307	6318
36	6229	6234	6219	6223	6215	6184	6144	6124	6157	6146	6165	6201	6265	6297	6219	6213	6229
37	6133	6146	6112	6128	6126	6093	6054	6029	6053	6056	6073	6112	6178	6206	6134	6119	6133
38	6042	6055	6031	6044	6037	6002	5959	5939	5954	5967	5984	6031	6090	6110	6048	6025	6042
39	5938	5956	5930	5938	5948	5903	5864	5846	5863	5879	5876	5937	6002	6009	5946	5922	5938
40	5842	5854	5837	5840	5853	5806	5761	5745	5762	5779	5785	5838	5890	5909	5849	5830	5842
41	5751	5750	5731	5758	5751	5703	5648	5648	5651	5681	5692	5737	5796	5796	5752	5720	5751
42	5654	5645	5624	5646	5657	5610	5550	5537	5536	5563	5590	5632	5695	5691	5649	5622	5654
43	5538	5549	5523	5538	5553	5492	5438	5417	5429	5456	5485	5509	5595	5586	5549	5523	5538
44	5431	5440	5417	5434	5441	5390	5335	5296	5311	5347	5351	5411	5484	5479	5439	5418	5431
45	5324	5325	5290	5319	5303	5286	5206	5181	5198	5221	5239	5290	5369	5368	5309	5308	5324
46	5220	5209	5182	5214	5186	5177	5096	5063	5074	5100	5121	5171	5253	5249	5199	5187	5220
47	5102	5096	5065	5088	5074	5054	4979	4945	4954	4984	5001	5054	5137	5141	5083	5076	5102
48	4995	4975	4954	4979	4958	4932	4860	4828	4836	4865	4888	4925	5014	5030	4960	4955	4995
49	4854	4856	4837	4860	4841	4814	4735	4695	4725	4740	4758	4798	4886	4898	4843	4844	4854
50	4737	4737	4709	4732	4717	4669	4608	4572	4596	4604	4629	4680	4768	4773	4713	4711	4737
51	4610	4622	4588	4604	4614	4564	4479	4435	4478	4479	4505	4542	4644	4639	4591	4576	4610
52	4495	4494	4459	4470	4528	4427	4347	4316	4358	4364	4371	4408	4523	4520	4458	4440	4495
53	4368	4362	4327	4364	4448	4319	4208	4178	4231	4236	4231	4272	4405	4382	4344	4314	4368
54	4247	4234	4186	4256	4350	4204	4068	4059	4100	4101	4075	4130	4281	4260	4188	4184	4247
55	4113	4111	4065	4154	4194	4103	3911	3928	3959	3959	3934	4002	4183	4130	4045	4065	4113
56	3989	3967	3937	4036	4028	3984	3774	3802	3833	3832	3801	3886	4069	4010	3904	3925	3989
57	3870	3831	3785	3901	3821	3841	3646	3638	3717	3703	3658	3795	3938	3901	3754	3796	3870
58	3750	3683	3653	3760	3658	3680	3503	3498	3638	3573	3523	3692	3787	3782	3624	3672	3750
59	3640	3567	3519	3597	3463	3506	3360	3395	3515	3445	3387	3550	3608	3643	3483	3545	3640
60	3506	3449	3386	3397	3301	3309	3239	3295	3338	3337	3239	3392	3415	3491	3336	3404	3506
61	3337	3314	3264	3228	3174	3149	3136	3171	3158	3214	3080	3217	3232	3315	3198	3283	3337

62	3176	3182	3126	3069	3006	2996	3013	3003	2996	3054	2921	3007	3071	3141	3052	3137	3176
63	3025	3029	2964	2921	2875	2830	2837	2833	2826	2871	2801	2812	2919	2946	2931	2970	3025
64	2841	2867	2806	2747	2739	2669	2682	2666	2674	2697	2690	2671	2770	2807	2799	2831	2841
65	2675	2696	2680	2597	2594	2518	2515	2493	2517	2519	2570	2517	2641	2640	2649	2678	2675
66	2536	2507	2515	2463	2448	2360	2373	2344	2374	2356	2435	2368	2492	2474	2500	2509	2536
67	2398	2362	2342	2315	2308	2223	2204	2173	2225	2203	2272	2218	2344	2336	2354	2319	2398
68	2238	2243	2136	2183	2158	2080	2029	2039	2087	2048	2074	2074	2202	2171	2186	2171	2238
69	2059	2084	1987	2042	1974	1946	1852	1897	1918	1908	1876	1921	2033	2057	2040	1999	2059
70	1892	1883	1871	1873	1808	1788	1728	1755	1772	1757	1719	1765	1867	1897	1863	1868	1892
71	1766	1739	1738	1725	1656	1619	1594	1603	1653	1623	1591	1619	1722	1727	1702	1715	1766
72	1665	1607	1559	1601	1497	1483	1441	1470	1511	1482	1457	1490	1561	1570	1560	1569	1665
73	1515	1507	1433	1418	1368	1346	1299	1364	1352	1360	1303	1364	1418	1440	1416	1467	1515
74	1312	1382	1301	1288	1226	1197	1190	1231	1194	1223	1180	1194	1282	1310	1288	1329	1312
75	1174	1191	1148	1174	1109	1095	1040	1066	1060	1087	1053	1085	1151	1160	1133	1169	1174
76	1067	1057	1017	1022	949	981	930	933	947	947	950	981	1010	1051	1026	1031	1067
77	947	945	931	896	842	842	820	809	841	820	823	863	888	919	915	920	947
78	830	822	821	795	741	712	714	712	712	713	711	709	764	792	796	811	830
79	725	731	686	686	612	615	590	618	632	611	615	611	662	686	690	698	725
80	605	628	586	573	532	516	501	538	527	546	501	541	562	593	586	608	605
81	507	515	493	496	428	447	420	442	422	444	434	440	456	497	494	500	507
82	428	435	415	406	346	354	353	358	352	367	369	342	372	406	408	423	428
83	351	361	342	328	278	278	286	309	289	312	296	283	288	316	343	356	351
84	269	275	271	275	219	222	210	221	210	234	217	225	224	263	257	280	269
85	216	216	211	209	158	167	167	172	160	167	175	171	171	190	201	224	216
86	164	165	158	151	113	119	122	125	110	133	132	124	119	143	153	167	164
87	114	115	123	106	76	93	90	92	92	92	99	94	76	96	114	121	114
88	84	77	87	85	57	63	59	64	66	72	72	75	57	70	84	84	84
89	66	67	63	66	46	48	46	48	48	52	52	52	39	56	59	60	66
90	46	47	46	48	23	37	40	38	39	40	40	48	34	41	45	56	46
91	44	46	44	42	19	29	20	34	34	34	38	33	30	31	39	43	44
92	32	37	35	27	13	8	20	25	25	34	27	33	21	27	25	33	32
93	27	30	24	21	0	8	11	23	25	21	18	22	13	13	18	28	27

94	19	22	16	13	0	0	0	12	18	13	9	14	0	0	11	14	19
95	10	10	12	14	0	0	0	0	11	9	9	0	0	0	0	14	10
96	8	0	8	17	0	0	0	8	0	10	9	12	0	0	0	7	8
97	12	13	9	11	0	0	0	9	13	14	9	10	0	0	0	9	12
98	10	15	10	12	0	0	0	0	9	8	10	12	0	0	0	0	10
99	9	11	12	12	0	0	0	9	12	8	8	9	0	0	0	8	9
100	9	11	0	12	0	0	0	9	10	12	10	10	0	0	0	10	9
101	10	10	8	16	0	0	0	8	8	10	0	0	0	0	0	12	10
102	13	9	13	15	0	0	0	12	8	10	12	8	0	0	0	12	13
103	9	13	10	10	0	0	0	0	0	11	8	12	0	0	0	8	9
104	11	14	11	13	0	0	0	8	0	9	12	9	0	0	0	8	11
105	7	15	11	15	0	0	0	8	7	8	10	8	0	0	0	10	7
106	12	0	0	14	0	0	0	8	12	11	0	10	0	0	11	13	12
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109	13	9	11	15	0	0	0	0	10	15	0	14	0	0	0	9	13
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113	15	13	12	14	0	0	0	10	9	15	10	9	0	0	0	10	15
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115	12	12	13	10	0	0	0	13	10	8	8	12	0	0	0	11	12
116	10	10	11	12	0	0	0	10	12	14	9	11	0	0	0	10	10
117	12	14	14	15	0	0	0	7	12	11	10	11	0	7	0	9	12
118	14	14	15	15	0	0	0	10	14	12	11	10	0	0	11	12	14
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120	12	12	17	11	0	0	0	13	10	13	11	12	0	0	0	10	12
121	11	15	16	18	0	0	0	11	11	12	12	10	0	0	11	13	11
122	13	14	16	11	0	0	0	10	17	11	11	15	0	0	11	14	13
123	18	15	16	11	0	0	0	12	14	16	14	13	0	0	13	12	18
124	17	18	15	15	0	0	11	11	17	12	13	17	0	0	9	10	17
125	15	17	20	14	0	0	7	10	9	13	13	14	0	10	10	17	15

126	13	19	12	16	0	8	0	14	15	15	12	13	0	0	0	11	13
127	20	18	20	15	0	0	8	12	11	13	9	11	11	0	9	16	20
128	12	18	15	15	0	0	8	9	11	16	12	18	0	9	0	15	12
129	15	18	15	15	0	0	8	12	13	13	17	16	9	0	9	18	15
130	16	19	16	20	0	0	7	14	11	15	14	15	8	10	12	20	16
131	15	19	14	20	0	0	0	12	14	16	15	13	0	8	10	11	15
132	21	15	15	17	0	0	7	15	11	17	13	14	8	8	12	11	21
133	16	22	17	16	0	0	0	13	12	12	14	16	0	10	7	15	16
134	18	17	12	20	0	0	8	13	19	15	16	17	0	9	14	18	18
135	23	18	17	16	0	0	0	16	12	15	14	19	0	9	13	15	23
136	16	14	19	19	0	8	9	11	17	10	19	17	10	0	12	17	16
137	18	22	19	20	0	8	8	11	17	16	18	17	9	8	16	16	18
138	21	22	17	20	0	0	9	14	19	16	16	16	0	8	18	19	21
139	16	20	17	17	0	10	14	15	14	14	16	17	0	11	19	16	16
140	25	20	18	17	0	10	14	13	18	16	15	18	0	10	14	17	25
141	21	21	21	22	8	8	12	17	12	18	19	21	12	11	18	22	21
142	19	20	19	22	0	0	11	19	17	12	19	20	9	8	17	19	19
143	21	23	22	0	9	0	12	16	22	17	21	0	8	14	16	20	21
144	24	23	21	22	0	11	12	8	19	14	23	20	9	17	16	18	24
145	22	21	21	19	0	8	13	18	18	19	21	19	12	14	19	23	22
146	26	23	22	22	0	12	13	19	18	22	24	18	11	15	16	20	26
147	25	27	24	23	9	10	16	23	22	21	18	24	12	13	19	21	25
148	25	21	18	21	8	9	11	20	19	20	21	21	13	12	19	16	25
149	24	24	17	19	10	0	15	17	20	21	21	21	13	13	20	17	24
150	28	24	23	28	8	12	16	18	17	23	17	23	11	17	21	24	28
151	20	24	23	22	0	11	14	15	20	20	23	20	18	17	16	23	20
152	22	28	26	19	10	13	12	19	20	22	29	26	18	17	22	23	22
153	27	23	24	20	0	15	14	20	22	24	24	21	12	13	17	21	27
154	24	27	24	24	9	14	16	20	21	20	21	23	17	16	20	22	24
155	19	26	27	24	0	12	17	17	23	24	23	25	15	16	21	24	19
156	20	28	26	25	9	13	15	21	24	22	23	21	16	20	21	21	20
157	27	17	21	26	7	12	21	19	23	28	25	24	13	18	23	26	27

158	24	29	22	27	0	15	15	24	24	24	25	26	13	16	19	19	24
159	26	27	26	25	9	14	15	23	21	26	25	27	13	19	24	22	26
160	25	23	29	23	11	12	13	17	18	21	28	24	12	20	16	26	25
161	25	20	27	24	12	12	15	17	26	27	24	23	12	14	15	26	25
162	22	20	27	28	12	16	11	25	20	25	24	24	15	20	24	19	22
163	26	28	21	26	17	18	17	23	23	26	18	23	11	16	23	21	26
164	25	16	24	28	12	14	14	22	25	27	28	25	16	17	22	21	25
165	26	20	27	28	10	14	19	21	20	20	29	25	17	15	25	24	26
166	21	23	29	25	10	13	21	22	20	27	20	24	12	18	14	23	21
167	28	31	28	24	11	17	19	23	26	24	25	24	14	17	23	25	28
168	28	29	27	30	10	13	22	23	23	25	23	26	12	20	21	28	28
169	25	22	17	22	8	16	17	24	23	28	30	28	17	18	23	28	25
170	22	30	26	25	12	13	13	24	29	28	27	29	15	17	22	22	22
171	24	26	29	30	12	17	21	29	21	30	29	24	21	12	20	22	24
172	25	24	30	30	11	13	21	28	26	21	20	25	15	17	21	24	25
173	28	26	24	28	8	11	18	26	22	21	25	16	15	21	24	28	28
174	20	26	27	25	14	18	17	27	26	26	32	24	14	18	25	26	20
175	26	22	25	27	14	16	22	23	25	26	25	23	18	19	25	25	26
176	25	26	26	24	10	18	19	22	18	27	20	29	17	23	25	28	25
177	26	30	26	31	9	15	22	26	27	27	31	26	11	21	19	25	26
178	26	24	26	26	12	13	18	19	26	29	23	29	12	20	19	28	26
179	24	22	21	29	10	18	24	24	25	24	24	28	16	22	22	26	24
180	20	27	25	25	9	17	16	21	18	20	27	25	17	16	21	18	20



Report No.: BLC2201039E-C

BUG

Lum. Classification System (LCS)

<u>LCS Zone</u>	<u>Lumens</u>	<u>%Lamp</u>	<u>%Lum</u>
FL (0-30)	3063.8	14.0	14.0
FM (30-60)	5859.5	26.8	26.8
FH (60-80)	1937.4	8.9	8.9
FVH(80-90)	131.7	0.6	0.6
BL (0-30)	3049.8	14.0	14.0
BM (30-60)	5765.8	26.4	26.4
BH (60-80)	1834.0	8.4	8.4
BVH(80-90)	113.3	0.5	0.5
UL (90-100)	15.6	0.1	0.1
UH (100-180)	59.6	0.3	0.3
Total	21830.5	100.0	100.0
BUG Rating	B4-U3-G2		

2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2022-01-26	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AST-CP06-150WWASA1-a57		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC220103	120.0	60	1.275	152.08	0.994	9.27
9E-C2	277.0	60	0.573	149.13	0.94	11.22
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

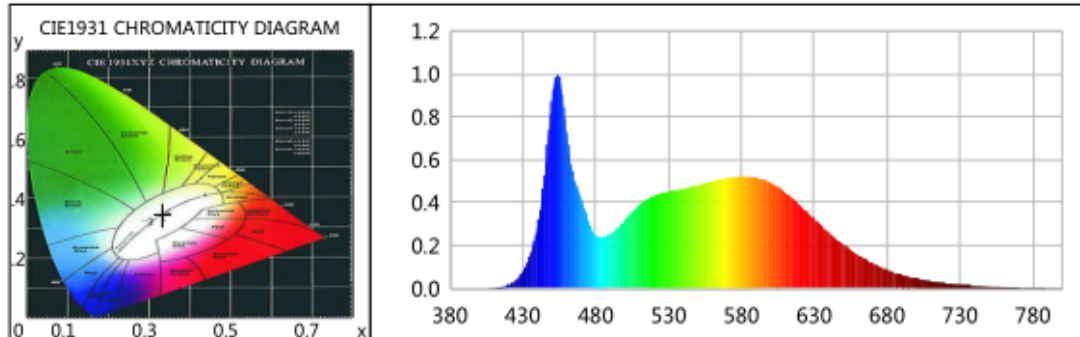
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	1
Frequency (Hz)	60	R2	90	R10	75
CCT (K)	5503	R3	94	R11	80
Duv	0.0023	R4	81	R12	59
Chromaticity (x, y)	x=0.3324 y=0.3455	R5	82	R13	84
Chromaticity (u', v')	u(u')=0.2052 v'=0.4798	R6	85	R14	97
Color Rendering Index (CRI)	83	R7	85	R15	76
R9	1	R8	65	--	--
Rf	82	--	--	--	--
Rg	93	--	--	--	--
Rcs,h1 (%)	-14	--	--	--	--

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)	22290.4	21886.3	>2000(-10%)
Luminous Efficacy (lm/W)	146.57	146.76	Premium: >= 120(-3%)
Most worst Luminous/Highest Watts	143.91		

Spectral Power Distribution & Chromaticity Diagram

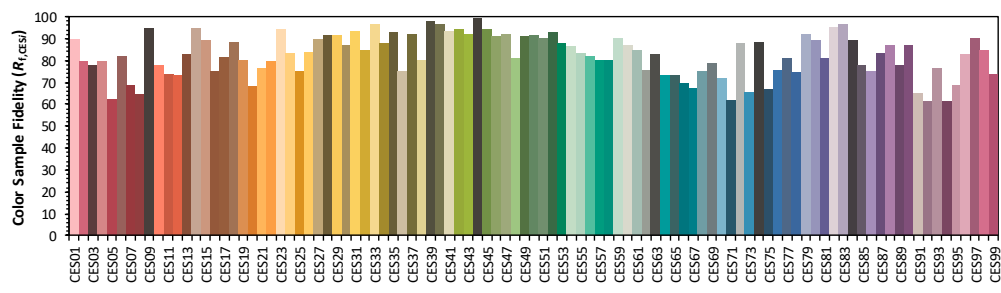
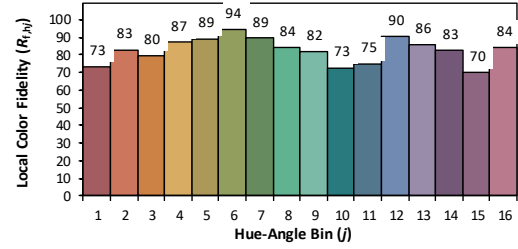
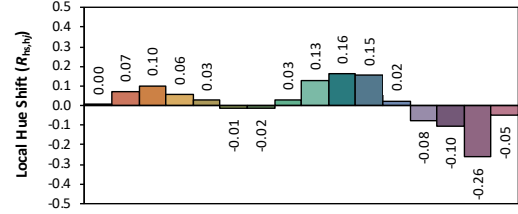
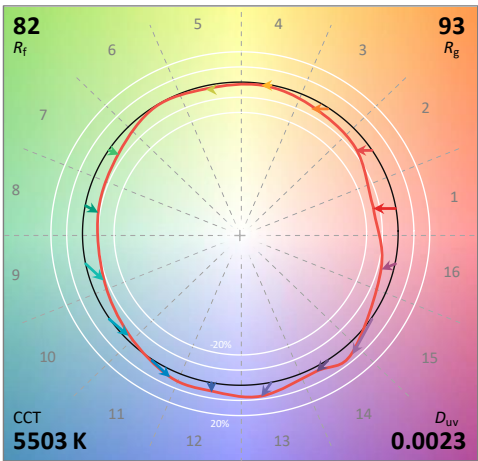
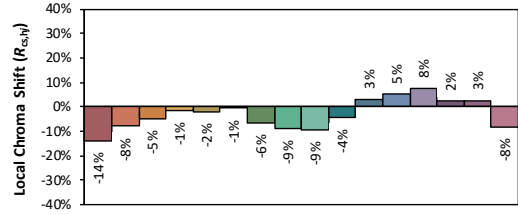
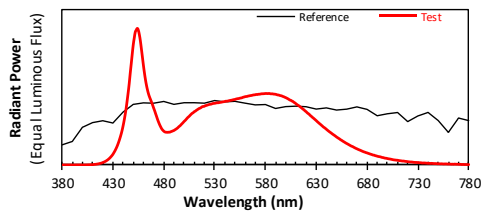


WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0899	535	0.4435	278.7179	690	0.1188	74.6315
385	0.0005	0.3162	540	0.4515	283.7755	695	0.1021	64.1808
390	0.0004	0.2253	545	0.4576	287.5669	700	0.0886	55.7009
395	0.0005	0.3315	550	0.4647	292.0293	705	0.0757	47.5734
400	0.0006	0.3891	555	0.4720	296.6069	710	0.0646	40.5970
405	0.0010	0.6479	560	0.4797	301.4885	715	0.0551	34.6286
410	0.0027	1.7070	565	0.4892	307.4238	720	0.0474	29.8020
415	0.0077	4.8495	570	0.4998	314.1012	725	0.0398	25.0171
420	0.0180	11.2853	575	0.5077	319.0546	730	0.0348	21.8951
425	0.0386	24.2744	580	0.5142	323.1569	735	0.0289	18.1417
430	0.0786	49.4062	585	0.5191	326.2219	740	0.0245	15.3822
435	0.1541	96.8224	590	0.5231	328.7373	745	0.0208	13.0748
440	0.2862	179.8970	595	0.5211	327.4871	750	0.0181	11.3820
445	0.5297	332.8672	600	0.5174	325.1886	755	0.0149	9.3544
450	0.8795	552.7653	605	0.5075	318.9535	760	0.0123	7.7450
455	0.9863	619.8661	610	0.4931	309.8772	765	0.0112	7.0396
460	0.7296	458.5559	615	0.4735	297.5634	770	0.0091	5.7492
465	0.5207	327.2723	620	0.4485	281.8782	775	0.0076	4.7631
470	0.4183	262.8621	625	0.4211	264.6509	780	0.0069	4.3419
475	0.3124	196.3533	630	0.3907	245.5700	785	0.0054	3.3870
480	0.2480	155.8646	635	0.3576	224.7191	790	0.0051	3.2157
485	0.2403	151.0387	640	0.3250	204.2449	795	0.0040	2.5287
490	0.2527	158.7994	645	0.2919	183.4293	800	0.0033	2.0624
495	0.2814	176.8381	650	0.2615	164.3679			
500	0.3187	200.2735	655	0.2325	146.1341			
505	0.3563	223.9189	660	0.2050	128.8587			
510	0.3902	245.2172	665	0.1806	113.5263			
515	0.4144	260.4187	670	0.1574	98.9474			
520	0.4300	270.2586	675	0.1371	86.1368			
525	0.4435	278.7179	680	0.1188	74.6315			
530	0.4515	283.7755	685	0.1021	64.1808			

TM30

ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35000P1 Manufacturer: ASHART LIGHT CO., LTD
 Date: 2022/1/26 Model: AST-CP06-150WWASA1-a57



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

x	0.3324	CIE 13.3-1995 (CRI)
y	0.3455	
u'	0.2052	
v'	0.4798	
		R_a 83
		R_9 1

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-CP06-150WWASA1-a40	21830.7	151.39	144.2
AST-CP06-150WWASA1-a45	21945.6	151.74	144.63
AST-CP06-150WWASA1-a50	22060.6	151.91	145.22
AST-CP06-150WWASA1-a57	22290.4	152.08	146.57

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

$$21945.6 = (22290.4 - 21830.7) / 4 + 21830.7$$

$$22060.6 = (22290.4 - 21830.7) / 4 + 21945.6$$

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

$$151.74 = (152.08 + 151.39) / 2$$

$$151.91 = (152.08 + 151.74) / 2$$

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

$$144.63 = 21945.6 / 151.74$$

$$145.22 = 22060.6 / 151.91$$

3. Test Equipment

Equipment Name	Model No.	Serial No.	Calibration Date
Goniophotometric 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 *****