



Report No.:BLC2008004E-C

M-79-08 Test Report

For

Beyond LED Technology

(Brand Name: Beyond)

1939 Parker Court, Stone Mountain, GA 30087

Replacement Lamps for High-Bay Luminaires (UL Type B)

Model name(s): AST-CLW08C-120WBCNA1-EXSPCA30/40/50K
Remark: Z=Sensor type. "N" for none sensor, "M" for motion sensor, "P" for PIR sensor.
the "a" represent the lamp base type, can be "E" for E39, "EX" for EX39
d= dimming type: "L" for Continuous dimming
c= CAXX for color tunable, XX can be two digital.

Representative (Tested) Model:

AST-CLW08C-120WBCZA1-adPCA30K(Tested at 0% CCT Setting)
AST-CLW08C-120WBCZA1-adPCA40K(Tested at 50% CCT Setting)
AST-CLW08C-120WBCZA1-adPCA50K(Tested at 100% CCT
Setting)

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

Test & Report By:

Grace Li

Engineer: Grace Li

Date: Sept 9, 2020

Review By:

Jason Luo

Manager: Jason Luo



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1.1 Product Information:

Organization Name	Beyond LED Technology	
Brand Name	Beyond	
Model Number	AST-CLW08C-120WBCNA1-EXSPCA30/40/50K	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Replacement Lamps for High-Bay Luminaires (UL Type B)	
Rated Voltage / Frequency	100-277 VAC, 50/60 Hz	
Nominal Power	120W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K,4000K,5000K(Color tunable)	
LED Manufacturer	Lumileds Holding B.V.	
LED Model	L128-XX80RA35000H1	
Sample Number	BLC2008004E-C1	
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	Aug 5, 2020
Date of Test	Aug 6, 2020
Test item	<ol style="list-style-type: none">1. Total Luminous Flux2. Luminous Distribution Intensity3. Luminous Efficacy4. Correlated Color Temperature5. Color Rendering Index6. Chromaticity Coordinate7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none">1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources4. CIE 15-2004 Technical Report Colorimetry5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source6. 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.

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)*

Test date	2020-08-06	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AST-CLW08C-120WBCNA1-EXSPCA30/40/50K 0K(Tested at 0% CCT Setting)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200800	120.0	60	1.0266	122.33	0.993	8.85
4E-C1	277.0	60	0.4751	123.30	0.937	13.76
DLC Pass Criteria					$\geq 0.9(-3\%)$	$\leq 20(+5)$

Chromaticity Measurement - Sphere-Spectroradiometer Method in Lithonia THD 400S A15 TB:

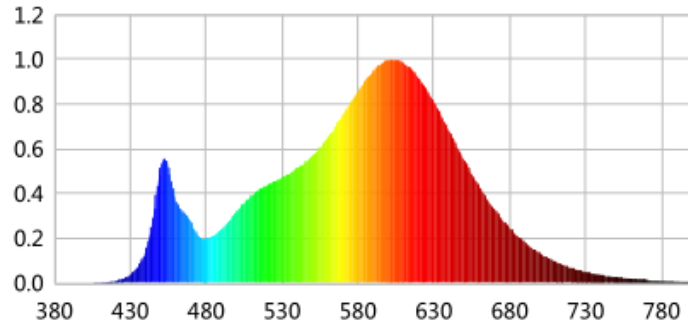
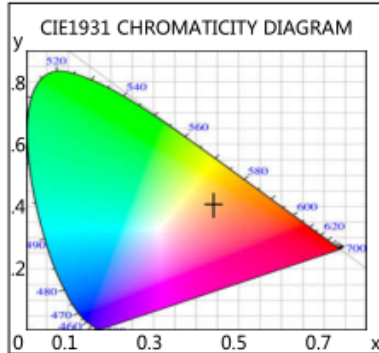
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	2
Frequency (Hz)	60	R2	92	R10	83
CCT (K)	2948	R3	94	R11	79
Duv	-0.0005	R4	80	R12	73
Chromaticity (x, y)	x=0.4399 y=0.4037	R5	82	R13	84
Chromaticity (u', v')	u(u')=0.2526 v'=0.5217	R6	92	R14	97
Color Rendering Index (CRI)	82	R7	80	R15	72
R9	3	R8	56	--	--
Rf	84	--	--	--	--
Rg	94	--	--	--	--
Rcs,h1(%)	-12	--	--	--	--

Photometric Measurement – Goniophotometer Method in Lithonia THD 400S A15 TB:

Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	15102.9	15127.7	$\geq 10000\text{lm} (-10\%)$
Luminous Efficacy (lm/W)	123.46	122.69	Standard: $\geq 120(-3\%)$
Most worst Luminous/Highest Watts	122.49		
Zonal lumens in the 0-90 ° zone (%)	43.50	--	$\geq 65(-3)$
Beam Angle (°)	137.3	--	--
Center Beam Candle Power (cd)	1733	--	--



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	0.0892	525	0.4552	145.2311	670	0.3286	104.8424
385	0.0002	0.0732	530	0.4715	150.4452	675	0.2841	90.6589
390	0.0003	0.1092	535	0.4890	156.0345	680	0.2457	78.3861
395	0.0006	0.1835	540	0.5129	163.6598	685	0.2118	67.5964
400	0.0007	0.2143	545	0.5375	171.5097	690	0.1817	57.9927
405	0.0009	0.2785	550	0.5691	181.5754	695	0.1545	49.2847
410	0.0022	0.7017	555	0.6044	192.8634	700	0.1327	42.3453
415	0.0048	1.5440	560	0.6484	206.8987	705	0.1127	35.9573
420	0.0099	3.1557	565	0.6972	222.4495	710	0.0961	30.6697
425	0.0194	6.1880	570	0.7480	238.6820	715	0.0822	26.2182
430	0.0387	12.3376	575	0.8049	256.8395	720	0.0692	22.0805
435	0.0742	23.6826	580	0.8588	274.0289	725	0.0592	18.8753
440	0.1428	45.5521	585	0.9043	288.5339	730	0.0499	15.9373
445	0.2964	94.5640	590	0.9488	302.7535	735	0.0424	13.5132
450	0.5185	165.4582	595	0.9785	312.2175	740	0.0362	11.5515
455	0.5206	166.1094	600	0.9963	317.9061	745	0.0311	9.9155
460	0.3700	118.0463	605	0.9983	318.5423	750	0.0258	8.2426
465	0.3190	101.7834	610	0.9860	314.6114	755	0.0217	6.9272
470	0.2684	85.6266	615	0.9597	306.2230	760	0.0193	6.1581
475	0.2098	66.9560	620	0.9192	293.2902	765	0.0154	4.9283
480	0.1984	63.3039	625	0.8677	276.8646	770	0.0144	4.6090
485	0.2148	68.5532	630	0.8113	258.8863	775	0.0107	3.4195
490	0.2377	75.8562	635	0.7471	238.3899	780	0.0099	3.1461
495	0.2758	88.0162	640	0.6825	217.7818	785	0.0080	2.5674
500	0.3196	101.9777	645	0.6141	195.9352	790	0.0070	2.2326
505	0.3569	113.8678	650	0.5508	175.7625	795	0.0058	1.8541
510	0.3911	124.7945	655	0.4894	156.1436	800	0.0039	1.2349
515	0.4164	132.8760	660	0.4311	137.5662			
520	0.4373	139.5270	665	0.3764	120.1026			

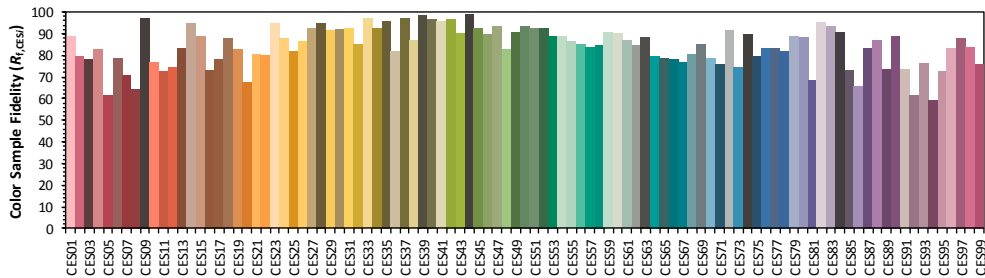
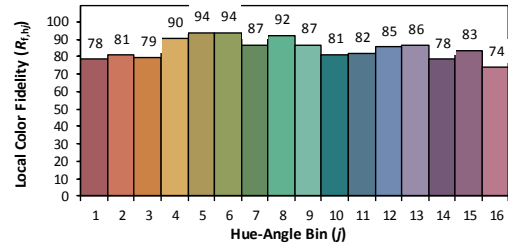
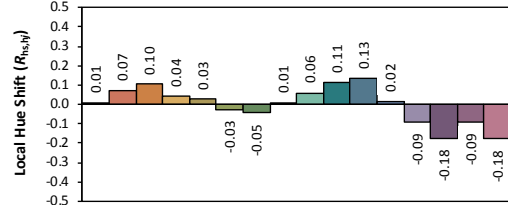
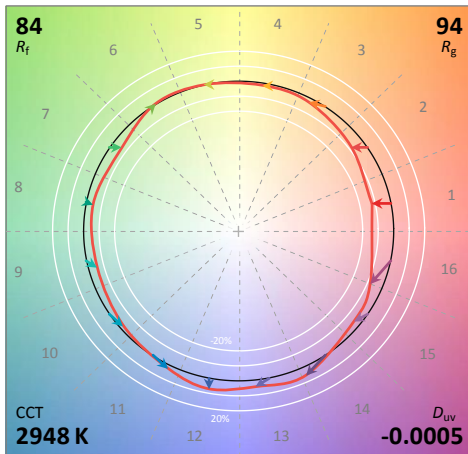
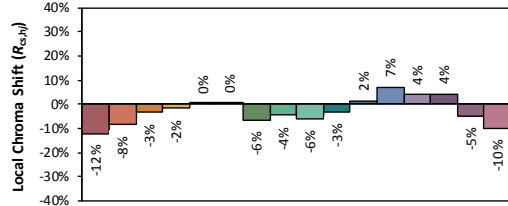
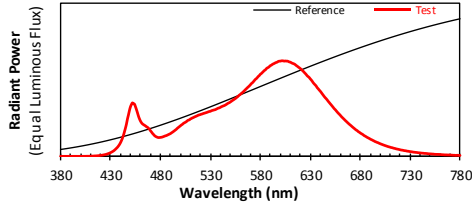


TM30

ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35000H1
Date: 2020/8/6

Manufacturer: ASmart LIGHT CO., LTD
Model: AST-CLW08C-120WBCZA1-ad30K (Tested at 0% CCT Setting)



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

x 0.4399
 y 0.4037
 u' 0.2526
 v' 0.5217

CIE 13.3-1995 (CRI)	
R_a	82
R_g	3

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

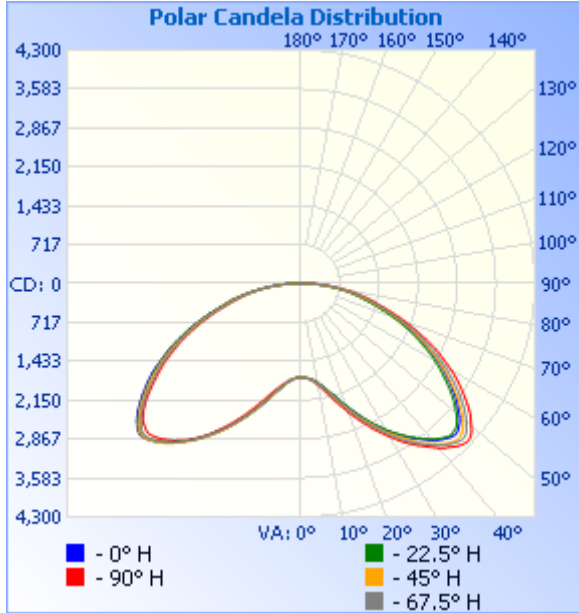
Zone	Lumens	% Lamp	% Luminaire
0-30	2,095.4	13.9%	13.9%
0-40	4,301.6	28.5%	28.5%
0-60	10,461.6	69.3%	69.3%
60-90	4,518.7	29.9%	29.9%
70-100	2,153.0	14.3%	14.3%
90-120	85.5	0.6%	0.6%
0-90	14,980.4	99.2%	99.2%
90-180	122.0	0.8%	0.8%
0-180	15,102.3	100%	100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	172.5	1.1%	90-100	67.6	0.4%
10-20	615.7	4.1%	100-110	8.3	0.1%
20-30	1,307.1	8.7%	110-120	9.6	0.1%
30-40	2,206.3	14.6%	120-130	9.8	0.1%
40-50	3,056.4	20.2%	130-140	8.4	0.1%
50-60	3,103.6	20.6%	140-150	7.5	0%
60-70	2,433.3	16.1%	150-160	6.0	0%
70-80	1,484.6	9.8%	160-170	3.8	0%
80-90	600.8	4.0%	170-180	1.1	0%

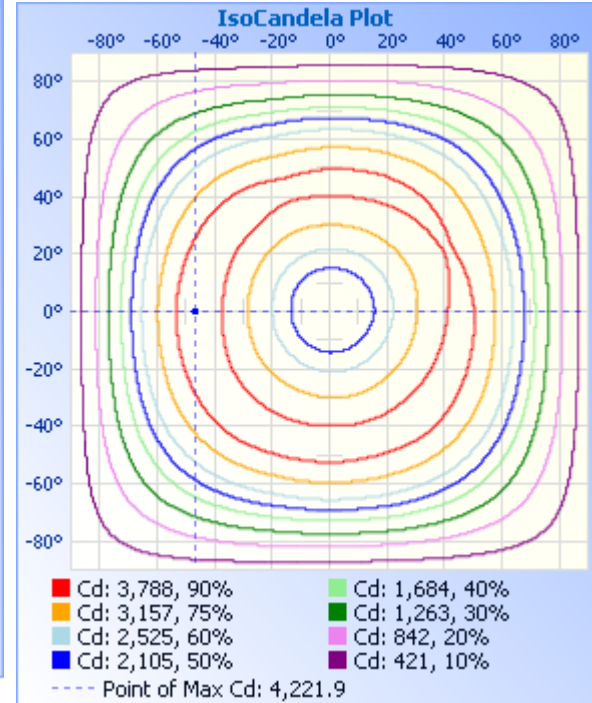
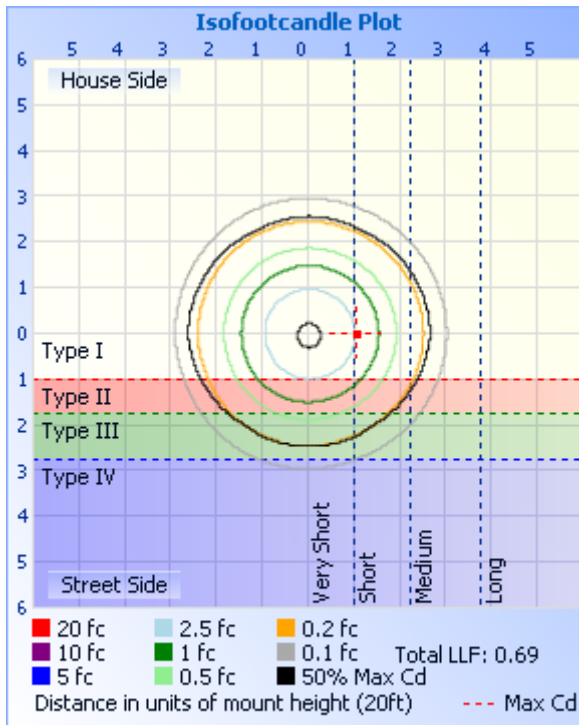


Photometric Data



	Center Beam fc	Beam Width	
17.0ft	6.00 fc	53.3 ft	17.9 ft
34.0ft	1.50 fc	106.5 ft	35.9 ft
51.0ft	0.67 fc	159.8 ft	53.8 ft
68.0ft	0.37 fc	213.0 ft	71.8 ft
85.0ft	0.24 fc	266.3 ft	89.7 ft
102.0ft	0.17 fc	319.5 ft	107.6 ft

■ Vert. Spread: 114.9°
■ Horiz. Spread: 55.6°





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	1733	1733	1733	1733	1733	1733	1733	1733	1733	1733	1733	1733	1733	1733	1733	1733	1733
1	1733	1732	1733	1735	1735	1735	1732	1732	1731	1731	1733	1735	1734	1732	1733	1731	1733
2	1734	1734	1736	1738	1736	1735	1735	1736	1734	1732	1735	1734	1738	1735	1735	1734	1734
3	1738	1739	1741	1744	1743	1743	1744	1744	1740	1739	1740	1738	1743	1741	1742	1739	1738
4	1746	1748	1750	1754	1755	1754	1754	1755	1753	1749	1749	1745	1749	1746	1746	1746	1746
5	1754	1756	1760	1766	1768	1769	1772	1770	1771	1765	1763	1761	1761	1756	1755	1752	1754
6	1768	1770	1775	1784	1790	1792	1795	1792	1791	1787	1779	1779	1775	1769	1767	1768	1768
7	1786	1788	1797	1806	1813	1817	1823	1818	1814	1810	1806	1801	1795	1790	1784	1783	1786
8	1807	1810	1821	1833	1843	1850	1851	1846	1843	1843	1835	1828	1821	1814	1805	1803	1807
9	1837	1845	1853	1867	1874	1884	1889	1882	1876	1875	1870	1860	1848	1840	1832	1832	1837
10	1866	1876	1885	1904	1919	1923	1927	1922	1918	1915	1909	1896	1880	1870	1864	1862	1866
11	1900	1910	1925	1940	1965	1969	1975	1968	1962	1960	1952	1940	1911	1901	1898	1893	1900
12	1937	1946	1964	1984	2011	2017	2021	2017	2005	2001	1996	1985	1954	1938	1934	1933	1937
13	1982	1991	2007	2028	2059	2064	2071	2068	2053	2049	2048	2027	1993	1982	1972	1972	1982
14	2028	2030	2055	2079	2113	2127	2135	2126	2106	2109	2100	2079	2042	2028	2016	2017	2028
15	2077	2083	2107	2135	2175	2182	2196	2186	2166	2161	2157	2135	2090	2077	2068	2069	2077
16	2126	2133	2161	2190	2245	2249	2257	2245	2221	2225	2215	2195	2141	2127	2118	2118	2126
17	2182	2192	2225	2246	2305	2307	2316	2305	2285	2281	2274	2258	2201	2185	2174	2169	2182
18	2242	2255	2290	2312	2370	2371	2383	2377	2349	2343	2337	2323	2263	2245	2235	2235	2242
19	2313	2318	2352	2379	2438	2441	2456	2444	2413	2409	2412	2390	2329	2306	2300	2295	2313
20	2380	2385	2417	2455	2514	2515	2525	2511	2477	2479	2477	2453	2396	2376	2362	2365	2380
21	2449	2452	2491	2526	2588	2584	2595	2578	2542	2546	2544	2521	2469	2443	2437	2435	2449
22	2517	2527	2566	2595	2650	2650	2663	2646	2615	2611	2612	2589	2540	2513	2507	2502	2517
23	2589	2596	2642	2671	2729	2717	2729	2716	2682	2680	2682	2666	2611	2582	2580	2580	2589
24	2665	2670	2714	2745	2801	2790	2802	2796	2754	2752	2755	2739	2687	2652	2649	2646	2665
25	2745	2743	2785	2824	2874	2863	2881	2867	2825	2825	2834	2810	2761	2724	2720	2719	2745
26	2815	2815	2856	2897	2957	2942	2954	2938	2899	2901	2906	2880	2841	2798	2789	2790	2815
27	2889	2891	2930	2970	3031	3016	3024	3006	2969	2970	2977	2959	2915	2869	2869	2861	2889
28	2961	2962	3012	3046	3104	3084	3088	3083	3037	3038	3048	3032	2990	2942	2941	2937	2961
29	3036	3034	3088	3131	3181	3154	3158	3150	3109	3106	3126	3107	3068	3015	3018	3020	3036



Certificate#4810.01

30	3117	3110	3163	3205	3256	3222	3232	3221	3178	3173	3196	3178	3140	3080	3087	3093	3117
31	3186	3179	3232	3283	3329	3296	3298	3289	3248	3249	3265	3249	3222	3152	3154	3168	3186
32	3258	3245	3300	3358	3408	3363	3363	3353	3322	3314	3332	3313	3293	3214	3230	3239	3258
33	3324	3308	3373	3432	3483	3430	3427	3425	3389	3383	3397	3389	3360	3280	3296	3312	3324
34	3392	3377	3438	3501	3553	3495	3491	3486	3456	3453	3467	3457	3426	3339	3359	3381	3392
35	3460	3443	3527	3575	3621	3559	3549	3549	3517	3515	3536	3520	3493	3399	3420	3440	3460
36	3517	3506	3604	3638	3685	3623	3610	3603	3578	3580	3594	3578	3559	3457	3484	3508	3517
37	3581	3563	3682	3708	3749	3680	3669	3661	3646	3641	3653	3635	3608	3509	3543	3570	3581
38	3641	3621	3747	3768	3816	3740	3722	3718	3705	3696	3715	3703	3661	3562	3595	3628	3641
39	3702	3683	3798	3823	3881	3802	3779	3771	3763	3758	3786	3764	3716	3612	3641	3679	3702
40	3761	3741	3860	3886	3954	3864	3835	3817	3820	3816	3840	3816	3761	3649	3690	3736	3761
41	3819	3793	3916	3947	4011	3921	3890	3868	3876	3861	3883	3861	3806	3685	3730	3782	3819
42	3863	3835	3967	3991	4057	3971	3937	3919	3921	3915	3930	3902	3845	3719	3769	3828	3863
43	3901	3874	4006	4034	4110	4008	3977	3966	3967	3957	3966	3945	3880	3761	3807	3864	3901
44	3939	3910	4044	4074	4156	4051	4016	3998	4007	3993	4003	3978	3909	3792	3842	3900	3939
45	3962	3920	4063	4106	4190	4092	4046	4027	4040	4024	4032	4005	3929	3811	3865	3925	3962
46	3972	3906	4063	4127	4215	4122	4072	4051	4064	4043	4054	4009	3936	3804	3881	3946	3972
47	3947	3893	4035	4121	4222	4138	4095	4057	4068	4033	4046	3997	3912	3790	3875	3939	3947
48	3907	3855	3998	4084	4196	4119	4072	4034	4036	4012	4019	3956	3885	3759	3850	3913	3907
49	3865	3796	3949	4023	4151	4086	4036	3986	3996	3973	3965	3906	3854	3718	3821	3880	3865
50	3803	3724	3882	3971	4085	4029	3975	3935	3943	3904	3903	3845	3795	3665	3779	3826	3803
51	3724	3652	3804	3899	4015	3961	3912	3871	3880	3835	3839	3778	3732	3614	3720	3760	3724
52	3650	3579	3719	3820	3955	3895	3846	3801	3811	3764	3767	3705	3653	3557	3656	3684	3650
53	3576	3494	3632	3737	3873	3817	3769	3702	3731	3684	3689	3619	3571	3482	3583	3609	3576
54	3494	3407	3551	3644	3784	3732	3685	3610	3647	3601	3596	3532	3477	3404	3502	3518	3494
55	3402	3313	3452	3558	3685	3638	3587	3523	3561	3510	3506	3449	3377	3325	3420	3430	3402
56	3315	3218	3350	3455	3588	3543	3498	3436	3467	3426	3415	3348	3284	3219	3316	3335	3315
57	3217	3124	3256	3358	3494	3452	3410	3335	3383	3337	3326	3254	3185	3113	3221	3238	3217
58	3126	3031	3158	3257	3402	3354	3309	3242	3290	3248	3235	3161	3091	3015	3117	3141	3126
59	3030	2942	3056	3153	3304	3261	3199	3144	3194	3155	3126	3063	2997	2914	3017	3045	3030
60	2944	2846	2955	3051	3195	3147	3092	3040	3091	3047	3027	2964	2905	2808	2913	2944	2944
61	2836	2749	2857	2957	3076	3045	2982	2937	2975	2946	2922	2866	2794	2697	2812	2842	2836

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01
Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
Guangzhou, People's Republic of China. info@bellingtest.com

Report Format Number BL-FM-SA-012



Report No.:BLC2008004E-C

Certificate#4810.01

62	2728	2643	2744	2843	2964	2940	2876	2820	2867	2845	2805	2752	2686	2602	2694	2734	2728
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66	2302	2225	2317	2411	2505	2488	2435	2400	2429	2405	2368	2306	2265	2193	2274	2314	2302
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68	2082	2020	2110	2188	2269	2248	2218	2162	2215	2183	2152	2081	2045	1975	2052	2092	2082
69	1977	1908	2004	2065	2148	2128	2105	2064	2097	2074	2042	1970	1937	1871	1946	1980	1977
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72	1642	1586	1669	1730	1801	1797	1766	1725	1759	1740	1703	1644	1612	1569	1624	1656	1642
73	1545	1471	1569	1624	1686	1673	1658	1628	1636	1619	1589	1546	1515	1476	1520	1552	1545
74	1443	1386	1457	1521	1573	1575	1552	1529	1536	1528	1491	1435	1418	1386	1424	1448	1443
75	1346	1291	1361	1422	1472	1488	1456	1428	1447	1450	1414	1344	1327	1286	1335	1359	1346
76	1252	1187	1268	1319	1389	1386	1373	1345	1367	1356	1328	1270	1233	1208	1246	1262	1252
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81	836	799	856	902	923	942	935	907	901	880	859	834	837	795	825	856	836
82	749	715	775	811	833	836	846	830	803	785	767	752	761	732	750	762	749
83	660	624	672	731	737	751	751	736	725	707	690	663	666	657	673	692	660
84	582	546	593	632	648	675	678	646	640	622	602	586	594	586	606	605	582
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86	427	401	431	478	485	494	504	496	490	464	450	437	442	434	458	454	427
87	356	328	356	390	410	434	441	415	403	386	378	368	376	363	374	368	356
88	290	275	293	323	349	362	375	359	338	316	304	303	298	286	297	298	290
89	237	218	246	275	293	303	309	299	292	281	270	257	253	250	267	265	237
90	205	187	203	230	239	258	261	244	232	222	220	217	214	208	214	213	205
91	150	143	155	185	196	208	214	203	182	169	166	161	156	150	164	163	150
92	106	90	113	136	143	154	155	147	143	136	132	117	121	117	129	128	106
93	73	63	72	88	96	109	108	97	88	81	79	75	78	77	78	80	73

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01
Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
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Report Format Number BL-FM-SA-012



Certificate#4810.01

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Certificate#4810.01

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Report No.:BLC2008004E-C

BUG Rating

Lum. Classification System (LCS)

LCS Zone	Lumens	%Lamp	%Lum
FL (0-30)	1032.9	6.8	6.8
FM (30-60)	4131.8	27.4	27.4
FH (60-80)	1912.9	12.7	12.7
FVH(80-90)	290.2	1.9	1.9
BL (0-30)	1062.1	7.0	7.0
BM (30-60)	4235.8	28.0	28.0
BH (60-80)	2004.8	13.3	13.3
BVH(80-90)	310.5	2.1	2.1
UL (90-100)	67.5	0.4	0.4
UH (100-180)	54.4	0.4	0.4
Total	15102.9	100.0	100.0
BUG Rating	B3-U3-G3		

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

Test date	2020-08-06	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AST-CLW08C-120WBCZA1-adPCA4 0K(Tested at 50% CCT Setting)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %	
BLC200800	120.0	60	1.0232	121.93	0.993	8.81	
4E-C1	277.0	60	0.4737	122.67	0.935	13.72	
DLC Pass Criteria						>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method in Lithonia**THD 400S A15 TB:**

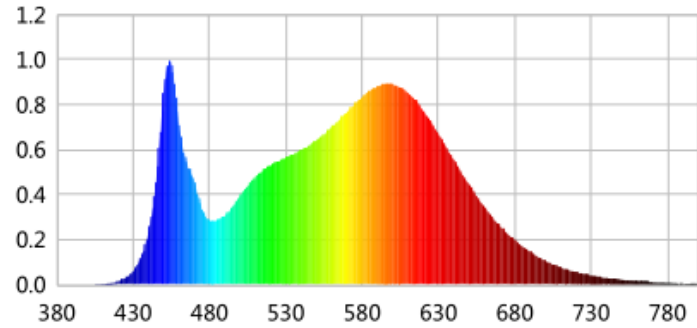
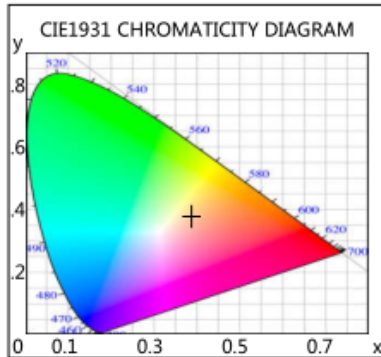
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	83	R9	10
Frequency (Hz)	60	R2	93	R10	83
CCT (K)	3800	R3	95	R11	81
Duv	-0.0020	R4	81	R12	65
Chromaticity (x, y)	x=0.3881 y=0.3771	R5	84	R13	86
Chromaticity (u', v')	u(u')=0.2300 v'=-0.5029	R6	90	R14	98
Color Rendering Index (CRI)	84	R7	83	R15	77
R9	10	R8	62	--	--
Rf	84	--	--	--	--
Rg	94	--	--	--	--
Rcs,h1(%)	-12	--	--	--	--

Photometric Measurement –Sphere-Spectroradiometer Method in Lithonia THD**400S A15 TB:**

Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	16794.6	16525.2	>=10000lm (-10%)
Luminous Efficacy (lm/W)	137.74	134.71	Standard: >= 120(-3%)
Most worst Luminous/Highest Watts	134.71		



Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0006	0.2139	525	0.5498	189.4826	670	0.2628	90.5828
385	0.0004	0.1276	530	0.5639	194.3709	675	0.2279	78.5389
390	0.0004	0.1296	535	0.5790	199.5597	680	0.1974	68.0297
395	0.0005	0.1573	540	0.5991	206.4758	685	0.1708	58.8566
400	0.0008	0.2637	545	0.6178	212.9251	690	0.1462	50.3957
405	0.0014	0.4965	550	0.6412	221.0112	695	0.1250	43.0843
410	0.0029	1.0077	555	0.6680	230.2382	700	0.1072	36.9338
415	0.0069	2.3782	560	0.7003	241.3834	705	0.0916	31.5688
420	0.0148	5.0965	565	0.7336	252.8327	710	0.0775	26.7228
425	0.0305	10.5202	570	0.7680	264.7049	715	0.0668	23.0142
430	0.0615	21.2081	575	0.8046	277.3239	720	0.0572	19.7219
435	0.1208	41.6320	580	0.8360	288.1381	725	0.0483	16.6368
440	0.2290	78.9217	585	0.8601	296.4430	730	0.0407	14.0446
445	0.4599	158.5006	590	0.8815	303.8200	735	0.0345	11.8944
450	0.8497	292.8564	595	0.8925	307.6308	740	0.0295	10.1821
455	0.9819	338.4210	600	0.8917	307.3327	745	0.0255	8.7920
460	0.7135	245.9101	605	0.8775	302.4586	750	0.0222	7.6349
465	0.5440	187.5012	610	0.8541	294.3828	755	0.0191	6.5939
470	0.4524	155.9228	615	0.8194	282.4229	760	0.0159	5.4872
475	0.3399	117.1405	620	0.7747	266.9983	765	0.0147	5.0525
480	0.2861	98.6226	625	0.7251	249.9290	770	0.0118	4.0590
485	0.2886	99.4858	630	0.6699	230.9054	775	0.0092	3.1584
490	0.3071	105.8364	635	0.6127	211.1699	780	0.0084	2.9102
495	0.3449	118.8812	640	0.5557	191.5197	785	0.0064	2.2152
500	0.3921	135.1428	645	0.4977	171.5306	790	0.0075	2.5900
505	0.4382	151.0480	650	0.4441	153.0813	795	0.0060	2.0611
510	0.4788	165.0390	655	0.3927	135.3663	800	0.0042	1.4581
515	0.5071	174.7913	660	0.3459	119.2106			
520	0.5298	182.6032	665	0.3028	104.3583			

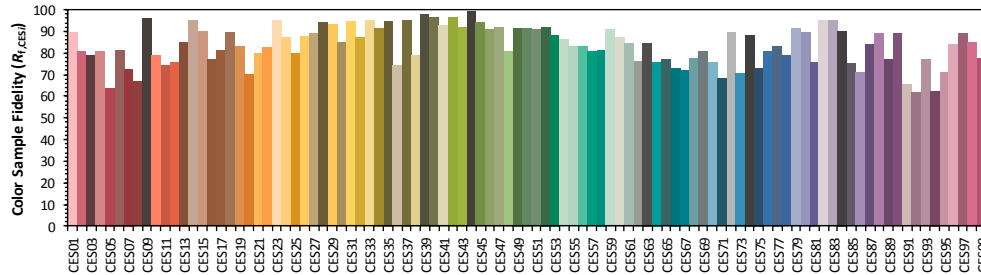
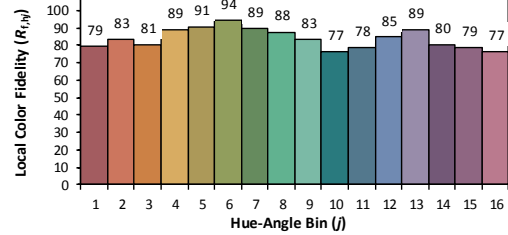
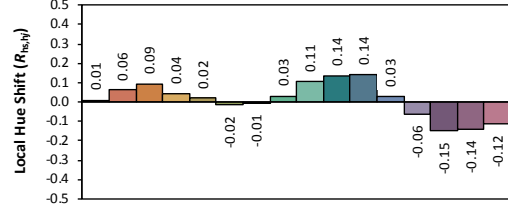
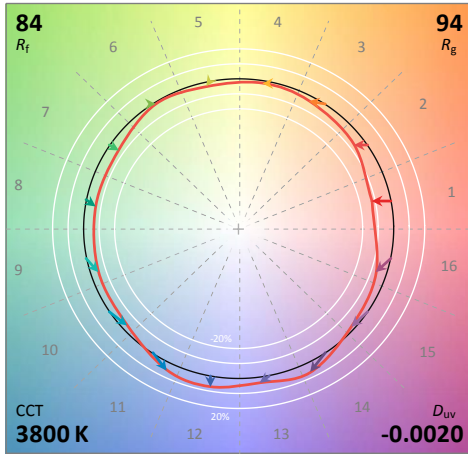
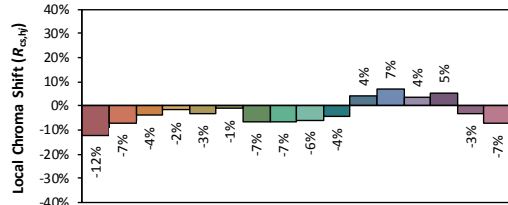
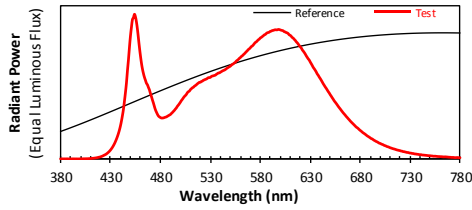


TM30

ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35000H1
Date: 2020/8/6

Manufacturer: AS MART LIGHT CO., LTD
Model: AST-CLW08C-120WBCZA1-ad40K (Tested at 50% CCT Setting)



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

x 0.3881
 y 0.3771
 u' 0.2300
 v' 0.5029

CIE 13.3-1995 (CRI)	
R_a	84
R_g	10

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	2020-08-06	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AST-CLW08C-120WBCZA1-adPCAs5 0K(Tested at 100% CCT Setting)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %	
BLC200800	120.0	60	1.0246	122.09	0.993	8.89	
4E-C1	277.0	60	0.4756	123.06	0.934	13.81	
DLC Pass Criteria						>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method in Lithonia**THD 400S A15 TB:**

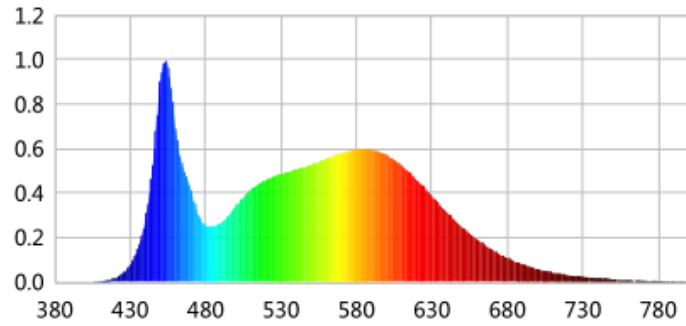
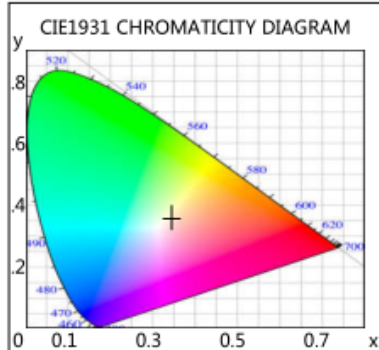
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	-1
Frequency (Hz)	60	R2	90	R10	75
CCT (K)	4984	R3	95	R11	77
Duv	0.0022	R4	79	R12	54
Chromaticity (x, y)	x=0.3460 y=0.3568	R5	80	R13	83
Chromaticity (u', v')	u(u')=0.2100 v'=-0.4873	R6	84	R14	97
Color Rendering Index (CRI)	82	R7	85	R15	74
R9	-1	R8	63	--	--
Rf	82	--	--	--	--
Rg	94	--	--	--	--
Rcs,h1(%)	-14	--	--	--	--

Photometric Measurement –Sphere-Spectroradiometer Method in Lithonia THD**400S A15 TB:**

Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	16432.1	16459.1	>=10000lm (-10%)
Luminous Efficacy (lm/W)	134.59	133.75	Standard: >= 120(-3%)
Most worst Luminous/Highest Watts	133.53		



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	0.0940	525	0.4755	213.2242	670	0.1447	64.8769
385	0.0005	0.2245	530	0.4834	216.7655	675	0.1252	56.1504
390	0.0003	0.1213	535	0.4933	221.2023	680	0.1086	48.6855
395	0.0004	0.2001	540	0.5068	227.2773	685	0.0937	42.0355
400	0.0006	0.2486	545	0.5164	231.5625	690	0.0808	36.2425
405	0.0012	0.5294	550	0.5280	236.7698	695	0.0700	31.3795
410	0.0037	1.6591	555	0.5411	242.6759	700	0.0597	26.7950
415	0.0087	3.9147	560	0.5554	249.0783	705	0.0507	22.7331
420	0.0188	8.4412	565	0.5692	255.2405	710	0.0437	19.6042
425	0.0388	17.3849	570	0.5791	259.6969	715	0.0372	16.6707
430	0.0778	34.8840	575	0.5902	264.6770	720	0.0309	13.8508
435	0.1493	66.9557	580	0.5974	267.8836	725	0.0266	11.9376
440	0.2773	124.3347	585	0.5971	267.7895	730	0.0229	10.2825
445	0.5315	238.3732	590	0.5975	267.9459	735	0.0192	8.5961
450	0.9015	404.2598	595	0.5870	263.2413	740	0.0166	7.4221
455	0.9706	435.2523	600	0.5724	256.6792	745	0.0143	6.3946
460	0.6921	310.3558	605	0.5510	247.1190	750	0.0120	5.3989
465	0.5173	231.9941	610	0.5251	235.4974	755	0.0098	4.3731
470	0.4144	185.8286	615	0.4942	221.6363	760	0.0092	4.1259
475	0.3075	137.8865	620	0.4610	206.7443	765	0.0090	4.0165
480	0.2543	114.0340	625	0.4241	190.1661	770	0.0070	3.1398
485	0.2511	112.5845	630	0.3876	173.8311	775	0.0047	2.0869
490	0.2663	119.4402	635	0.3495	156.7546	780	0.0048	2.1314
495	0.2983	133.7879	640	0.3148	141.1702	785	0.0035	1.5818
500	0.3413	153.0569	645	0.2792	125.1877	790	0.0038	1.6936
505	0.3803	170.5453	650	0.2481	111.2505	795	0.0032	1.4306
510	0.4169	186.9765	655	0.2184	97.9461	800	0.0022	1.0083
515	0.4414	197.9298	660	0.1911	85.6807			
520	0.4601	206.3460	665	0.1673	75.0167			

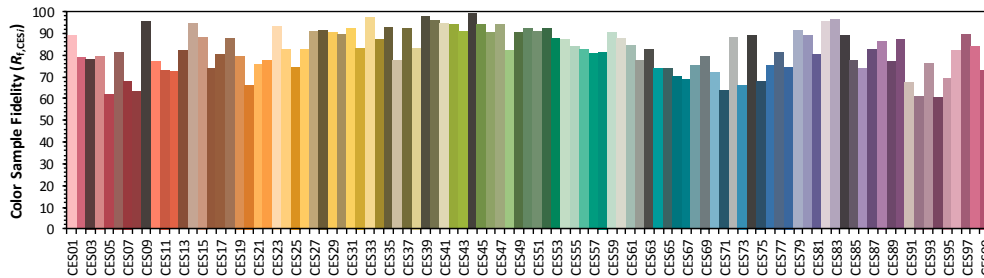
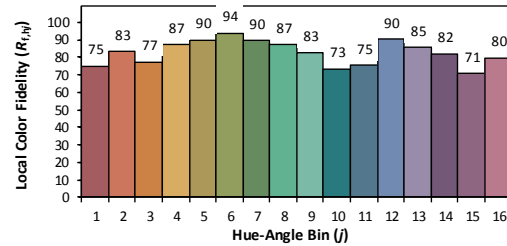
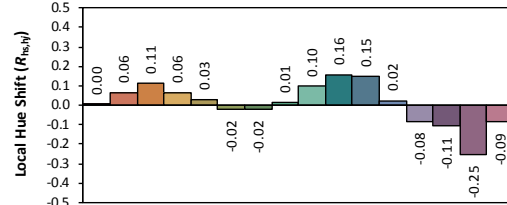
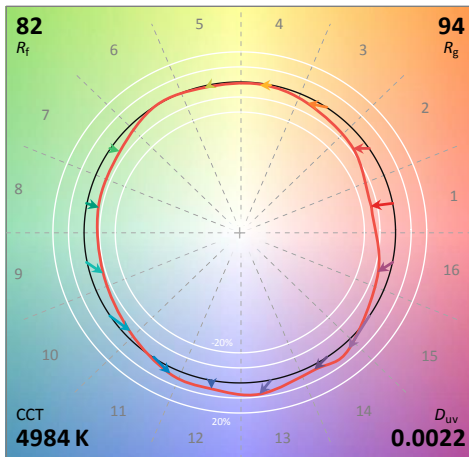
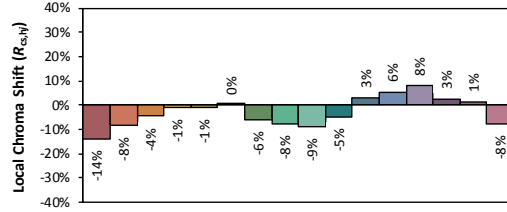
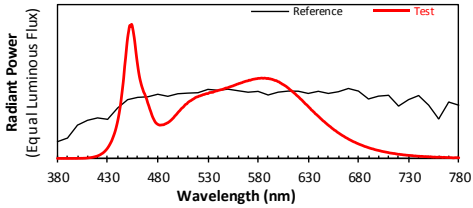


TM30

ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35000H1
Date: 2020/8/6

Manufacturer: AS MART LIGHT CO., LTD
Model: AST-CLW08C-120WBCZA1-ad50K (Tested at 100% CCT Setting)



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

x 0.3460
 y 0.3568
 u' 0.2100
 v' 0.4873

CIE 13.3-1995 (CRI)
 R_a 82
 R_g -1

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.	Next Calibration Date
Goniophotometric System	GPM-3000	DYHXF120001	2021/2/26
AC Power Source	CHP-500C	N/A	2021/3/29
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2021/3/1
Digital Power Meter	WT500	DYDWQ200006	2021/3/29
Integral Sphere (2M)	2M	DYJCE120067	2021/2/26
Digital Power Meter	WT500	DYDWQ200006	2021/3/29
Optical Color and Electrical Measurement System	CMS-3000S	DYJCE120067	2021/2/26

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 *******