



Report No.:  
BLC2008018E-K-CF-PL

## LM-79-08 Test Report

For

# RAB LIGHTING INC.

(Brand Name: RAB LIGHTING)

170 Ludlow Ave. Northvale, NJ, 07647

## Outdoor Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires

Model name(s): WP3XFU120

Remark: N/A

Representative (Tested) Model:  
WP3XFU120(Tested at 0% CCT Setting)  
WP3XFU120(Tested at 50% CCT Setting)  
WP3XFU120(Tested at 100% CCT Setting)

Model Different: N/A

Test & Report By:

*Grace Li*

Engineer: Grace Li

Date: 2021-08-29

Review By:

*Jason Luo*

Manager: Jason Luo

The data in this report refer to report No.BLC2008018E-K, the construction and performance of the products are the same, just different in with or without power regulator to achieve wattage adjustable or not.



Report No.:  
BLC2008018E-K-CF-PL

### 1.1 Product Information:

Organization Name	RAB LIGHTING INC.	
Brand Name	RAB LIGHTING	
Model Number	WP3XFU120	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires	
Rated Voltage / Frequency	120-277Vac, 50/60 Hz	
Nominal Power	0 to 120W(Wattage adjustable by power regulator) P.S: when the wattage be adjusted to 0W, means turn off the light.	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K,4000K,5000K(Color tunable)	
LED Manufacturer	Lumileds Holding B.V.	
LED Model	L128-XX80RA35003H1 L128-XX80RA35000H1	
Sample Number	BLC2008018E-K1	
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 20, 2020
Date of Test	Aug 21, 2020
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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ , 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  $1^{\circ}$  vertical intervals and  $22.5^{\circ}$  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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . 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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . 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.



Certificate#4810.01

Report No.:  
BLC2008018E-K-CF-PL**2.1 Electrical, Photometric and Chromaticity Measurements***(Refer to Work Instruction BL-QP-033)*

<b>Test date</b>	2020-08-21	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	WP3XFU120(Tested at 0% CCT Setting)		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200801	120.0	60	1.0418	124.26	0.994	8.85
8E-K1	277.0	60	0.4848	126.09	0.939	10.04
<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	79	R9	-3
Frequency (Hz)	60	R2	90	R10	78
CCT (K)	2958	R3	95	R11	79
Duv	-0.0020	R4	79	R12	74
Chromaticity (x, y)	x=0.4370 y=0.3991	R5	80	R13	81
Chromaticity (u', v')	u(u')=0.2528 v'=0.5194	R6	89	R14	98
Color Rendering Index (CRI)	81	R7	79	R15	71
R9	-3	R8	54	--	--
Rf	83	--	--	--	--
Rg	97	--	--	--	--
Rcs,h1 (%)	-12	--	--	--	--

**Photometric Measurement – Goniophotometer Method:**

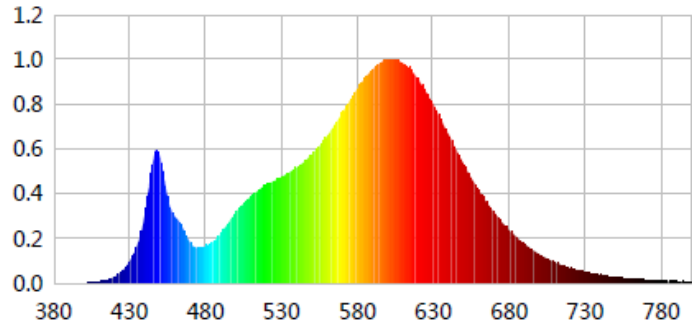
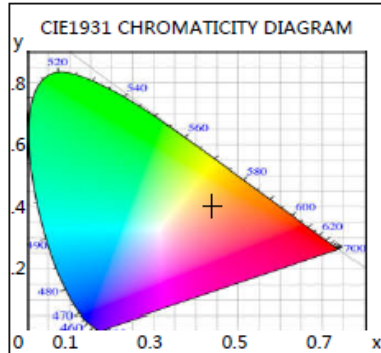
Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	17697.6	17953.4	$\geq 10000(-10\%)$
0-90 °Total Luminous (lm)	15513.5	15733.5	
Luminous Efficacy (lm/W)	142.42	142.39	Premium: $\geq 120(-3\%)$
0-90 °Luminous Efficacy (lm/W)	124.85	124.78	
Most worst Luminous/Highest	140.36		
Zonal lumens in the 80-90 °0-90 °zone (%)	11.04		$\leq 10(+3)$
Beam Angle (°)	96.1	--	--
Center Beam Candle Power (cd)	3752	--	--

**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. engineer@etk-utest.com**

Report Format Number BL-FM-SA-012



**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	0.0910	525	0.4545	169.0799	670	0.3147	117.0692
385	0.0003	0.1142	530	0.4722	175.6842	675	0.2717	101.0851
390	0.0003	0.1099	535	0.4906	182.5110	680	0.2357	87.6890
395	0.0009	0.3320	540	0.5152	191.6949	685	0.2018	75.0968
400	0.0005	0.2021	545	0.5405	201.0833	690	0.1736	64.5734
405	0.0022	0.8081	550	0.5729	213.1425	695	0.1489	55.3950
410	0.0053	1.9555	555	0.6103	227.0485	700	0.1263	46.9869
415	0.0123	4.5712	560	0.6567	244.3245	705	0.1078	40.1132
420	0.0258	9.5886	565	0.7059	262.6198	710	0.0917	34.1019
425	0.0503	18.7050	570	0.7573	281.7506	715	0.0786	29.2472
430	0.0928	34.5335	575	0.8135	302.6561	720	0.0658	24.4749
435	0.1627	60.5237	580	0.8678	322.8599	725	0.0554	20.5933
440	0.2983	110.9881	585	0.9131	339.7226	730	0.0474	17.6195
445	0.5243	195.0544	590	0.9544	355.0741	735	0.0402	14.9625
450	0.5727	213.0568	595	0.9823	365.4649	740	0.0352	13.1030
455	0.3824	142.2889	600	0.9979	371.2749	745	0.0292	10.8797
460	0.2960	110.1440	605	0.9963	370.6721	750	0.0247	9.1819
465	0.2465	91.6995	610	0.9832	365.7850	755	0.0210	7.8050
470	0.1778	66.1461	615	0.9546	355.1521	760	0.0181	6.7409
475	0.1551	57.6996	620	0.9107	338.8378	765	0.0142	5.2945
480	0.1640	61.0243	625	0.8567	318.7396	770	0.0125	4.6341
485	0.1838	68.3851	630	0.7970	296.5301	775	0.0094	3.4993
490	0.2186	81.3178	635	0.7315	272.1615	780	0.0092	3.4170
495	0.2664	99.1301	640	0.6645	247.2179	785	0.0068	2.5471
500	0.3128	116.3933	645	0.5956	221.5938	790	0.0070	2.6204
505	0.3524	131.1153	650	0.5313	197.6832	795	0.0062	2.3240
510	0.3883	144.4646	655	0.4690	174.5034	800	0.0027	1.0105
515	0.4145	154.2206	660	0.4125	153.4749			
520	0.4354	161.9891	665	0.3620	134.6976			



# TM30

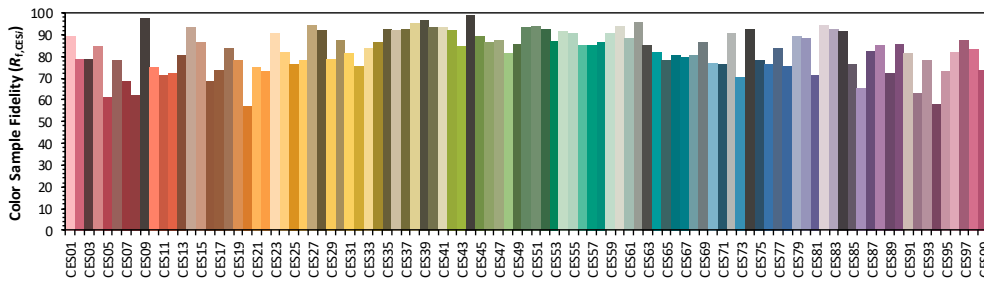
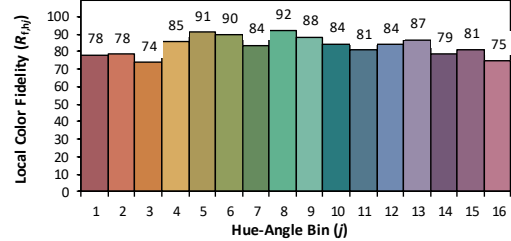
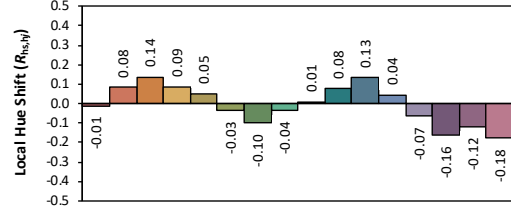
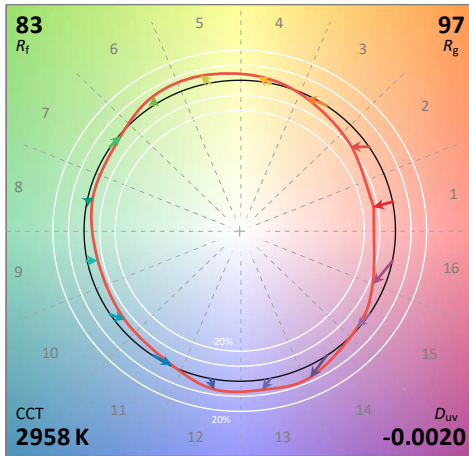
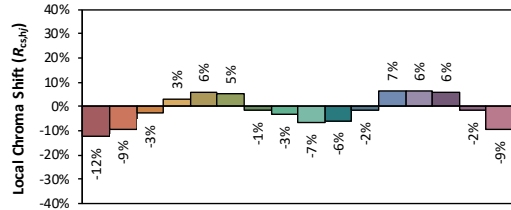
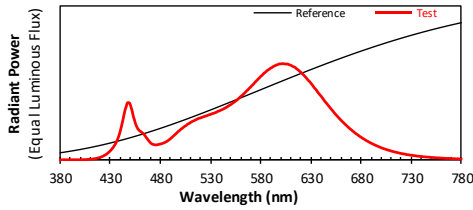
## ANSI/IES TM-30-18 Color Rendition Report

**Source:** L128-XX80RA35003H1  
L128-XX80RA35000H1

**Date:** 2020/8/21

**Manufacturer:** RAB LIGHTING INC.

**Model:** WP3XFU120 (Tested at 0% CCT Setting)



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

$x$  0.4370  
 $y$  0.3991  
 $u'$  0.2528  
 $v'$  0.5194

CIE 13.3-1995 (CRI)  
 $R_a$  81  
 $R_g$  -3

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



Report No.:  
BLC2008018E-K-CF-PL

## Zonal Lumen Tabulation

### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	2,714.1	15.3%	15.3%
0-40	4,619.7	26.1%	26.1%
0-60	9,263.6	52.3%	52.3%
60-90	6,249.9	35.3%	35.3%
70-100	4,892.4	27.6%	27.6%
90-120	1,857.4	10.5%	10.5%
0-90	15,513.5	87.7%	87.7%
90-180	2,184.3	12.3%	12.3%
0-180	17,697.7	100%	100%

### Lumens Per Zone

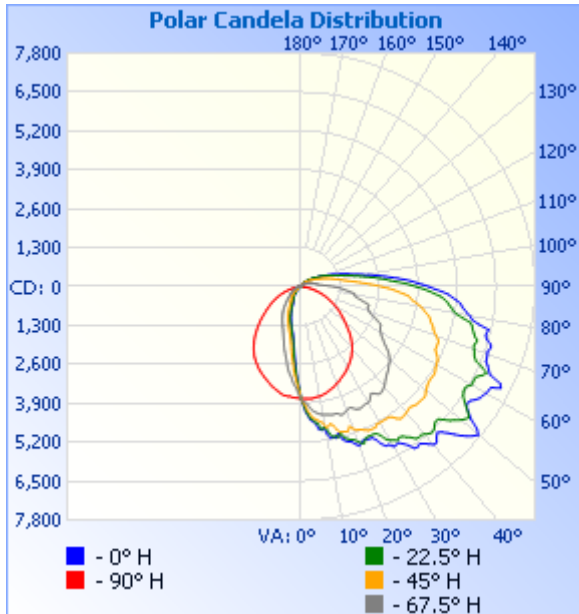
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	335.6	1.9%	90-100	1,015.7	5.7%
10-20	935.0	5.3%	100-110	537.6	3%
20-30	1,443.6	8.2%	110-120	304.1	1.7%
30-40	1,905.6	10.8%	120-130	167.2	0.9%
40-50	2,249.7	12.7%	130-140	88.2	0.5%
50-60	2,394.1	13.5%	140-150	42.2	0.2%
60-70	2,373.2	13.4%	150-160	18.8	0.1%
70-80	2,163.5	12.2%	160-170	8.0	0%
80-90	1,713.1	9.7%	170-180	2.4	0%



Certificate#4810.01

Report No.:  
BLC2008018E-K-CF-PL

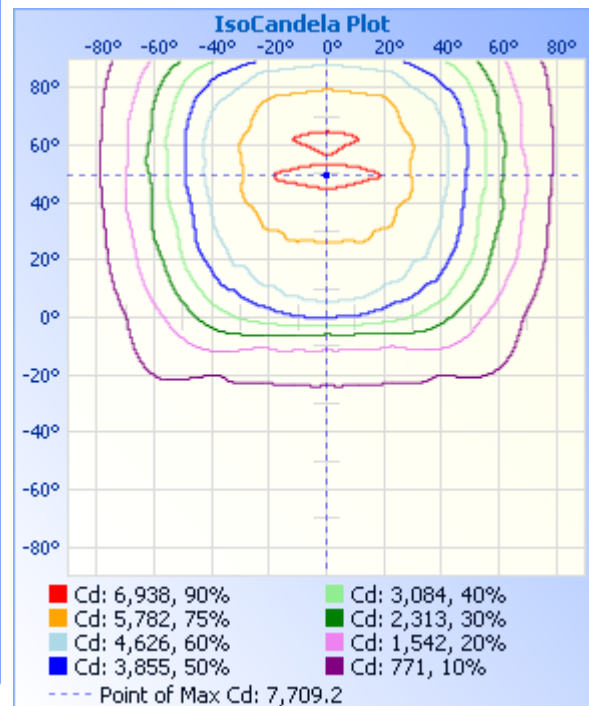
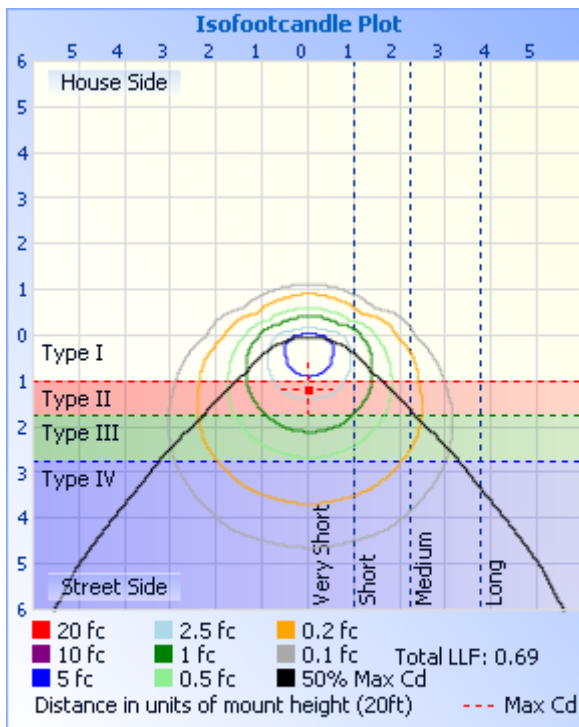
**Photometric Data**



**Illuminance at a Distance**

	Center Beam fc	Beam Width	
17.0ft	13.0 fc	34.9 ft	38.9 ft
34.0ft	3.25 fc	69.7 ft	77.8 ft
51.0ft	1.44 fc	104.6 ft	116.7 ft
68.0ft	0.81 fc	139.5 ft	155.5 ft
85.0ft	0.52 fc	174.3 ft	194.4 ft
102.0ft	0.36 fc	209.2 ft	233.3 ft

■ Vert. Spread: 91.4°  
■ Horiz. Spread: 97.7°



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. engineer@etk-utest.com

Report Format Number BL-FM-SA-012



**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	3752	3752	3752	3752	3752	3752	3752	3752	3752	3752	3752	3752	3752	3752	3752	3752	3752
1	3940	3915	3883	3838	3748	3639	3483	3418	3416	3440	3491	3637	3729	3827	3891	3918	3940
2	4167	4108	3991	3868	3746	3492	3312	3209	3184	3233	3314	3499	3728	3891	3982	4102	4167
3	4320	4273	4167	3941	3754	3393	3133	2986	2950	2991	3134	3358	3715	3929	4170	4263	4320
4	4462	4409	4270	4042	3755	3301	2973	2747	2636	2758	2964	3291	3714	4006	4269	4416	4462
5	4518	4458	4393	4140	3762	3222	2803	2507	2409	2517	2803	3197	3702	4109	4395	4483	4518
6	4596	4569	4446	4196	3751	3114	2602	2307	2185	2313	2591	3059	3679	4175	4475	4592	4596
7	4785	4607	4500	4242	3740	3017	2441	2083	1972	2098	2422	2978	3694	4219	4498	4596	4785
8	4845	4814	4553	4295	3722	2914	2287	1902	1819	1894	2262	2888	3673	4266	4579	4824	4845
9	4777	4776	4609	4325	3716	2815	2120	1775	1695	1775	2104	2792	3679	4332	4584	4812	4777
10	4988	4808	4775	4342	3711	2707	1964	1671	1610	1665	1950	2671	3653	4411	4757	4786	4988
11	5158	5015	4761	4357	3690	2584	1848	1602	1534	1599	1832	2531	3626	4419	4815	4976	5158
12	5133	5137	4682	4371	3670	2475	1745	1520	1459	1518	1741	2430	3587	4410	4776	5162	5133
13	5193	5116	4758	4397	3653	2393	1646	1455	1396	1451	1647	2332	3561	4401	4756	5121	5193
14	5058	5183	4924	4409	3623	2296	1587	1392	1333	1386	1589	2244	3534	4446	4876	5182	5058
15	5256	5052	5030	4396	3597	2222	1527	1333	1264	1323	1521	2158	3492	4473	5008	5068	5256
16	5356	5247	5037	4409	3570	2128	1459	1266	1217	1263	1463	2067	3475	4436	5102	5182	5356
17	5423	5320	5064	4478	3547	2041	1406	1225	1158	1214	1406	1965	3442	4416	5054	5341	5423
18	5450	5382	5078	4492	3523	1959	1360	1165	1102	1164	1353	1881	3398	4444	5074	5383	5450
19	5567	5409	4942	4456	3486	1879	1304	1108	1045	1107	1304	1799	3365	4485	5036	5436	5567
20	5655	5499	5041	4423	3446	1798	1255	1054	991	1052	1253	1730	3330	4493	4957	5503	5655
21	5599	5597	5139	4374	3427	1727	1199	999	917	1000	1201	1669	3291	4465	5069	5600	5599
22	5536	5631	5148	4355	3394	1665	1155	940	846	935	1159	1608	3268	4411	5164	5654	5536
23	5524	5505	5194	4410	3353	1603	1114	873	785	872	1115	1550	3228	4359	5179	5548	5524
24	5575	5479	5242	4483	3323	1546	1071	812	722	813	1068	1502	3196	4369	5228	5506	5575
25	5569	5494	5305	4502	3289	1492	1015	756	667	754	1018	1456	3160	4414	5233	5541	5569
26	5679	5491	5314	4526	3258	1434	967	706	623	698	965	1412	3127	4434	5273	5563	5679
27	5895	5505	5314	4502	3224	1384	922	656	592	657	926	1371	3089	4476	5252	5571	5895
28	6031	5620	5308	4477	3187	1344	871	624	574	617	876	1332	3052	4515	5254	5635	6031
29	6035	5827	5238	4468	3149	1304	824	591	556	589	818	1294	3005	4518	5260	5802	6035



Report No.:  
BLC2008018E-K-CF-PL

Certificate#4810.01

30	6169	5931	5246	4470	3105	1267	773	573	534	565	773	1259	2960	4506	5209	5982	6169
31	6164	5976	5244	4441	3073	1224	731	551	513	546	729	1218	2925	4467	5224	5983	6164
32	6150	6063	5250	4351	3026	1183	685	528	489	524	693	1184	2880	4425	5251	6063	6150
33	6263	6002	5252	4274	2988	1147	650	511	467	506	651	1140	2838	4402	5249	6077	6263
34	6389	6033	5248	4293	2949	1111	614	486	446	485	623	1107	2791	4358	5225	6025	6389
35	6595	6137	5321	4372	2903	1072	582	464	428	461	593	1069	2736	4285	5236	6100	6595
36	6616	6223	5447	4431	2861	1027	563	446	413	439	576	1029	2679	4262	5301	6161	6616
37	6575	6356	5523	4431	2802	985	538	426	388	422	551	992	2629	4280	5424	6291	6575
38	6646	6383	5517	4407	2752	947	513	404	367	403	531	949	2572	4318	5509	6395	6646
39	6770	6370	5501	4371	2703	907	499	388	353	385	508	908	2510	4351	5494	6374	6770
40	6886	6428	5479	4326	2652	864	476	367	335	367	493	867	2447	4338	5448	6386	6886
41	6901	6514	5442	4260	2588	824	465	346	323	349	472	828	2390	4302	5414	6442	6901
42	6752	6543	5421	4206	2522	778	448	333	309	328	456	790	2321	4228	5365	6507	6752
43	6660	6508	5458	4152	2460	736	428	314	289	316	436	747	2253	4164	5332	6497	6660
44	6758	6404	5497	4105	2392	704	410	301	279	298	420	714	2185	4109	5335	6438	6758
45	6912	6350	5509	4064	2326	662	389	282	259	281	395	676	2115	4045	5364	6392	6912
46	7104	6372	5507	4033	2254	625	374	272	247	265	380	642	2048	3990	5400	6388	7104
47	7303	6521	5515	3983	2182	595	353	252	225	251	364	608	1985	3934	5410	6474	7303
48	7456	6682	5532	3934	2099	561	336	238	211	236	342	575	1915	3886	5433	6589	7456
49	7598	6792	5496	3901	2022	533	318	221	198	222	327	544	1842	3832	5438	6717	7598
50	7709	6927	5427	3858	1956	501	305	208	182	208	311	521	1776	3772	5410	6843	7709
51	7554	7033	5393	3799	1890	479	288	196	171	194	293	498	1717	3712	5362	6944	7554
52	7193	7103	5347	3723	1824	457	274	181	162	181	282	479	1642	3670	5288	7018	7193
53	6997	6965	5321	3648	1764	438	261	170	153	168	266	457	1575	3612	5242	6998	6997
54	6825	6792	5305	3550	1696	422	245	160	151	161	251	442	1510	3552	5179	6877	6825
55	6773	6650	5306	3437	1638	409	230	147	147	146	237	431	1450	3485	5171	6736	6773
56	6813	6520	5319	3339	1577	393	213	141	132	138	223	412	1394	3387	5197	6605	6813
57	6930	6458	5313	3261	1518	381	204	127	126	131	205	398	1334	3262	5204	6494	6930
58	7031	6424	5279	3186	1459	369	194	121	118	119	195	380	1277	3161	5194	6428	7031
59	7062	6461	5233	3116	1400	359	181	112	109	112	187	370	1224	3068	5165	6384	7062
60	7124	6565	5215	3070	1344	342	171	104	96	105	174	354	1170	2971	5134	6451	7124
61	7151	6563	5191	3024	1278	331	158	96	85	95	160	339	1122	2890	5119	6487	7151

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. engineer@etk-utest.com

Report Format Number BL-FM-SA-012



Report No.:  
BLC2008018E-K-CF-PL

Certificate#4810.01

62	7179	6548	5158	2986	1218	315	150	90	78	90	151	325	1070	2812	5096	6492	7179
63	7477	6600	5094	2957	1158	303	139	77	71	79	138	311	1020	2754	5013	6509	7477
64	7392	6743	5005	2963	1099	290	127	69	68	73	132	300	968	2712	4929	6600	7392
65	6949	6820	4937	2901	1043	280	119	58	50	59	116	289	915	2693	4843	6771	6949
66	6851	6592	4946	2783	982	266	108	51	43	53	104	274	867	2697	4761	6661	6851
67	6762	6336	4934	2681	927	250	98	33	24	42	98	261	822	2685	4753	6408	6762
68	6649	6233	4941	2572	877	239	86	37	22	35	91	249	770	2557	4726	6227	6649
69	6636	6194	4882	2479	821	231	80	23	23	21	81	241	724	2435	4726	6166	6636
70	6610	6140	4798	2418	768	221	78	22	25	25	75	227	673	2352	4690	6100	6610
71	6588	6094	4705	2379	716	211	69	24	23	26	67	218	622	2298	4597	6043	6588
72	6653	6114	4641	2338	658	200	59	25	26	18	63	210	577	2251	4517	6042	6653
73	6620	6145	4607	2320	607	187	55	18	23	26	51	199	536	2217	4484	6073	6620
74	6453	6029	4544	2348	550	182	52	27	21	24	52	188	491	2150	4438	5993	6453
75	6374	5966	4469	2326	506	175	49	19	25	24	52	178	447	2118	4349	5882	6374
76	6370	5895	4436	2215	462	161	46	25	17	29	52	173	402	2145	4242	5849	6370
77	6428	5858	4376	2094	413	156	44	21	26	24	50	168	368	2074	4206	5824	6428
78	6068	5776	4272	1994	370	149	40	24	23	27	44	157	331	1881	4158	5802	6068
79	5816	5497	4179	1891	329	139	44	24	28	26	48	145	295	1729	4073	5550	5816
80	5736	5259	4094	1832	290	132	46	22	24	26	49	144	262	1652	3992	5306	5736
81	5607	5141	3994	1804	257	130	42	27	24	29	49	138	236	1637	3889	5153	5607
82	5497	5059	3874	1811	225	124	41	25	23	28	45	129	209	1621	3759	5023	5497
83	5405	4976	3747	1747	200	120	40	26	28	17	42	123	186	1618	3652	4957	5405
84	5341	4898	3661	1637	175	116	34	27	28	28	45	120	170	1601	3538	4878	5341
85	5201	4795	3597	1545	150	112	41	29	28	27	41	115	155	1467	3469	4769	5201
86	5047	4674	3434	1459	137	106	43	24	29	27	41	115	135	1382	3350	4658	5047
87	4919	4457	3248	1391	124	108	37	25	30	28	42	110	121	1311	3207	4464	4919
88	4709	4275	3090	1308	111	98	41	26	27	28	40	108	101	1243	3079	4291	4709
89	4454	4089	2915	1200	98	97	35	19	27	29	43	106	94	1178	2972	4161	4454
90	4276	3855	2698	1084	89	95	40	25	21	27	41	101	89	1073	2792	3896	4276
91	4066	3631	2506	981	87	85	38	30	29	23	43	95	84	960	2627	3698	4066
92	3846	3448	2322	886	83	88	38	27	24	25	41	91	80	862	2464	3532	3846
93	3682	3190	2158	801	81	84	31	22	27	23	41	89	82	776	2315	3283	3682

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. engineer@etk-utest.com

Report Format Number BL-FM-SA-012



Report No.:  
BLC2008018E-K-CF-PL

Certificate#4810.01

94	3453	2988	1986	724	79	80	37	25	27	28	38	86	84	695	2147	3065	3453
95	3228	2827	1845	668	80	74	36	26	27	31	41	82	86	632	2014	2898	3228
96	3024	2646	1721	621	90	74	30	32	28	29	38	78	86	578	1878	2739	3024
97	2822	2482	1600	584	82	72	29	20	32	28	37	81	86	543	1736	2587	2822
98	2641	2308	1499	554	90	69	34	23	31	28	39	75	88	514	1606	2403	2641
99	2458	2150	1416	536	94	70	31	25	28	29	31	69	90	490	1486	2230	2458
100	2295	2012	1346	515	98	65	30	26	30	31	32	72	97	472	1382	2081	2295
101	2120	1897	1277	495	102	62	31	21	32	28	39	60	100	456	1287	1962	2120
102	1976	1776	1207	481	98	67	28	31	30	35	41	61	102	441	1202	1823	1976
103	1853	1659	1154	468	105	60	32	31	31	30	28	64	104	429	1126	1697	1853
104	1728	1549	1099	454	105	58	31	29	33	31	38	57	103	417	1062	1594	1728
105	1634	1460	1060	435	103	52	25	31	34	32	30	60	106	406	1006	1482	1634
106	1558	1383	998	425	111	53	32	29	32	33	36	53	110	392	945	1398	1558
107	1468	1314	946	409	110	53	29	29	31	33	35	53	109	382	899	1313	1468
108	1380	1249	900	397	114	42	32	25	29	28	32	56	108	374	850	1244	1380
109	1272	1182	856	382	115	54	22	30	34	18	33	55	101	359	799	1173	1272
110	1211	1101	814	371	114	46	34	31	29	33	30	54	110	346	760	1101	1211
111	1154	1051	771	354	117	45	29	30	26	31	35	54	106	332	724	1039	1154
112	1092	995	733	344	115	42	30	30	31	28	35	52	106	320	683	984	1092
113	1020	938	694	326	113	44	30	28	31	31	37	54	101	308	647	933	1020
114	961	901	655	316	108	41	28	19	30	35	37	44	100	292	612	901	961
115	895	868	622	302	106	41	31	31	31	26	36	46	99	279	583	861	895
116	842	817	587	286	97	38	29	28	31	30	37	35	96	267	555	823	842
117	793	778	553	279	93	40	30	30	19	32	33	47	86	257	521	781	793
118	739	735	525	264	90	42	28	27	27	26	27	46	86	242	495	737	739
119	703	700	500	254	88	39	31	25	25	30	37	48	84	235	470	696	703
120	665	660	480	244	81	34	30	31	31	34	32	46	79	227	447	653	665
121	624	618	453	235	75	34	30	28	30	27	29	46	74	220	429	623	624
122	580	584	433	227	72	35	25	27	30	30	39	43	71	210	410	579	580
123	548	550	416	212	67	37	25	23	30	30	33	45	69	200	389	547	548
124	520	524	394	207	64	28	24	30	30	29	34	41	68	194	373	521	520
125	483	497	372	201	62	36	27	31	32	24	34	45	70	186	353	490	483

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. engineer@etk-utest.com

Report Format Number BL-FM-SA-012



Report No.:  
BLC2008018E-K-CF-PL

Certificate#4810.01

126	455	476	351	191	57	27	26	30	31	30	26	40	62	176	334	462	455
127	430	451	334	182	58	29	26	32	30	32	32	42	62	166	315	443	430
128	409	432	321	173	54	32	28	24	34	29	34	45	60	159	301	418	409
129	391	408	305	169	57	23	27	22	33	29	32	44	59	150	286	392	391
130	371	383	288	159	52	35	27	29	28	30	33	35	54	143	270	372	371
131	358	362	273	152	49	29	23	30	29	29	33	28	55	134	260	345	358
132	333	341	260	145	42	33	21	32	28	33	31	37	55	128	245	325	333
133	315	326	243	139	49	29	21	27	33	34	30	43	52	117	229	301	315
134	292	304	230	128	46	24	26	29	33	32	29	36	48	111	219	285	292
135	278	282	219	126	37	30	25	30	32	32	33	39	47	104	209	270	278
136	261	266	204	120	43	30	27	32	28	35	33	38	44	100	195	251	261
137	256	250	194	109	33	21	28	20	32	32	33	35	46	95	187	237	256
138	237	232	188	109	40	25	30	30	30	34	34	31	46	90	176	220	237
139	224	221	176	103	37	19	26	27	30	28	33	35	43	86	166	201	224
140	211	206	166	99	37	21	26	33	31	23	28	35	39	81	155	197	211
141	196	194	156	90	37	21	28	29	32	33	33	31	41	77	145	178	196
142	185	174	148	83	32	18	31	32	28	26	30	21	35	74	136	167	185
143	173	164	138	80	30	20	30	29	31	29	34	34	24	72	127	156	173
144	160	151	125	79	31	21	28	28	30	33	36	28	40	66	119	140	160
145	145	139	121	74	31	13	27	27	36	34	31	29	32	62	112	126	145
146	137	129	110	72	29	17	28	23	27	26	34	35	32	59	104	120	137
147	130	119	103	68	22	21	29	33	35	33	30	30	34	57	95	112	130
148	117	116	92	63	23	16	26	32	34	35	24	31	35	54	87	104	117
149	108	104	88	62	21	21	28	35	36	20	33	36	31	49	80	98	108
150	102	90	78	59	24	17	25	29	31	35	36	36	21	47	75	87	102
151	94	87	73	59	21	23	29	29	29	30	29	31	31	50	73	84	94
152	87	80	66	54	19	26	28	32	28	32	32	30	31	45	69	77	87
153	82	77	60	54	20	24	28	33	37	35	31	33	29	44	58	74	82
154	65	68	60	51	20	22	23	26	33	23	32	32	28	39	55	71	65
155	70	64	55	43	18	27	26	30	33	32	33	31	23	39	56	67	70
156	64	57	55	43	17	23	28	32	30	32	34	32	23	36	46	58	64
157	57	56	45	40	20	21	22	24	32	30	29	30	25	36	42	51	57

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. engineer@etk-utest.com

Report Format Number BL-FM-SA-012



Report No.:  
BLC2008018E-K-CF-PL

Certificate#4810.01

158	49	49	49	42	17	20	29	31	24	34	32	30	27	33	38	54	49
159	48	42	43	40	15	21	27	30	29	31	28	32	25	29	37	38	48
160	42	41	42	36	16	22	25	25	33	30	34	32	18	29	38	40	42
161	40	35	37	30	14	16	28	27	30	34	36	34	17	26	34	36	40
162	35	29	38	34	22	17	30	33	31	33	30	31	24	22	23	31	35
163	35	38	33	34	14	18	29	33	31	27	36	31	19	26	30	30	35
164	34	33	30	30	17	19	23	32	29	28	32	31	18	25	30	32	34
165	33	34	32	27	17	25	28	29	32	31	31	35	20	27	28	31	33
166	21	33	30	26	17	23	33	32	30	34	34	35	22	22	30	29	21
167	30	27	31	30	12	18	30	30	22	24	36	31	22	25	30	27	30
168	26	27	29	30	12	18	31	31	30	25	30	31	18	22	24	29	26
169	25	23	30	31	15	21	22	26	31	20	26	33	18	25	28	26	25
170	22	24	32	26	18	25	19	29	26	31	32	32	20	22	18	28	22
171	15	31	24	28	15	20	28	27	31	28	34	24	19	26	28	18	15
172	24	29	27	34	17	20	26	27	28	21	33	23	16	23	21	25	24
173	29	28	26	31	20	22	28	29	32	31	28	28	23	24	25	25	29
174	30	29	29	30	14	17	30	26	22	31	32	30	21	26	25	26	30
175	23	29	31	27	18	21	30	28	32	26	34	33	25	23	27	26	23
176	29	26	30	26	16	23	24	26	30	24	30	26	21	25	24	27	29
177	29	30	29	28	16	23	30	30	27	28	22	30	16	27	21	27	29
178	19	27	29	28	14	23	28	27	31	20	31	32	18	22	23	25	19
179	23	23	28	28	11	20	23	26	30	16	25	30	23	26	26	30	23
180	22	30	29	32	15	14	20	20	29	22	30	29	14	20	21	29	22



Report No.:  
BLC2008018E-K-CF-PL

## BUG

### Lum. Classification System (LCS)

<u>LCS Zone</u>	<u>Lumens</u>	<u>%Lamp</u>	<u>%Lum</u>
FL (0-30)	2026.4	11.5	11.5
FM (30-60)	5823.6	32.9	32.9
FH (60-80)	4347.9	24.6	24.6
FVH (80-90)	1675.0	9.5	9.5
BL (0-30)	687.8	3.9	3.9
BM (30-60)	727.0	4.1	4.1
BH (60-80)	188.3	1.1	1.1
BVH(80-90)	37.8	0.2	0.2
UL (90-100)	1015.5	5.7	5.7
UH (100-180)	1168.3	6.6	6.6
Total	17697.6	100.1	100.0
<b>BUG Rating</b>	<b>B2-U5-G5</b>		



Certificate#4810.01

Report No.:  
BLC2008018E-K-CF-PL

## 2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

<b>Test date</b>	2020-08-21	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	WP3XFU120(Tested at 50% CCT Setting)		

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200801	120.0	60	1.0368	123.54	0.993	8.69
8E-K1	277.0	60	0.4809	125.36	0.941	9.97
<b>DLC Pass Criteria</b>					>= 0.9(-3%)	<= 20(+5)

### Chromaticity Measurement - Sphere-Spectroradiometer Method:

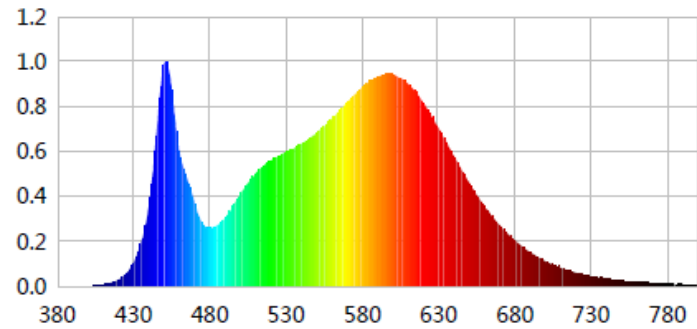
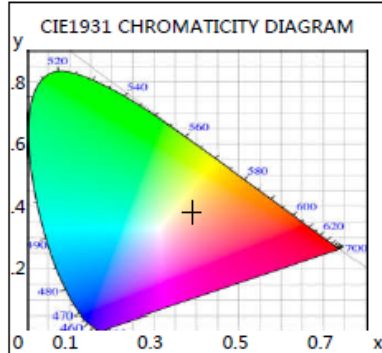
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	82	R9	6
Frequency (Hz)	60	R2	91	R10	78
CCT (K)	3761	R3	96	R11	81
Duv	-0.0022	R4	81	R12	65
Chromaticity (x, y)	x=0.3897 y=0.3774	R5	82	R13	84
Chromaticity (u', v')	u(u')=0.2309 v'=0.5033	R6	88	R14	98
Color Rendering Index (CRI)	83	R7	83	R15	75
R9	6	R8	61	--	--
Rf	84	--	--	--	--
Rg	96	--	--	--	--
Rcs,h1(%)	-12	--	--	--	--

### 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)	18629.8	18899.1	>=10000(-10%)
Luminous Efficacy (lm/W)	150.80	150.76	Premium: >= 120(-3%)
Most worst Luminous/Highest Watts	148.61		



**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	0.1015	525	0.5779	209.9816	670	0.2705	98.2666
385	0.0004	0.1562	530	0.5938	215.7294	675	0.2327	84.5405
390	0.0010	0.3475	535	0.6102	221.7099	680	0.2024	73.5248
395	0.0006	0.2250	540	0.6322	229.6844	685	0.1735	63.0540
400	0.0011	0.3945	545	0.6536	237.4855	690	0.1492	54.2266
405	0.0023	0.8467	550	0.6801	247.1105	695	0.1278	46.4259
410	0.0052	1.8832	555	0.7090	257.5977	700	0.1090	39.6137
415	0.0125	4.5584	560	0.7442	270.3895	705	0.0943	34.2465
420	0.0267	9.6889	565	0.7807	283.6368	710	0.0795	28.8941
425	0.0526	19.0940	570	0.8162	296.5484	715	0.0688	25.0008
430	0.1019	37.0238	575	0.8527	309.8107	720	0.0581	21.1154
435	0.1897	68.9253	580	0.8862	321.9737	725	0.0496	18.0334
440	0.3497	127.0676	585	0.9101	330.6644	730	0.0418	15.1793
445	0.6716	244.0231	590	0.9320	338.6154	735	0.0352	12.7793
450	0.9870	358.6023	595	0.9417	342.1406	740	0.0302	10.9619
455	0.8769	318.6172	600	0.9413	341.9969	745	0.0260	9.4429
460	0.6002	218.0803	605	0.9263	336.5421	750	0.0230	8.3440
465	0.4805	174.5785	610	0.8999	326.9771	755	0.0196	7.1270
470	0.3690	134.0695	615	0.8646	314.1212	760	0.0171	6.2202
475	0.2790	101.3607	620	0.8161	296.5250	765	0.0132	4.8106
480	0.2575	93.5615	625	0.7598	276.0413	770	0.0133	4.8248
485	0.2708	98.3812	630	0.7017	254.9522	775	0.0103	3.7269
490	0.3002	109.0585	635	0.6418	233.1809	780	0.0070	2.5547
495	0.3514	127.6601	640	0.5779	209.9579	785	0.0051	1.8452
500	0.4083	148.3602	645	0.5164	187.6376	790	0.0084	3.0453
505	0.4566	165.8809	650	0.4601	167.1833	795	0.0054	1.9646
510	0.5016	182.2545	655	0.4046	147.0018	800	0.0035	1.2583
515	0.5325	193.4848	660	0.3549	128.9356			
520	0.5569	202.3283	665	0.3096	112.4741			

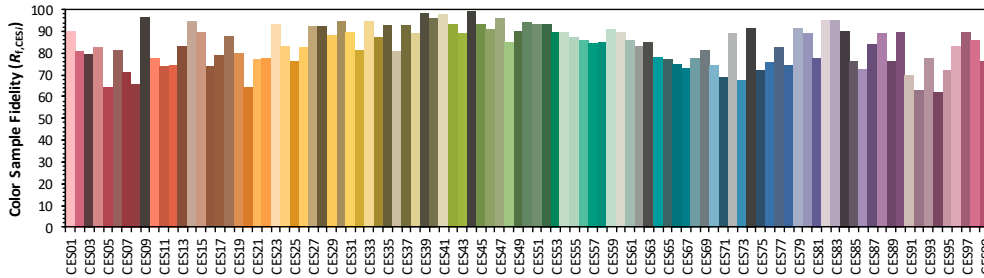
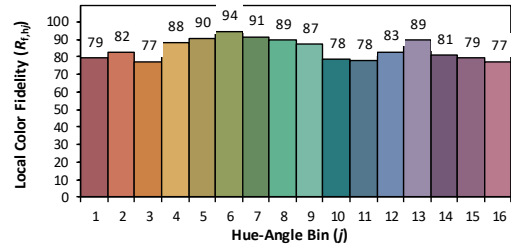
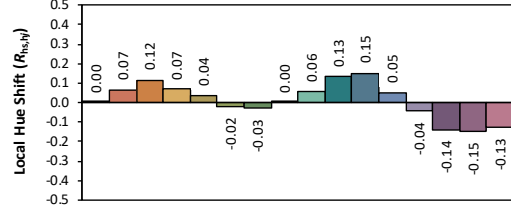
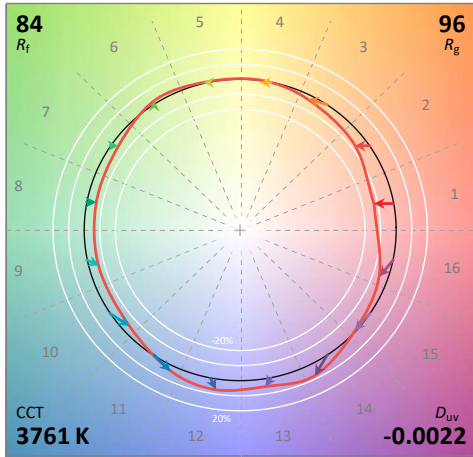
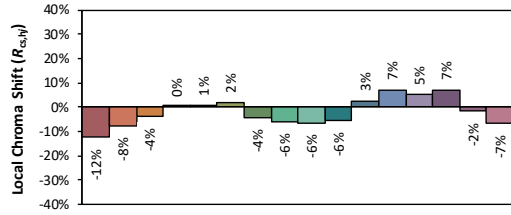
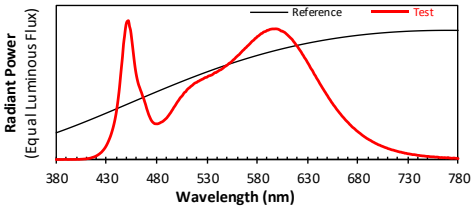


TM30

ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35003H1  
L128-XX80RA35000H1  
Date: 2020/8/21

Manufacturer: RAB LIGHTING INC.  
Model: WP3XFU120 (Tested at 50% CCT Setting)



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

x 0.3897  
y 0.3774  
u' 0.2309  
v' 0.5033

CIE 13.3-1995 (CRI)	
R <sub>a</sub>	83
R <sub>9</sub>	6

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)

<b>Test date</b>	2020-08-21	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	WP3XFU120(Tested at 100% CCT Setting)		

#### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200801	120.0	60	1.0277	122.59	0.994	8.91
8E-K1	277.0	60	0.4798	124.40	0.936	10.27
<b>DLC Pass Criteria</b>					$\geq 0.9(-3\%)$	$\leq 20(+5)$

#### Chromaticity Measurement - Sphere-Spectroradiometer Method:

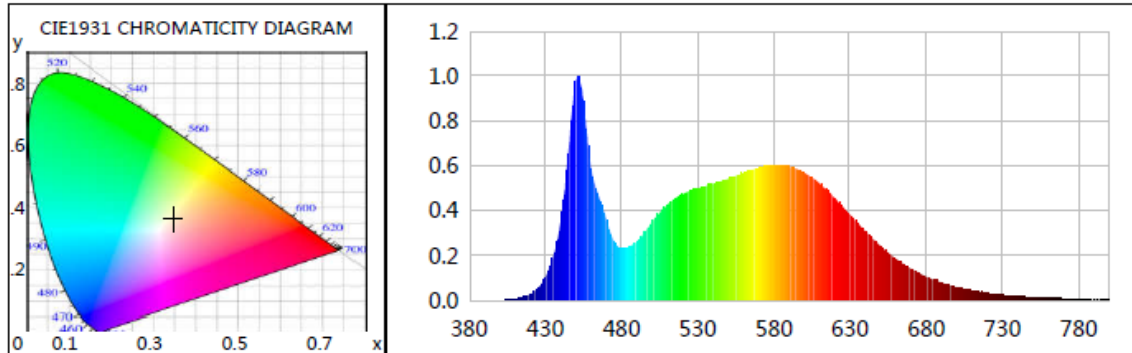
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	78	R9	-8
Frequency (Hz)	60	R2	87	R10	70
CCT (K)	5017	R3	93	R11	78
Duv	0.0034	R4	80	R12	59
Chromaticity (x, y)	x=0.3453 y=0.3585	R5	79	R13	81
Chromaticity (u', v')	u(u')=0.2089 v'(v')=0.4880	R6	82	R14	97
Color Rendering Index (CRI)	81	R7	84	R15	72
R9	-8	R8	61	--	--
Rf	82	--	--	--	--
Rg	94	--	--	--	--
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)	17589.2	17843.4	$\geq 10000(-10\%)$
Luminous Efficacy (lm/W)	143.48	143.44	Premium: $\geq 120(-3\%)$
Most worst Luminous/Highest Watts	141.40		



**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	0.2336	525	0.4859	231.2857	670	0.1393	66.3339
385	0.0003	0.1530	530	0.4957	235.9724	675	0.1204	57.3212
390	0.0003	0.1328	535	0.5060	240.8797	680	0.1049	49.9504
395	0.0004	0.1716	540	0.5176	246.4165	685	0.0898	42.7569
400	0.0008	0.3732	545	0.5274	251.0495	690	0.0773	36.7781
405	0.0017	0.8115	550	0.5398	256.9474	695	0.0665	31.6370
410	0.0049	2.3482	555	0.5532	263.3424	700	0.0573	27.2964
415	0.0116	5.5299	560	0.5669	269.8469	705	0.0487	23.1755
420	0.0249	11.8546	565	0.5795	275.8723	710	0.0414	19.6993
425	0.0500	23.8024	570	0.5888	280.2712	715	0.0351	16.7210
430	0.0999	47.5490	575	0.5962	283.8316	720	0.0299	14.2245
435	0.1879	89.4460	580	0.6018	286.4703	725	0.0260	12.3889
440	0.3435	163.5118	585	0.5989	285.1163	730	0.0227	10.8110
445	0.6484	308.6831	590	0.5950	283.2514	735	0.0191	9.0690
450	0.9752	464.2149	595	0.5837	277.8821	740	0.0163	7.7646
455	0.8826	420.1298	600	0.5683	270.5169	745	0.0135	6.4457
460	0.5886	280.1865	605	0.5460	259.9340	750	0.0121	5.7740
465	0.4628	220.3279	610	0.5207	247.8782	755	0.0098	4.6712
470	0.3550	168.9933	615	0.4892	232.8869	760	0.0091	4.3471
475	0.2602	123.8692	620	0.4551	216.6539	765	0.0070	3.3474
480	0.2316	110.2602	625	0.4177	198.8513	770	0.0060	2.8528
485	0.2390	113.7841	630	0.3797	180.7521	775	0.0044	2.0942
490	0.2588	123.2054	635	0.3438	163.6806	780	0.0045	2.1208
495	0.2993	142.4739	640	0.3066	145.9568	785	0.0039	1.8704
500	0.3472	165.2638	645	0.2723	129.6377	790	0.0039	1.8615
505	0.3886	184.9818	650	0.2406	114.5372	795	0.0036	1.7312
510	0.4261	202.8565	655	0.2114	100.6320	800	0.0021	1.0011
515	0.4515	214.9447	660	0.1845	87.8170			
520	0.4712	224.3314	665	0.1604	76.3730			



**TM30**

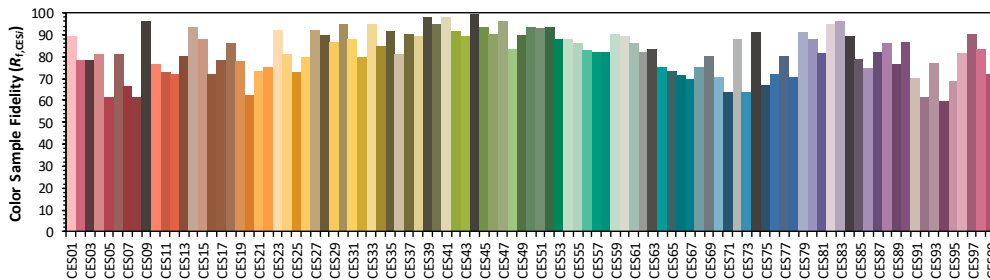
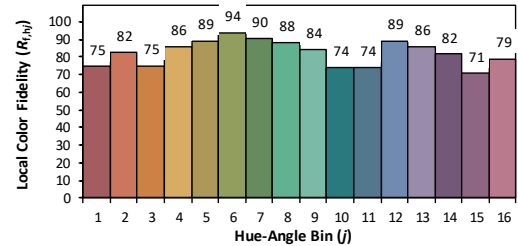
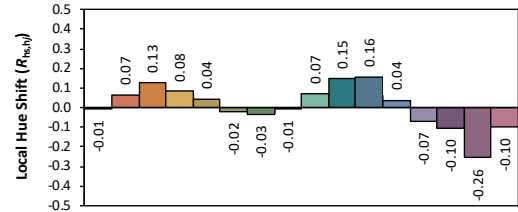
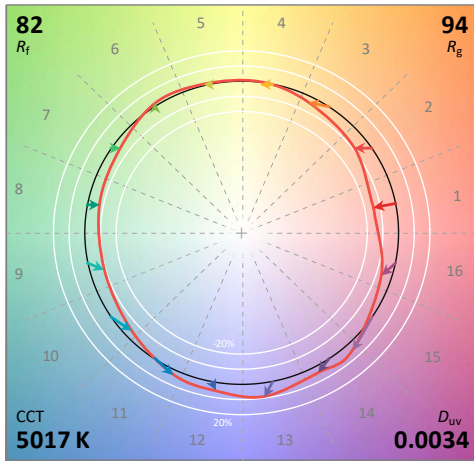
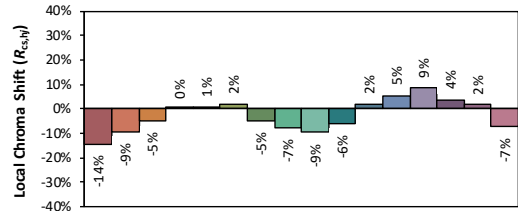
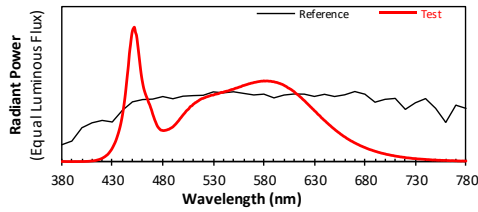
**ANSI/IES TM-30-18 Color Rendition Report**

**Source:** L128-XX80RA35003H1  
L128-XX80RA35000H1

**Date:** 2020/8/21

**Manufacturer:** RAB LIGHTING INC.

**Model:** WP3XFU120 (Tested at 100% CCT Setting)



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

$x$  0.3453  
 $y$  0.3585  
 $u'$  0.2089  
 $v'$  0.4880

CIE 13.3-1995 (CRI)  
 $R_a$  81  
 $R_9$  -8

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



Certificate#4810.01

Report No.:  
BLC2008018E-K-CF-PL

### 3. Test Equipment

Equipment Name	Model No.	Serial No.	Next Calibration Date
Goniophotometric System	GPM-3000	DYHXF120001	2022-01-18
AC Power Source	CHP-500	DYBWD010159	2022-01-25
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2022-01-24
Digital Power Meter	WT500	DYDWQ20010	2022-01-25
Integral Sphere (2M)	2M	DYJCE120067	2022-01-18
Digital Power Meter	WT500	DYDWQ20006	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 \*\*\*\*\*