



Report No.: BLC2010028E-C-R

LM-79-08 Test Report

For

Beyond LED Technology

(Brand Name: Beyond LED Technology)

Outdoor Pole/Arm-Mounted Area and Roadway Luminaires

Architectural Flood and Spot Luminaires

Model name(s): BLT-SB03D-200WJT3A1-BH10SP50

Remark: "a" can be any two letters to represent lamp colors; "b" can be "3RP", "3NP", "5RP", "5NP", "7RP" or "7NP" for Photocontrol type provided or blank for no Photocontrol provided; "c" can be "10SP" or "20SP" for Surge-Protective Device type provided or blank for no Surge-Protective Device provided; "d" can be "Z", "ZP", "ZM" or blank, "Z" = DC Sensor Receptacle provided, "ZP" = DC Sensor Receptacle and DC photocontrol provided, "ZM" = DC Sensor Receptacle and DC motion sensor provided, blank = no DC Sensor Receptacle provided; "e" can be "AM", "DM", "YM", "A&DM", "TM", "IM" or "FM" to represent mounting bracket types; "f" can be any digits to represent CCT.

Representative (Tested) Model:
BLT-SB03D-200WJT3A1-BH10SP50

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

Test & Report By:

Sophie Yang

Engineer: Sophie Yang

Date: 2020-11-07

Update: 2020-11-23 Correction LED model name to BXEM-40C-12H-6C-00-0-0 and BXEM-57C-12H-6C-00-0-0



Review By:

Jason Luo

Manager: Jason Luo



1.1 Product Information:

Model Number	BLT-SB03D-200WJT3A1-BH10SP50	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Pole/Arm-Mounted Area and Roadway Luminaires Architectural Flood and Spot Luminaires	
Rated Voltage / Frequency	120-277Vac, 50/60 Hz	
Nominal Power	200W	
Rated Initial Lamp Lumen	--	
Declared CCT	4000K, 4500K, 5000K, 5700K	
LED Manufacturer	Bridgelux Inc.	
LED Model	BXEM-40C-12H-6C-00-0-0 BXEM-57C-12H-6C-00-0-0	
Sample Number	BLC2010028E-C1(4000K),C2(5700K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s
Photo		
		



<p>AM</p>	<p>YM</p>
	
<p>DM</p>	<p>A&DM</p>
	
<p>TM</p>	<p>IM</p>
	
<p>FM</p>	
	



1.2 Test Specifications:

Date of Receipt	2020-11-01
Date of Test	2020-11-02
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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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° 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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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.

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

Test date	2020-11-02	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT-SB03D-200WJT3A1-BH10SP50		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC201002	120.0	60	1.707	202.86	0.994	10.54
8E-C1	277.0	60	0.783	199.79	0.92	14.78
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

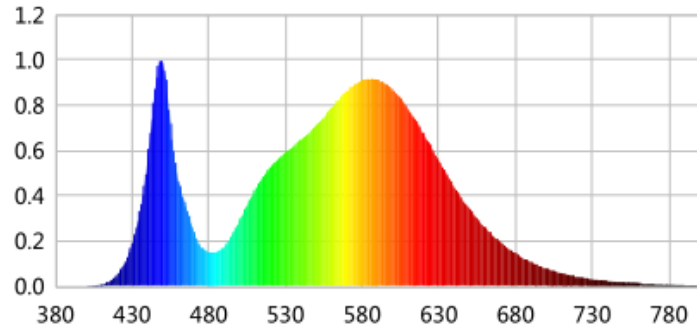
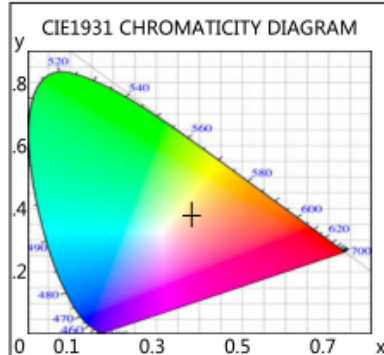
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	69	R9	-35
Frequency (Hz)	60	R2	81	R10	55
CCT (K)	3947	R3	90	R11	67
Duv	0.0003	R4	71	R12	47
Chromaticity (x, y)	x=0.3830 y=0.3789	R5	70	R13	71
Chromaticity (u', v')	u(u')=0.2259 v'(v')=0.5029	R6	73	R14	94
Color Rendering Index (CRI)	73	R7	80	R15	62
R9	-35	R8	49	--	--
Rf	76	--	--	--	--
Rg	94	--	--	--	--
Rcs,h1(%)	-18				

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)	25053.4	24838.1	>=10000(-10%)
Luminous Efficacy (lm/W)	123.50	124.32	Premium: >= 120(-3%)
Most worst Luminous/Highest	122.44		
Zonal lumens in the 0-90° zone (%)	100	--	Category 1: >=100(-1) Category 2: >=85(-3)
Zonal lumens in the 80-90°zone (%)	3.7	--	<=10(+3)
Beam Angle (°)	160	--	--
Center Beam Candle Power (cd)	6144	--	--



Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0004	0.2049	525	0.5605	283.8913	670	0.1961	99.3224
385	0.0006	0.2822	530	0.5904	299.0438	675	0.1693	85.7770
390	0.0008	0.3905	535	0.6177	312.8807	680	0.1460	73.9504
395	0.0009	0.4327	540	0.6483	328.3631	685	0.1253	63.4461
400	0.0010	0.5141	545	0.6748	341.7938	690	0.1082	54.7935
405	0.0031	1.5541	550	0.7110	360.1514	695	0.0927	46.9782
410	0.0087	4.4307	555	0.7465	378.1109	700	0.0787	39.8751
415	0.0226	11.4485	560	0.7888	399.5522	705	0.0686	34.7414
420	0.0498	25.2175	565	0.8267	418.7538	710	0.0569	28.7999
425	0.1005	50.8980	570	0.8617	436.4506	715	0.0496	25.1389
430	0.1889	95.6863	575	0.8920	451.8213	720	0.0429	21.7110
435	0.3304	167.3772	580	0.9124	462.1459	725	0.0373	18.8972
440	0.5529	280.0606	585	0.9159	463.9446	730	0.0312	15.7831
445	0.8750	443.2158	590	0.9142	463.0775	735	0.0279	14.1137
450	0.9920	502.4525	595	0.8978	454.7448	740	0.0231	11.7134
455	0.7179	363.6213	600	0.8697	440.5196	745	0.0206	10.4310
460	0.4699	238.0131	605	0.8323	421.5796	750	0.0176	8.9339
465	0.3534	178.9849	610	0.7865	398.3833	755	0.0145	7.3398
470	0.2436	123.4101	615	0.7323	370.9304	760	0.0128	6.4977
475	0.1748	88.5197	620	0.6767	342.7687	765	0.0106	5.3557
480	0.1524	77.1896	625	0.6140	310.9892	770	0.0099	5.0171
485	0.1529	77.4659	630	0.5556	281.4276	775	0.0078	3.9414
490	0.1750	88.6570	635	0.4972	251.8398	780	0.0072	3.6237
495	0.2244	113.6554	640	0.4410	223.3987	785	0.0056	2.8356
500	0.2903	147.0383	645	0.3890	197.0444	790	0.0057	2.8694
505	0.3591	181.9011	650	0.3413	172.8779	795	0.0043	2.1695
510	0.4253	215.4033	655	0.2985	151.1951	800	0.0032	1.6387
515	0.4802	243.2286	660	0.2600	131.6915			
520	0.5244	265.6364	665	0.2251	114.0153			

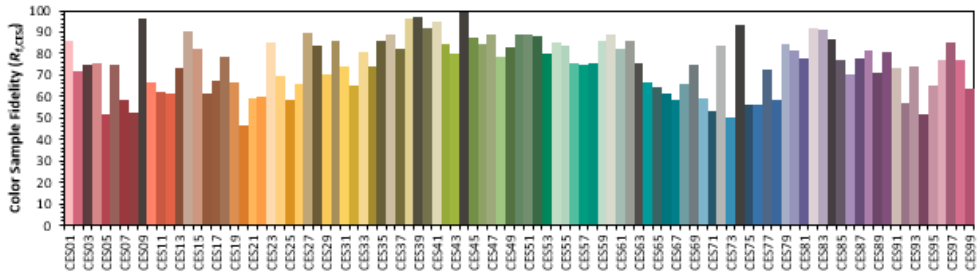
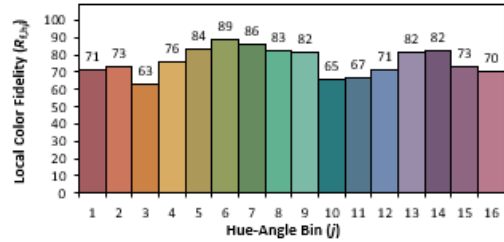
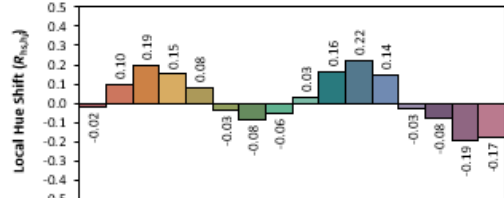
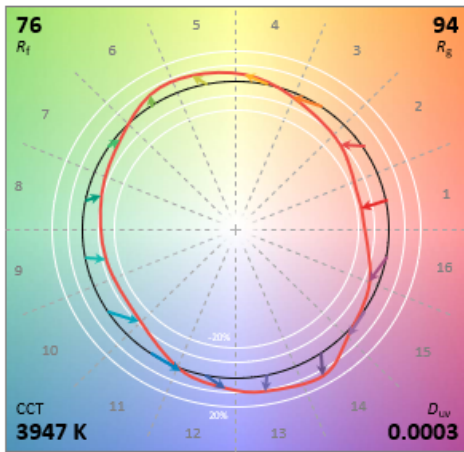
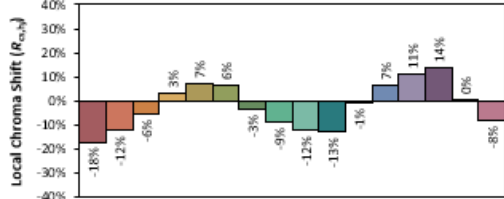
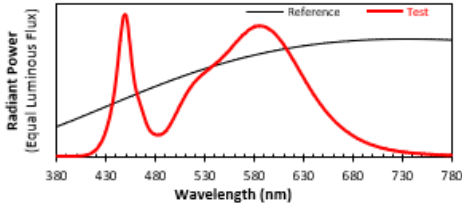


TM30

ANSI/IES TM-30-18 Color Rendition Report

Source: BXEM-40C-12H-6C-00-0-0
Date: 2020/11/2

Manufacturer: Beyond LED Technology
Model: BLT-SB03D-200WJT3A1-BH10SP50



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

x **0.3830**
 y **0.3789**
 u' **0.2259**
 v' **0.5029**

CIE 13.3-1995
 (CRI)
 R_a 73
 R_9 -35

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

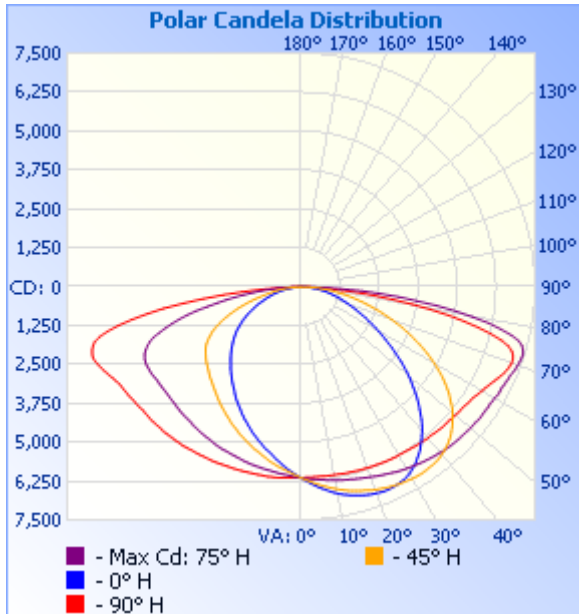
Zone	Lumens	% Lamp	% Luminaire
0-30	5,110.4	20.4%	20.4%
0-40	8,753.7	34.9%	34.9%
0-60	17,226.2	68.8%	68.8%
60-90	7,825.9	31.2%	31.2%
70-100	3,878.4	15.5%	15.5%
90-120	0	0%	0%
0-90	25,052.1	100%	100%
90-180	0	0%	0%
0-180	25,052.1	100%	100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	586.7	2.3%	90-100	0	0%
10-20	1,735.1	6.9%	100-110	0	0%
20-30	2,788.6	11.1%	110-120	0	0%
30-40	3,643.3	14.5%	120-130	0	0%
40-50	4,173.9	16.7%	130-140	0	0%
50-60	4,298.7	17.2%	140-150	0	0%
60-70	3,947.5	15.8%	150-160	0	0%
70-80	2,946.6	11.8%	160-170	0	0%
80-90	931.8	3.7%	170-180	0	0%



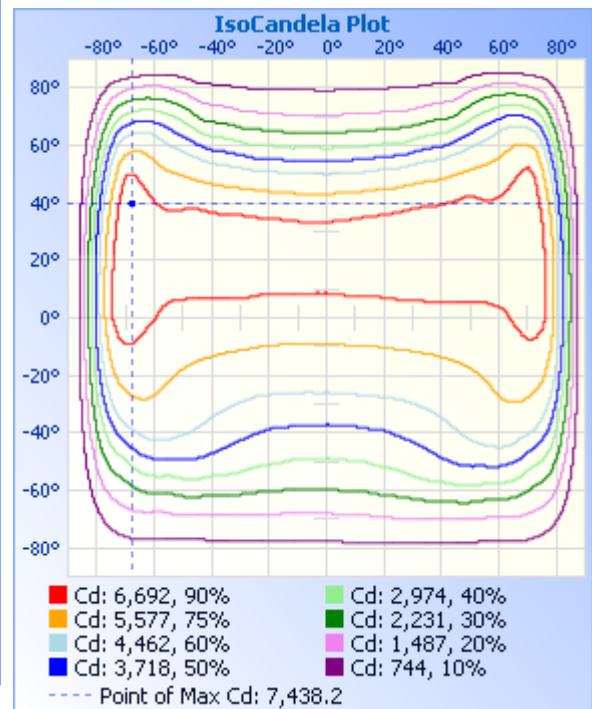
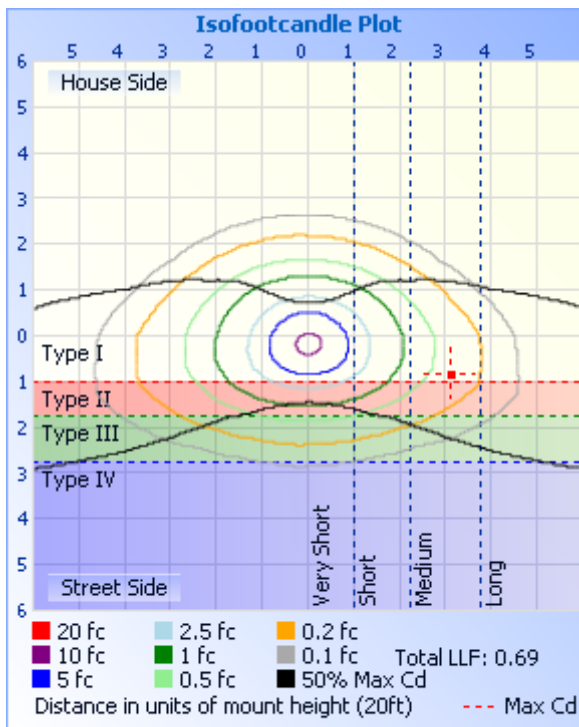
Photometric Data



Illuminance at a Distance

Distance (ft)	Center Beam fc	Beam Width
17.0ft	21.3 fc	52.3 ft 193.2 ft
34.0ft	5.31 fc	104.6 ft 386.4 ft
51.0ft	2.36 fc	156.9 ft 579.6 ft
68.0ft	1.33 fc	209.2 ft 772.8 ft
85.0ft	0.85 fc	261.5 ft 966.1 ft
102.0ft	0.59 fc	313.8 ft 1,159.3 ft

Vert. Spread: 113.9°
 Horiz. Spread: 160.0°





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Candela Table - Type C

	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345	360
0	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144	6144
1	6219	6208	6198	6187	6177	6160	6132	6130	6113	6091	6081	6083	6085	6084	6085	6091	6112	6127	6147	6165	6183	6190	6202	6213	6219
2	6280	6273	6255	6238	6212	6177	6129	6113	6082	6043	6026	6022	6017	6009	6029	6044	6078	6114	6150	6182	6218	6240	6262	6273	6280
3	6343	6336	6318	6284	6221	6189	6133	6100	6049	5994	5968	5961	5953	5946	5974	5998	6047	6089	6155	6202	6256	6304	6319	6338	6343
4	6405	6394	6372	6331	6268	6207	6127	6080	6016	5948	5911	5900	5892	5887	5920	5953	6014	6073	6161	6220	6287	6356	6378	6399	6405
5	6465	6455	6425	6378	6300	6223	6127	6065	5981	5901	5856	5838	5824	5825	5868	5910	5981	6059	6167	6243	6324	6399	6433	6464	6465
6	6525	6513	6476	6428	6333	6235	6128	6053	5945	5854	5801	5768	5751	5763	5815	5871	5951	6047	6172	6266	6359	6447	6493	6533	6525
7	6583	6571	6531	6470	6362	6256	6137	6024	5914	5804	5739	5702	5682	5699	5750	5836	5920	6034	6180	6286	6409	6495	6547	6592	6583
8	6642	6628	6580	6517	6394	6279	6138	6009	5878	5757	5685	5637	5613	5642	5696	5792	5890	6017	6186	6310	6444	6544	6598	6647	6642
9	6698	6685	6631	6562	6432	6293	6137	5994	5842	5713	5628	5576	5536	5580	5641	5748	5857	6004	6187	6330	6480	6596	6653	6707	6698
10	6749	6736	6686	6604	6463	6321	6140	5979	5807	5666	5567	5514	5469	5520	5590	5707	5826	5990	6196	6350	6518	6634	6709	6750	6749
11	6797	6777	6734	6646	6498	6331	6144	5962	5767	5615	5511	5443	5406	5453	5536	5659	5799	5977	6194	6370	6550	6678	6769	6803	6797
12	6835	6818	6771	6681	6529	6355	6154	5953	5741	5569	5456	5387	5346	5396	5487	5601	5771	5967	6191	6402	6589	6720	6812	6847	6835
13	6874	6870	6813	6723	6573	6369	6160	5936	5708	5523	5403	5320	5287	5333	5431	5556	5743	5952	6195	6420	6613	6776	6853	6886	6874
14	6915	6904	6848	6761	6605	6384	6165	5916	5675	5470	5346	5258	5222	5270	5375	5506	5715	5944	6197	6440	6646	6800	6889	6925	6915
15	6944	6926	6881	6791	6637	6406	6166	5902	5640	5423	5286	5195	5158	5209	5312	5464	5685	5934	6201	6465	6682	6840	6927	6958	6944
16	6978	6960	6910	6824	6671	6425	6172	5890	5608	5374	5226	5134	5087	5147	5261	5425	5648	5923	6204	6488	6716	6872	6960	6985	6978



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Certificate#4810.01

17	7002	6988	6928	6847	6703	6444	6181	5877	5582	5327	5173	5068	5025	5084	5213	5376	5615	5907	6213	6507	6754	6919	6987	7015	7002
18	7029	7010	6958	6878	6735	6462	6187	5853	5555	5277	5116	5005	4963	5018	5158	5331	5586	5896	6217	6534	6795	6956	7022	7042	7029
19	7049	7039	6977	6918	6767	6483	6191	5839	5525	5230	5045	4940	4895	4958	5095	5288	5558	5880	6224	6550	6815	6989	7050	7065	7049
20	7062	7053	7005	6943	6792	6507	6198	5830	5486	5185	4988	4881	4824	4888	5039	5245	5532	5860	6230	6574	6849	7020	7073	7087	7062
21	7080	7069	7023	6969	6818	6533	6204	5820	5458	5138	4937	4814	4756	4824	4984	5195	5495	5846	6235	6596	6898	7045	7096	7107	7080
22	7092	7070	7061	6990	6838	6559	6209	5807	5423	5097	4879	4746	4691	4764	4929	5152	5466	5835	6234	6616	6929	7068	7120	7119	7092
23	7096	7079	7076	7013	6867	6580	6215	5789	5392	5043	4819	4669	4627	4698	4870	5110	5439	5820	6242	6647	6955	7093	7140	7127	7096
24	7089	7081	7092	7036	6888	6604	6221	5774	5359	4991	4758	4606	4561	4634	4810	5054	5405	5811	6252	6673	6988	7122	7159	7136	7089
25	7081	7083	7101	7054	6922	6626	6232	5765	5321	4943	4698	4543	4498	4573	4747	5010	5379	5805	6261	6699	7021	7144	7173	7138	7081
26	7068	7075	7109	7072	6950	6652	6237	5749	5277	4893	4639	4478	4421	4505	4687	4969	5339	5798	6272	6727	7056	7167	7190	7132	7068
27	7038	7076	7113	7082	6980	6686	6242	5736	5265	4849	4585	4409	4353	4439	4627	4923	5308	5786	6279	6757	7081	7192	7193	7129	7038
28	7018	7050	7113	7096	7000	6704	6252	5729	5237	4802	4526	4349	4289	4376	4570	4869	5283	5771	6282	6776	7102	7210	7199	7112	7018
29	6985	7027	7105	7107	7013	6730	6256	5720	5207	4756	4458	4286	4226	4313	4515	4818	5249	5755	6285	6796	7118	7224	7200	7074	6985
30	6945	6992	7096	7123	7048	6747	6249	5707	5178	4708	4401	4221	4168	4238	4455	4776	5220	5737	6293	6823	7150	7242	7189	7042	6945
31	6878	6950	7070	7131	7066	6772	6254	5694	5150	4661	4345	4157	4095	4192	4398	4728	5186	5719	6300	6845	7171	7261	7174	6994	6878
32	6814	6895	7047	7137	7086	6791	6261	5690	5124	4613	4287	4096	4021	4109	4341	4684	5148	5710	6310	6870	7188	7265	7154	6940	6814
33	6746	6825	7017	7140	7105	6814	6268	5674	5091	4570	4231	4021	3948	4048	4280	4639	5125	5696	6314	6892	7219	7273	7124	6878	6746
34	6657	6754	6977	7132	7121	6837	6276	5656	5061	4527	4173	3960	3884	3988	4226	4598	5095	5687	6327	6919	7236	7276	7082	6809	6657
35	6575	6678	6934	7122	7134	6858	6287	5644	5033	4484	4109	3896	3827	3918	4160	4549	5062	5678	6340	6938	7259	7273	7053	6737	6575



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Certificate#4810.01

36	6486	6582	6875	7113	7156	6875	6304	5634	5012	4442	4051	3837	3764	3856	4105	4507	5030	5661	6353	6958	7277	7272	6995	6660	6486
37	6376	6494	6817	7103	7174	6899	6311	5618	4972	4393	3995	3769	3698	3790	4048	4458	5008	5650	6363	6982	7302	7263	6925	6573	6376
38	6269	6390	6746	7093	7191	6917	6319	5614	4945	4355	3941	3702	3628	3729	3988	4406	4980	5635	6364	6996	7329	7247	6858	6482	6269
39	6150	6284	6671	7064	7208	6937	6332	5595	4924	4312	3883	3637	3569	3664	3930	4369	4953	5617	6373	7012	7345	7232	6791	6360	6150
40	6036	6165	6581	7027	7217	6952	6337	5590	4901	4272	3823	3578	3507	3602	3873	4319	4921	5607	6380	7036	7366	7207	6710	6240	6036
41	5907	6044	6489	6991	7225	6974	6338	5580	4869	4235	3773	3512	3449	3542	3819	4278	4893	5599	6385	7053	7375	7181	6626	6121	5907
42	5773	5915	6390	6951	7233	6986	6352	5567	4847	4185	3719	3452	3373	3472	3765	4238	4873	5593	6393	7074	7389	7131	6533	5996	5773
43	5618	5785	6284	6900	7225	7005	6366	5560	4825	4150	3662	3394	3313	3413	3712	4200	4839	5582	6409	7090	7405	7084	6418	5863	5618
44	5473	5646	6170	6841	7225	7021	6381	5546	4803	4109	3598	3338	3256	3351	3651	4163	4811	5574	6413	7106	7413	7028	6310	5727	5473
45	5330	5500	6043	6778	7220	7022	6391	5535	4776	4074	3548	3274	3194	3283	3601	4126	4786	5554	6406	7121	7416	6970	6204	5583	5330
46	5176	5347	5917	6697	7209	7037	6396	5526	4755	4031	3498	3217	3129	3230	3553	4086	4761	5549	6421	7133	7413	6911	6076	5432	5176
47	5014	5207	5789	6621	7209	7044	6406	5512	4721	3995	3442	3160	3066	3168	3502	4045	4744	5537	6424	7148	7397	6839	5938	5277	5014
48	4843	5041	5640	6536	7195	7052	6408	5504	4701	3964	3388	3088	3006	3111	3450	4006	4722	5529	6434	7149	7400	6753	5808	5135	4843
49	4688	4880	5496	6439	7173	7065	6429	5504	4683	3923	3333	3023	2944	3053	3389	3970	4702	5521	6441	7166	7392	6669	5655	4966	4688
50	4535	4706	5345	6335	7145	7078	6446	5503	4661	3882	3283	2962	2870	2992	3337	3933	4689	5511	6438	7167	7376	6574	5509	4806	4535
51	4365	4550	5189	6240	7114	7088	6457	5497	4647	3846	3225	2901	2812	2932	3285	3902	4669	5508	6442	7179	7350	6463	5355	4639	4365
52	4194	4377	5039	6115	7070	7091	6465	5495	4629	3805	3168	2836	2747	2874	3234	3860	4652	5508	6448	7197	7322	6362	5200	4466	4194
53	4023	4199	4875	5985	7029	7114	6478	5496	4610	3763	3108	2762	2682	2810	3181	3827	4641	5508	6467	7213	7289	6236	5032	4294	4023
54	3849	4030	4717	5866	6979	7123	6497	5508	4589	3712	3043	2693	2616	2747	3124	3779	4632	5508	6480	7232	7247	6115	4877	4120	3849



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55	3683	3856	4535	5723	6921	7123	6526	5514	4565	3655	2975	2626	2542	2670	3063	3746	4611	5511	6495	7237	7201	5980	4703	3935	3683
56	3512	3688	4370	5579	6864	7124	6546	5518	4541	3601	2910	2541	2471	2605	3005	3696	4588	5514	6511	7243	7156	5839	4528	3767	3512
57	3336	3508	4188	5432	6795	7138	6573	5527	4512	3539	2830	2465	2394	2533	2929	3655	4566	5517	6526	7260	7089	5685	4347	3600	3336
58	3186	3343	4003	5268	6725	7135	6606	5542	4476	3465	2756	2388	2315	2457	2856	3599	4545	5531	6546	7267	7028	5521	4176	3433	3186
59	3022	3176	3841	5109	6641	7150	6656	5544	4431	3389	2667	2310	2237	2373	2788	3537	4521	5544	6565	7272	6947	5366	3980	3276	3022
60	2878	3026	3649	4936	6563	7163	6695	5547	4384	3299	2577	2229	2158	2298	2709	3464	4482	5555	6579	7249	6874	5208	3811	3103	2878
61	2730	2867	3479	4770	6465	7199	6736	5547	4303	3207	2490	2151	2065	2218	2625	3380	4440	5557	6601	7261	6781	5045	3635	2942	2730
62	2579	2717	3305	4586	6360	7211	6787	5545	4227	3112	2389	2054	1981	2136	2533	3294	4381	5556	6626	7272	6674	4864	3454	2790	2579
63	2438	2568	3141	4411	6249	7204	6838	5534	4134	2986	2295	1968	1897	2037	2442	3198	4304	5560	6666	7273	6553	4680	3274	2650	2438
64	2311	2429	2968	4226	6112	7230	6895	5511	4028	2869	2194	1880	1808	1947	2347	3094	4232	5555	6717	7281	6441	4488	3095	2500	2311
65	2181	2306	2804	4031	5994	7248	6965	5475	3897	2740	2098	1790	1713	1858	2246	2983	4117	5532	6773	7283	6308	4304	2929	2356	2181
66	2049	2166	2658	3859	5861	7275	7023	5427	3754	2610	1995	1695	1630	1772	2142	2846	4000	5496	6823	7298	6174	4105	2759	2224	2049
67	1921	2039	2506	3663	5724	7288	7076	5339	3594	2479	1876	1608	1545	1674	2022	2715	3873	5447	6880	7322	6044	3923	2612	2084	1921
68	1807	1897	2344	3485	5562	7335	7129	5239	3429	2333	1773	1516	1460	1576	1915	2577	3728	5368	6932	7331	5874	3709	2453	1957	1807
69	1695	1781	2197	3276	5416	7368	7160	5105	3233	2193	1668	1419	1372	1486	1808	2424	3554	5276	6979	7330	5708	3516	2282	1831	1695
70	1580	1663	2036	3092	5247	7391	7185	4947	3044	2058	1564	1337	1297	1402	1693	2278	3372	5163	7025	7367	5553	3318	2130	1702	1580
71	1486	1559	1902	2904	5091	7417	7183	4738	2844	1922	1453	1259	1216	1320	1577	2133	3182	5013	7058	7387	5376	3119	1981	1592	1486
72	1385	1457	1770	2732	4935	7437	7148	4509	2640	1769	1349	1174	1137	1229	1473	1979	2974	4788	7046	7406	5205	2920	1851	1492	1385
73	1293	1357	1649	2549	4751	7438	7066	4277	2443	1630	1255	1098	1064	1152	1370	1828	2739	4560	7011	7403	5019	2735	1706	1393	1293



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74	1202	1267	1521	2356	4562	7404	6911	4014	2229	1496	1160	1017	987	1070	1269	1658	2505	4314	6949	7381	4822	2531	1580	1286	1202
75	1116	1174	1414	2180	4380	7335	6655	3707	2042	1364	1065	943	912	990	1162	1519	2287	4058	6863	7340	4639	2344	1464	1199	1116
76	1028	1086	1307	2009	4193	7194	6267	3383	1860	1245	971	866	844	913	1066	1371	2077	3773	6667	7282	4431	2142	1348	1106	1028
77	956	996	1199	1838	4018	6923	5838	3048	1684	1120	889	796	770	831	975	1238	1875	3448	6374	7167	4212	1970	1237	1012	956
78	872	910	1096	1692	3796	6541	5347	2721	1472	1011	814	720	685	755	890	1096	1647	3065	5990	6930	4023	1791	1137	935	872
79	797	835	990	1528	3545	6129	4816	2399	1290	902	737	642	590	677	808	978	1440	2736	5532	6596	3756	1634	1027	846	797
80	702	742	893	1378	3225	5569	4223	2142	1140	799	652	558	493	589	709	873	1257	2444	5014	6151	3454	1469	917	768	702
81	620	657	802	1211	2936	5026	3629	1889	999	691	566	481	389	497	614	764	1090	2148	4465	5646	3157	1275	831	674	620
82	534	578	701	1056	2656	4408	2988	1630	847	589	493	409	312	416	531	637	938	1840	3783	5044	2886	1118	724	595	534
83	435	493	618	921	2330	3736	2404	1398	723	464	413	318	228	326	452	528	793	1564	3168	4370	2593	986	636	518	435
84	348	420	518	779	1956	3152	1882	1163	620	337	321	241	162	244	350	379	661	1299	2491	3675	2167	816	535	421	348
85	277	330	423	624	1696	2539	1327	927	480	222	250	171	106	173	272	251	505	1029	1901	2968	1882	658	436	347	277
86	200	245	330	457	1370	1945	861	671	335	121	161	100	60	101	175	150	355	741	1317	2308	1525	478	330	267	200
87	131	161	222	296	983	1250	457	428	169	55	60	44	33	51	72	71	201	500	776	1547	1126	327	228	175	131
88	76	82	114	149	511	720	165	128	44	30	27	23	23	22	28	41	66	205	354	996	663	188	119	91	76
89	16	36	45	60	140	231	30	27	22	19	25	24	23	28	29	28	35	42	81	395	228	84	47	37	16
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
176	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
177	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
178	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



BUG Rating

Lum. Classification System (LCS)

<u>LCS Zone</u>	<u>Lumens</u>	<u>%Lamp</u>	<u>%Lum</u>
FL (0-30)	2865.4	11.4	11.4
FM (30-60)	7166.4	28.6	28.6
FH (60-80)	4041.4	16.1	16.1
FVH (80-90)	633.0	2.5	2.5
BL (0-30)	2245.0	9.0	9.0
BM (30-60)	4951.6	19.8	19.8
BH (60-80)	2852.0	11.4	11.4
BVH(80-90)	298.6	1.2	1.2
UL (90-100)	0.0	0.0	0.0
UH (100-180)	0.0	0.0	0.0
Total	25053.4	100.0	100.0
BUG Rating	B4-U0-G4		

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

Test date	2020-11-02	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT-SB03D-200WJT3A1-BH10SP50		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC201002	120.0	60	1.698	202.72	0.995	10.85
8E-C2	277.0	60	0.782	199.86	0.923	14.92
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

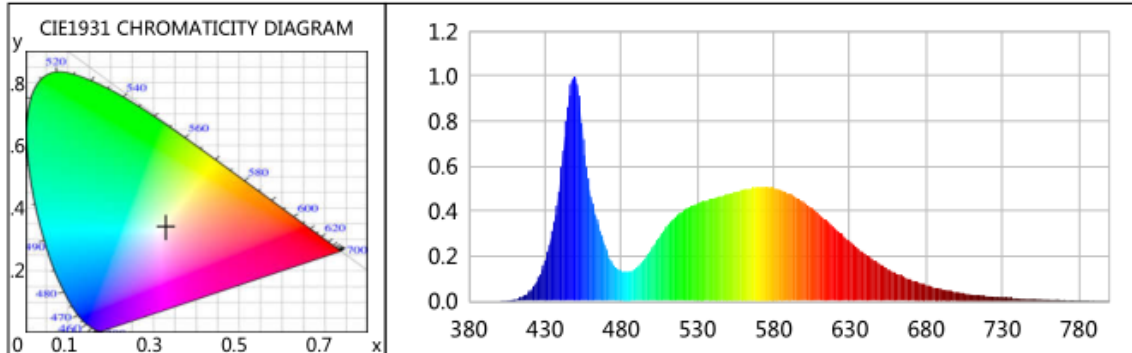
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	73	R9	-25
Frequency (Hz)	60	R2	80	R10	52
CCT (K)	5720	R3	84	R11	74
Duv	0.0009	R4	76	R12	49
Chromaticity (x, y)	x=0.3276 y=0.3385	R5	74	R13	74
Chromaticity (u', v')	u(u')=0.2045 v'(v')=0.4755	R6	73	R14	91
Color Rendering Index (CRI)	75	R7	82	R15	68
R9	-25	R8	60	--	--
Rf	76	--	--	--	--
Rg	95	--	--	--	--
Rcs,h1(%)	-17				

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)	26889.8	26715.9	>=10000(-10%)
Luminous Efficacy (lm/W)	132.65	133.67	Premium: >= 120(-3%)
Most worst Luminous/Highest Watts	131.79		



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	0.2659	525	0.4194	369.8185	670	0.0943	83.1472
385	0.0003	0.2329	530	0.4347	383.3746	675	0.0819	72.2127
390	0.0007	0.5821	535	0.4460	393.3496	680	0.0717	63.1986
395	0.0010	0.8915	540	0.4572	403.1514	685	0.0614	54.1351
400	0.0010	0.8910	545	0.4638	409.0459	690	0.0530	46.7414
405	0.0028	2.4942	550	0.4752	419.0261	695	0.0462	40.7384
410	0.0077	6.8110	555	0.4843	427.1120	700	0.0394	34.7886
415	0.0199	17.5629	560	0.4950	436.5204	705	0.0332	29.2787
420	0.0447	39.4227	565	0.5012	442.0026	710	0.0288	25.3788
425	0.0922	81.3519	570	0.5043	444.7346	715	0.0248	21.8704
430	0.1771	156.2030	575	0.5067	446.8154	720	0.0212	18.6796
435	0.3163	278.9413	580	0.5028	443.4321	725	0.0185	16.3289
440	0.5391	475.4551	585	0.4920	433.8758	730	0.0161	14.1648
445	0.8637	761.7099	590	0.4794	422.8071	735	0.0143	12.6310
450	0.9948	877.2465	595	0.4607	406.2457	740	0.0124	10.9154
455	0.7213	636.0774	600	0.4399	387.9165	745	0.0100	8.8321
460	0.4648	409.8902	605	0.4138	364.9026	750	0.0093	8.1782
465	0.3417	301.3291	610	0.3865	340.8366	755	0.0077	6.7467
470	0.2307	203.4678	615	0.3563	314.2419	760	0.0075	6.5710
475	0.1601	141.2143	620	0.3257	287.1999	765	0.0064	5.6687
480	0.1343	118.4130	625	0.2947	259.8546	770	0.0059	5.2370
485	0.1313	115.8214	630	0.2651	233.8178	775	0.0039	3.4233
490	0.1470	129.5944	635	0.2363	208.3734	780	0.0032	2.8530
495	0.1854	163.4777	640	0.2106	185.7346	785	0.0037	3.2476
500	0.2354	207.6124	645	0.1855	163.5723	790	0.0035	3.1101
505	0.2850	251.3397	650	0.1629	143.6671	795	0.0025	2.2025
510	0.3319	292.6843	655	0.1430	126.1157	800	0.0029	2.5538
515	0.3701	326.3827	660	0.1252	110.4050			
520	0.3983	351.2238	665	0.1082	95.4240			

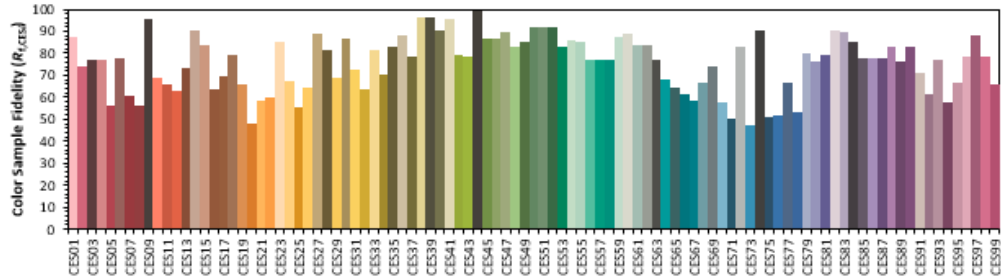
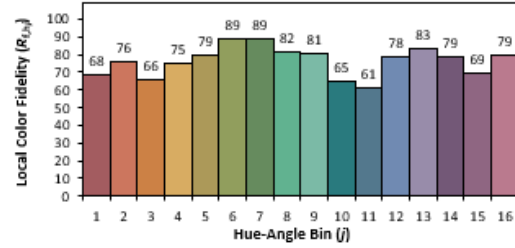
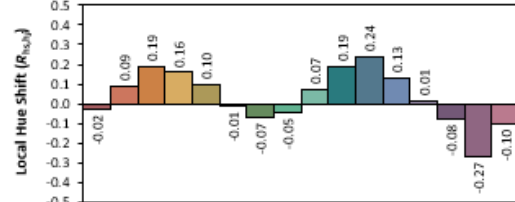
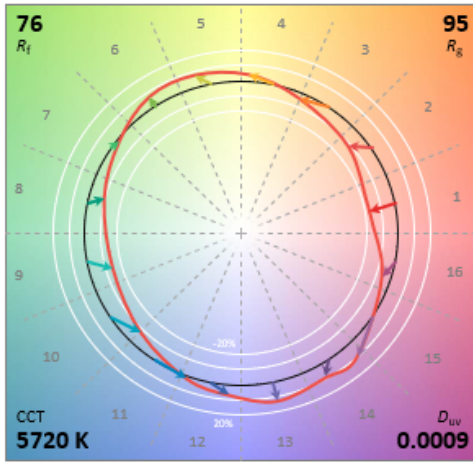
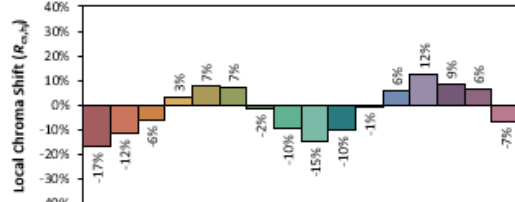
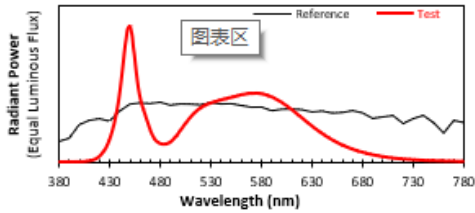


TM30

ANSI/IES TM-30-18 Color Rendition Report

Source: BXEM-57C-12H-6C-00-0-0
Date: 2020/11/2

Manufacturer: Beyond LED Technology
Model: BLT-SB03D-200WJT3A1-BH10SP50



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

x: 0.3276
y: 0.3385
u': 0.2045
v': 0.4755

CIE 13.3-1995 (CRI)
Ra: 75
R9: -25

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 (4500K and 5000K):

Model Number	Luminous Flux (lm)	Power (W)	Efficacy (lm/W)
BLT-SB03D-200WJT3A1-BH10SP50	25053.4	202.86	123.5

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

$$25512.5 = (26889.8 - 25053.4) / 4 + 25053.4$$

$$25971.6 = (26889.8 - 25053.4) / 4 + 25512.5$$

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

$$202.79 = (202.72 + 202.86) / 2$$

$$202.76 = (202.72 + 202.79) / 2$$

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

$$125.81 = 25512.5 / 202.79$$

$$128.09 = 25971.6 / 202.76$$



Report No.: BLC2010028E-C-R

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 *****