



Report No.:  
BLC2101026E-D-PL

## LM-79-08 Test Report

For

# Beyond LED Technology

(Brand Name: Beyond LED Technology)

## High-Bay Luminaires for Commercial and Industrial Buildings

Model name(s): BLT-HB05B-150WS1BT2D1-WH30/40/50

Remark: "a" can be any two letters to represent lamp colors; BH=Black, WH=White or Customized; "b" can be "S" or blank for Surge-Protective Device provided or not; "c" can be "M" or blank for Motion Sensor, PIR sensor provided or not; "e" can be any digits for CCT.

Representative (Tested) Model:  
BLT-HB05B-150WS1BT2D1-WH30/40/50

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

Test & Report By:

*Sophie Yang*

Engineer: Sophie Yang

Date:2021-01-28

Review By:

*Jason Luo*

Manager: Jason Luo

This is multiple listing report, the original report No. is BLC2101026E-D.



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### 1.1 Product Information:

Model Number	BLT-HB05B-150WS1BT2D1-WH30/40/50	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	High-Bay Luminaires for Commercial and Industrial Buildings	
Rated Voltage / Frequency	120-277Vac, 50/60 Hz	
Nominal Power	150W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K, 4000K, 5000K(Color tunable)	
LED Manufacturer	Lumileds Holding B.V.	
LED Model	L128-3080RA35003H1	
Sample Number	BLC2101026E-D1	
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	2021-01-20
Date of Test	2021-01-26
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.



## 2.1 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

<b>Test date</b>	2021-01-26	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	BLT-HB05B-150WS1BT2D1-WH30/40/50 tested at 0% CCT Setting)		

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC210102	120.0	60	1.275	152.82	0.999	3.62
6E-D1	277.0	60	0.549	145.86	0.959	8.77
<b>DLC Pass Criteria</b>					<b>&gt;= 0.9(-3%)</b>	<b>&lt;= 20(+5)</b>

### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	4
Frequency (Hz)	60	R2	90	R10	79
CCT (K)	2879	R3	96	R11	81
Duv	-0.0018	R4	81	R12	74
Chromaticity (x, y)	x=0.4429 y=0.4013	R5	81	R13	83
Chromaticity (u', v')	u(u')=0.2556 v'(v')=0.5212	R6	89	R14	99
Color Rendering Index (CRI)	82	R7	80	R15	73
R9	4	R8	57	--	--
Rf	84	--	--	--	--
Rg	98	--	--	--	--
Rcs,h1(%)	-12	--	--	--	--

### Photometric Measurement – Goniophotometer Method:

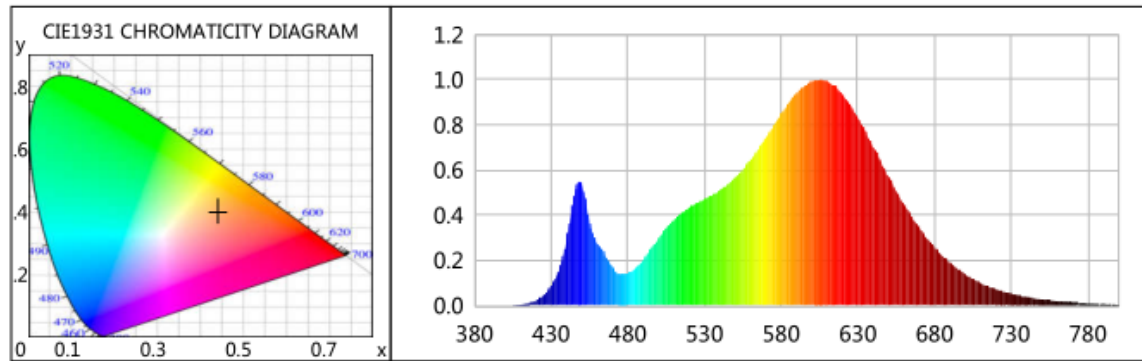
Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	21902.1	21132.9	>=10000(-10%)
Luminous Efficacy (lm/W)	143.32	144.88	Premium: >= 135(-3%)
Most worst Luminous/Highest	138.29		
Zonal lumens in the 20-50° (%)	63.80	--	>=30(-10)
Beam Angle (°)	87.8	--	--
Center Beam Candle Power (cd)	10896	--	--



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### 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	0.1163	525	0.4535	211.0553	670	0.3440	160.1016
385	0.0002	0.1120	530	0.4712	219.2926	675	0.2979	138.6175
390	0.0003	0.1410	535	0.4903	228.1780	680	0.2573	119.7544
395	0.0003	0.1556	540	0.5109	237.7684	685	0.2213	102.9946
400	0.0007	0.3089	545	0.5359	249.3866	690	0.1905	88.6656
405	0.0016	0.7239	550	0.5658	263.3268	695	0.1625	75.6129
410	0.0044	2.0288	555	0.6017	280.0053	700	0.1385	64.4495
415	0.0104	4.8357	560	0.6445	299.9311	705	0.1181	54.9629
420	0.0228	10.6295	565	0.6899	321.0557	710	0.1014	47.1807
425	0.0458	21.3362	570	0.7419	345.2833	715	0.0852	39.6666
430	0.0866	40.2999	575	0.7955	370.2159	720	0.0725	33.7264
435	0.1566	72.8572	580	0.8497	395.4397	725	0.0615	28.6156
440	0.2845	132.4027	585	0.8966	417.2432	730	0.0519	24.1403
445	0.4841	225.3125	590	0.9402	437.5567	735	0.0446	20.7460
450	0.5342	248.5921	595	0.9704	451.6168	740	0.0380	17.7027
455	0.3705	172.4250	600	0.9922	461.7606	745	0.0322	14.9999
460	0.2756	128.2780	605	1.0000	465.3867	750	0.0275	12.8063
465	0.2270	105.6292	610	0.9940	462.5754	755	0.0236	10.9796
470	0.1664	77.4346	615	0.9713	452.0135	760	0.0193	9.0036
475	0.1401	65.1890	620	0.9355	435.3600	765	0.0159	7.4191
480	0.1452	67.5862	625	0.8879	413.2387	770	0.0142	6.6165
485	0.1643	76.4774	630	0.8315	386.9561	775	0.0129	6.0243
490	0.2006	93.3351	635	0.7685	357.6318	780	0.0097	4.5154
495	0.2488	115.7944	640	0.7032	327.2549	785	0.0084	3.9011
500	0.2984	138.8588	645	0.6365	296.2168	790	0.0079	3.6609
505	0.3418	159.0515	650	0.5715	265.9503	795	0.0073	3.4164
510	0.3799	176.7851	655	0.5081	236.4850	800	0.0052	2.4210
515	0.4093	190.5048	660	0.4476	208.3193			
520	0.4328	201.3964	665	0.3928	182.7954			

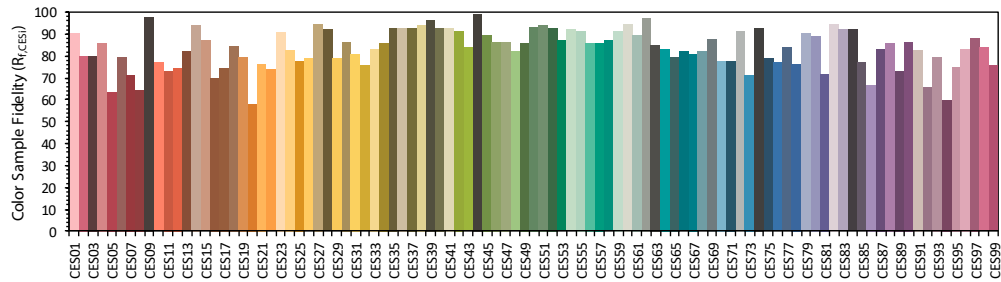
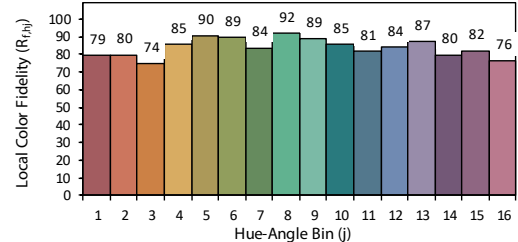
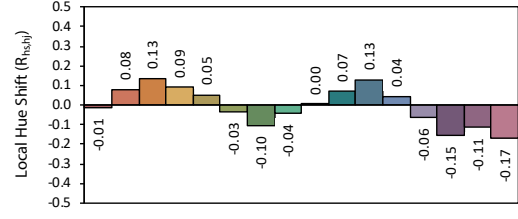
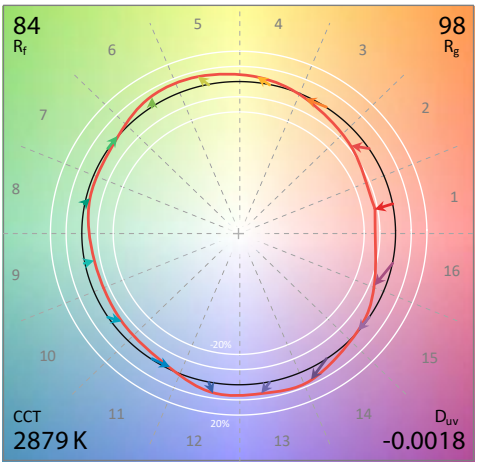
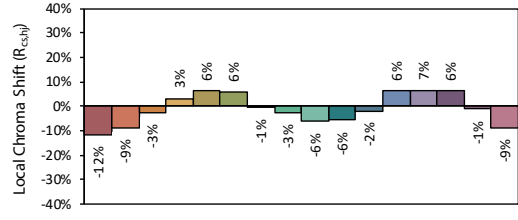
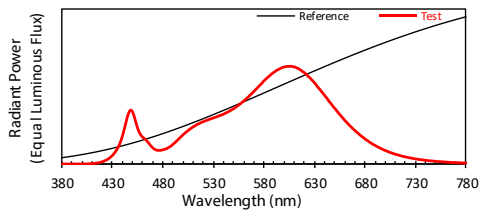


TM30

ANSI / IES TM-30-18 Color Rendering Report

Source: L128-3080RA35003H1
Date: 2021/1/26

Manufacturer: Beyond Led Technology
Model: BLT-HB05B-150WS1BT2D1-WH30/40/50



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

x 0.4429
y 0.4013
u' 0.2556
v' 0.5212

CIE 13.3-1995 (CRI)
Ra 82
R9 4

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	8,855.1	40.4%	40.4%
0-40	14,117.8	64.5%	64.5%
0-60	20,341.7	92.9%	92.9%
60-90	1,523.5	7%	7%
70-100	462.8	2.1%	2.1%
90-120	0.9	0%	0%
0-90	21,865.2	99.8%	99.8%
90-180	33.7	0.2%	0.2%
0-180	21,898.9	100%	100%

### Lumens Per Zone

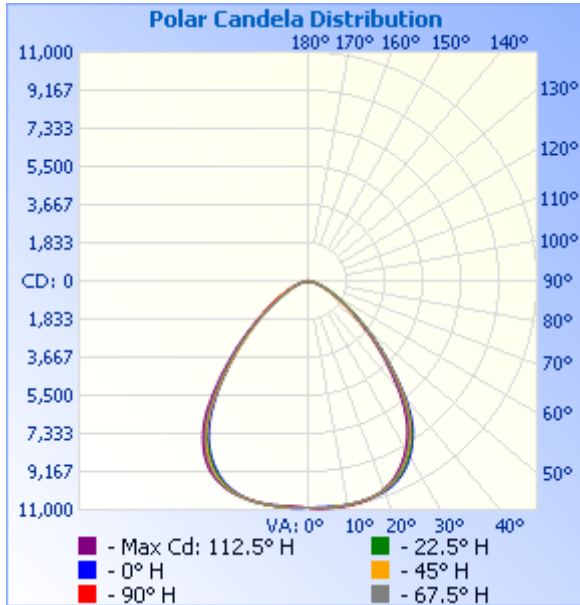
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	1,042.3	4.8%	90-100	0.3	0%
10-20	3,075.6	14.0%	100-110	0.1	0%
20-30	4,737.6	21.6%	110-120	0.5	0%
30-40	5,262.4	24.0%	120-130	1.9	0%
40-50	3,993.9	18.2%	130-140	5.5	0%
50-60	2,230.0	10.2%	140-150	8.3	0%
60-70	1,061.0	4.8%	150-160	8.7	0%
70-80	423.0	1.9%	160-170	6.2	0%
80-90	39.5	0.2%	170-180	2.3	0%



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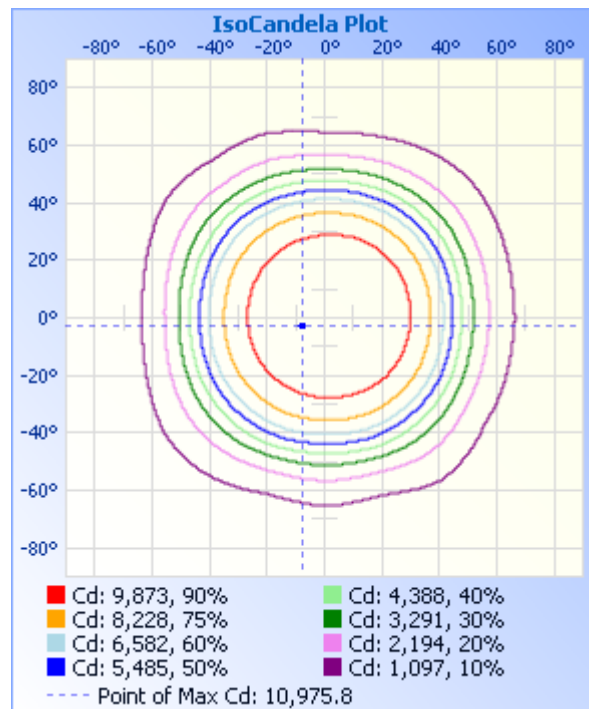
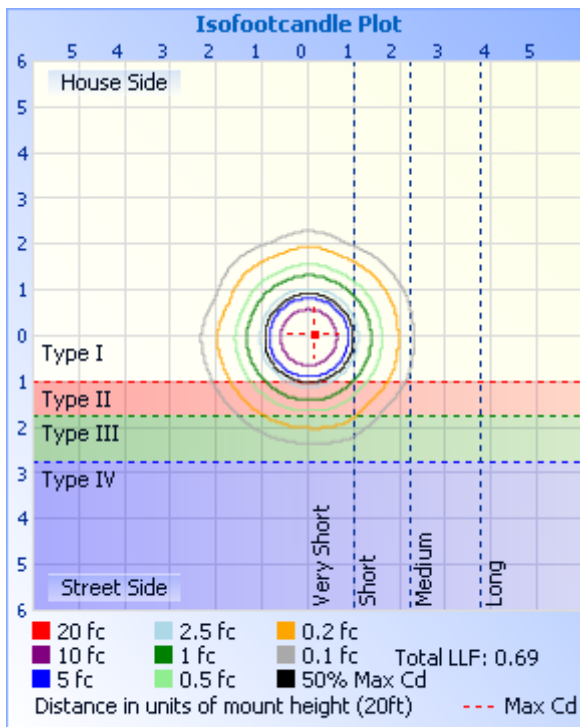
**Photometric Data**



**Illuminance at a Distance**

	Center Beam fc	Beam Width	
17.0ft	37.7 fc	32.3 ft	32.7 ft
34.0ft	9.43 fc	64.6 ft	65.4 ft
51.0ft	4.19 fc	96.9 ft	98.1 ft
68.0ft	2.36 fc	129.3 ft	130.8 ft
85.0ft	1.51 fc	161.6 ft	163.5 ft
102.0ft	1.05 fc	193.9 ft	196.2 ft

■ Vert. Spread: 87.1°  
■ Horiz. Spread: 87.8°







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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	10896	10896	10896	10896	10896	10896	10896	10896	10896	10896	10896	10896	10896	10896	10896	10896	10896
1	10892	10900	10899	10908	10912	10913	10915	10906	10905	10903	10895	10888	10886	10881	10886	10884	10892
2	10886	10905	10901	10916	10927	10931	10923	10921	10918	10905	10900	10891	10875	10870	10871	10880	10886
3	10884	10905	10910	10930	10939	10943	10932	10929	10928	10911	10905	10892	10874	10859	10861	10879	10884
4	10888	10914	10916	10940	10942	10954	10933	10941	10936	10922	10916	10894	10878	10857	10857	10880	10888
5	10889	10919	10921	10943	10949	10959	10939	10946	10936	10930	10919	10904	10879	10855	10854	10882	10889
6	10898	10920	10924	10948	10948	10967	10943	10947	10943	10931	10924	10911	10889	10862	10859	10888	10898
7	10906	10919	10925	10944	10948	10972	10946	10950	10942	10932	10924	10916	10895	10868	10871	10891	10906
8	10909	10917	10919	10938	10948	10976	10946	10950	10940	10931	10928	10919	10904	10881	10879	10898	10909
9	10906	10917	10922	10938	10952	10972	10938	10950	10936	10932	10931	10922	10911	10891	10883	10900	10906
10	10909	10913	10923	10931	10953	10968	10930	10946	10937	10935	10932	10924	10916	10894	10888	10900	10909
11	10910	10906	10920	10922	10954	10962	10923	10944	10927	10933	10926	10927	10924	10898	10886	10901	10910
12	10906	10899	10912	10910	10950	10950	10904	10941	10916	10928	10917	10931	10922	10894	10880	10893	10906
13	10896	10889	10902	10892	10944	10939	10892	10932	10898	10925	10902	10928	10913	10890	10880	10892	10896
14	10888	10874	10891	10881	10928	10921	10875	10919	10881	10921	10894	10926	10903	10883	10874	10885	10888
15	10882	10858	10872	10856	10906	10895	10852	10895	10864	10909	10883	10918	10890	10872	10867	10873	10882
16	10868	10838	10853	10828	10875	10869	10827	10859	10843	10887	10870	10903	10874	10859	10858	10862	10868
17	10857	10815	10826	10797	10836	10823	10790	10819	10814	10858	10850	10883	10862	10849	10840	10846	10857
18	10834	10788	10794	10758	10788	10776	10738	10769	10775	10816	10819	10861	10846	10829	10823	10830	10834
19	10809	10751	10748	10706	10731	10719	10681	10717	10728	10769	10782	10834	10823	10810	10799	10806	10809
20	10771	10714	10696	10652	10656	10645	10617	10647	10662	10715	10741	10799	10793	10782	10772	10779	10771
21	10728	10668	10630	10590	10577	10573	10542	10580	10595	10648	10691	10758	10753	10747	10741	10745	10728
22	10666	10607	10560	10510	10494	10489	10455	10492	10518	10574	10633	10693	10699	10699	10701	10701	10666
23	10603	10540	10475	10430	10403	10389	10354	10395	10430	10487	10554	10622	10638	10649	10638	10648	10603
24	10523	10456	10378	10345	10303	10282	10236	10295	10325	10381	10457	10541	10567	10581	10573	10584	10523
25	10432	10363	10280	10237	10189	10150	10120	10180	10208	10272	10361	10451	10483	10506	10498	10501	10432
26	10329	10262	10165	10111	10044	10017	9993	10038	10070	10151	10247	10330	10379	10414	10412	10403	10329
27	10208	10137	10029	9969	9904	9871	9853	9893	9929	10014	10119	10200	10262	10312	10309	10295	10208
28	10075	10002	9885	9822	9754	9712	9697	9738	9780	9862	9962	10056	10127	10176	10188	10179	10075



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29	9932	9847	9735	9655	9585	9543	9511	9568	9610	9679	9799	9898	9981	10037	10038	10045	9932
30	9763	9693	9576	9498	9407	9368	9327	9388	9423	9496	9618	9722	9816	9880	9884	9880	9763
31	9599	9511	9394	9309	9220	9163	9128	9194	9220	9305	9422	9537	9618	9700	9708	9712	9599
32	9402	9324	9204	9108	9014	8992	8962	9007	9019	9109	9203	9313	9419	9501	9514	9527	9402
33	9199	9118	9025	8937	8821	8769	8730	8777	8771	8912	9003	9102	9173	9280	9318	9322	9199
34	9016	8917	8799	8695	8594	8538	8470	8538	8521	8676	8716	8867	8954	9054	9073	9081	9016
35	8781	8655	8569	8453	8349	8284	8211	8276	8253	8391	8439	8601	8696	8809	8864	8874	8781
36	8530	8391	8318	8178	8060	7982	7929	7997	7966	8108	8141	8321	8418	8547	8587	8607	8530
37	8246	8092	8037	7904	7771	7683	7624	7660	7626	7799	7820	7984	8099	8234	8282	8308	8246
38	7927	7801	7734	7574	7462	7372	7309	7336	7297	7466	7440	7649	7742	7918	7972	7978	7927
39	7581	7455	7431	7253	7135	7047	6942	6988	6953	7079	7081	7280	7352	7541	7598	7616	7581
40	7252	7100	7090	6918	6805	6716	6604	6648	6603	6718	6716	6908	6984	7169	7233	7264	7252
41	6877	6740	6724	6582	6459	6348	6263	6302	6255	6362	6343	6531	6598	6791	6855	6885	6877
42	6508	6376	6365	6213	6093	6016	5928	5962	5881	6020	5977	6167	6218	6413	6473	6510	6508
43	6135	6045	5996	5875	5774	5702	5602	5607	5556	5689	5590	5786	5854	6049	6088	6132	6135
44	5796	5678	5679	5533	5465	5393	5253	5290	5241	5343	5249	5455	5510	5691	5697	5784	5796
45	5471	5362	5325	5227	5129	5054	4940	4972	4932	5030	4916	5129	5133	5343	5317	5410	5471
46	5137	5035	5016	4899	4824	4749	4628	4656	4596	4720	4596	4776	4806	5012	4984	5091	5137
47	4819	4732	4689	4582	4518	4437	4318	4310	4302	4403	4290	4455	4487	4717	4625	4768	4819
48	4502	4434	4368	4278	4211	4142	4019	3999	4019	4091	3976	4142	4187	4398	4295	4455	4502
49	4194	4172	4043	4010	3912	3849	3702	3703	3748	3757	3706	3836	3906	4082	4004	4143	4194
50	3907	3878	3733	3713	3597	3547	3431	3421	3472	3473	3456	3518	3649	3791	3715	3867	3907
51	3587	3614	3452	3471	3323	3287	3171	3131	3236	3198	3219	3239	3382	3506	3430	3567	3587
52	3324	3355	3160	3214	3075	3051	2939	2890	3021	2947	3007	2981	3154	3230	3168	3295	3324
53	3066	3117	2900	2971	2834	2834	2696	2660	2813	2713	2782	2735	2943	2975	2924	3053	3066
54	2829	2896	2661	2751	2617	2626	2495	2447	2619	2473	2589	2510	2744	2763	2699	2837	2829
55	2603	2701	2451	2551	2389	2416	2300	2245	2421	2270	2408	2272	2550	2527	2503	2613	2603
56	2404	2492	2248	2339	2192	2237	2118	2036	2249	2075	2233	2072	2379	2325	2290	2411	2404
57	2198	2302	2054	2151	2012	2063	1933	1861	2082	1881	2053	1888	2202	2135	2113	2210	2198
58	2016	2137	1870	1986	1845	1904	1781	1698	1931	1722	1901	1718	2042	1960	1950	2031	2016
59	1848	1976	1714	1827	1695	1742	1640	1543	1787	1570	1758	1562	1892	1787	1797	1857	1848



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60	1703	1834	1556	1685	1536	1601	1504	1405	1644	1437	1621	1424	1762	1641	1655	1708	1703
61	1557	1693	1424	1536	1406	1477	1389	1271	1524	1314	1498	1288	1625	1510	1523	1555	1557
62	1434	1568	1299	1421	1291	1369	1265	1161	1408	1190	1378	1177	1504	1383	1387	1432	1434
63	1306	1449	1183	1296	1176	1243	1168	1063	1297	1089	1271	1076	1384	1269	1281	1300	1306
64	1189	1333	1080	1186	1078	1144	1070	970	1190	996	1171	986	1276	1167	1176	1193	1189
65	1090	1232	988	1094	989	1051	987	880	1100	913	1078	892	1172	1065	1076	1095	1090
66	1005	1127	909	1002	902	964	906	799	1010	837	990	816	1077	982	988	1006	1005
67	925	1037	833	920	832	881	826	735	923	754	903	747	990	905	905	917	925
68	837	944	761	845	751	799	758	669	843	691	826	685	899	830	825	842	837
69	764	862	695	768	687	731	700	611	772	633	752	620	818	753	755	764	764
70	697	792	632	696	630	663	634	555	698	580	687	571	744	688	687	701	697
71	631	720	574	635	576	606	576	506	637	520	622	516	675	624	624	640	631
72	578	651	529	582	521	539	521	453	574	473	563	464	614	564	567	585	578
73	520	589	478	529	458	486	468	410	516	425	507	421	551	509	514	525	520
74	461	522	428	466	413	432	420	368	455	384	448	374	485	453	456	469	461
75	407	460	392	419	372	386	382	326	408	337	396	331	424	405	408	422	407
76	365	412	345	372	328	344	330	291	356	297	352	286	376	355	366	370	365
77	322	358	303	321	282	295	291	253	309	258	298	252	325	316	313	322	322
78	279	312	266	284	239	247	250	212	261	222	246	212	276	264	272	276	279
79	238	257	218	245	207	203	203	173	222	182	192	171	236	220	218	240	238
80	190	201	172	196	172	166	156	149	176	133	148	144	187	164	168	194	190
81	145	143	127	156	129	113	110	111	131	98	100	105	145	120	118	154	145
82	100	104	82	114	85	79	68	64	83	67	55	54	95	84	81	91	100
83	61	66	47	50	47	49	32	30	37	34	32	32	27	51	46	46	61
84	20	32	28	24	12	9	9	22	15	14	12	17	0	13	24	28	20
85	14	15	12	18	0	0	0	0	0	0	14	10	0	0	10	14	14
86	10	9	11	10	0	0	0	0	8	0	0	0	0	0	8	0	10
87	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0
88	0	0	8	0	0	0	0	0	0	7	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0



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91	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
93	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
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97	0	0	8	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
99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	8	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
102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	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
107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	0	0	9	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
110	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
112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	0	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114	0	0	10	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
116	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0
117	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	0	0	8	0	0	0	0	0	8	0	0	0	0	0	0	0	0
119	0	0	8	0	0	0	0	0	0	9	0	0	0	0	0	0	0
120	0	0	9	8	0	0	0	0	0	0	0	0	0	0	0	0	0
121	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0



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122	7	0	0	0	0	0	0	0	0	0	8	0	0	0	0	7
123	0	0	8	0	0	0	0	0	0	9	0	11	0	0	0	0
124	8	11	9	0	0	0	0	0	0	8	8	0	0	0	0	8
125	7	0	11	0	0	0	0	0	0	0	8	0	0	0	0	7
126	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0
127	9	11	10	8	0	0	0	0	0	8	0	9	0	0	0	9
128	12	8	13	0	0	0	0	0	7	0	8	0	0	0	0	12
129	11	10	8	0	0	0	0	0	10	10	8	0	0	0	7	11
130	0	10	13	0	0	0	0	9	10	10	8	0	0	0	0	0
131	12	9	10	10	0	0	0	8	0	12	13	0	0	0	0	12
132	12	9	12	8	0	0	0	11	10	10	12	11	0	0	8	12
133	13	7	12	9	0	0	8	0	9	12	10	0	0	0	9	13
134	11	12	12	0	0	0	0	9	0	14	11	15	0	0	0	11
135	10	13	12	0	0	0	0	0	8	12	9	12	0	0	0	10
136	0	14	14	11	0	0	0	0	12	10	9	9	0	0	13	0
137	12	15	17	12	0	0	10	13	7	13	15	17	0	0	9	12
138	11	14	14	9	0	0	11	10	15	17	13	14	0	0	10	11
139	16	8	14	9	0	0	8	9	12	12	15	16	0	8	10	16
140	17	14	19	16	0	7	9	14	14	15	14	14	0	8	11	17
141	12	13	19	17	0	0	9	14	12	16	17	17	0	0	9	12
142	16	20	19	16	0	0	9	18	15	11	17	17	0	11	13	16
143	17	19	16	11	0	0	12	19	17	15	16	18	0	0	11	17
144	14	12	21	18	0	0	12	14	17	17	18	19	0	9	14	14
145	12	20	20	13	0	0	15	19	16	17	20	20	0	9	13	12
146	19	21	21	21	0	8	13	20	17	17	11	16	8	13	15	19
147	20	19	22	16	0	0	15	15	19	19	18	25	0	10	18	20
148	16	21	20	18	0	0	15	16	15	17	18	20	7	14	16	16
149	19	8	24	17	9	8	15	13	19	18	21	20	0	12	19	19
150	23	23	24	18	0	9	16	23	20	21	21	20	0	12	19	23
151	22	19	26	22	0	11	16	18	21	23	22	21	8	15	20	22
152	22	22	24	22	0	14	15	22	21	20	26	22	9	13	19	22



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153	22	22	22	21	9	12	19	19	22	23	22	21	13	14	21	26	22
154	20	20	27	22	0	11	20	23	22	22	22	23	12	16	15	20	20
155	23	18	26	22	7	10	15	22	18	19	27	20	13	19	21	23	23
156	23	22	21	20	0	10	18	22	18	24	21	23	14	15	22	22	23
157	25	23	24	21	0	13	17	21	25	25	23	24	10	15	19	23	25
158	26	21	25	27	8	12	20	19	26	26	22	22	13	14	19	22	26
159	23	26	27	23	10	16	11	23	25	26	24	17	10	19	25	21	23
160	26	21	28	19	10	13	17	24	21	22	26	18	12	19	24	22	26
161	24	25	26	21	9	13	20	23	23	25	29	27	16	19	23	20	24
162	28	17	30	20	0	16	21	24	25	20	28	23	10	19	21	24	28
163	26	24	25	27	11	15	24	23	26	28	30	25	16	17	18	23	26
164	25	25	26	28	0	18	18	25	27	25	24	28	16	16	15	16	25
165	30	27	10	29	9	14	18	25	29	26	27	29	12	17	21	28	30
166	26	28	30	26	9	16	22	24	25	25	25	32	16	19	26	26	26
167	27	24	28	20	10	16	23	23	26	26	29	27	16	22	23	27	27
168	26	30	32	26	9	14	20	25	25	16	27	27	16	22	24	23	26
169	23	28	26	22	10	19	25	27	28	28	30	22	13	22	26	23	23
170	31	26	31	27	12	18	19	32	29	29	29	32	18	16	21	26	31
171	27	28	25	25	10	19	25	27	30	29	27	27	17	22	20	24	27
172	29	28	31	25	12	17	23	22	27	28	21	28	16	19	27	26	29
173	29	29	29	21	8	16	21	28	28	28	28	26	16	25	26	20	29
174	30	24	30	31	10	15	25	26	28	31	27	20	16	21	25	14	30
175	28	30	31	24	8	17	25	24	29	26	28	28	16	17	25	21	28
176	26	28	24	29	15	16	22	31	26	25	25	23	15	21	21	24	26
177	27	25	26	21	12	16	24	26	28	26	30	26	18	15	24	18	27
178	21	29	30	27	12	18	25	21	25	26	23	28	15	27	25	20	21
179	17	28	28	28	15	16	23	16	22	26	22	29	16	18	25	22	17
180	29	27	22	28	12	19	20	24	23	29	27	22	18	20	24	23	29



**UGR**

**UGR Table - Corrected**

Reflectances

Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

Room Size

UGR Viewed Crosswise

UGR Viewed Endwise

X=2H	Y=2H	25.1	26.5	25.5	26.8	27.1	24.6	26.0	25.0	26.3	26.6
	3H	25.8	27.0	26.2	27.4	27.7	25.3	26.5	25.7	26.8	27.2
	4H	26.0	27.2	26.4	27.5	27.9	25.5	26.6	25.9	27.0	27.4
	6H	26.1	27.2	26.5	27.5	27.9	25.6	26.6	26.0	27.0	27.4
	8H	26.1	27.1	26.5	27.5	27.9	25.5	26.5	26.0	26.9	27.3
	12H	26.1	27.0	26.5	27.4	27.8	25.5	26.4	25.9	26.8	27.3
4H	2H	25.3	26.4	25.7	26.7	27.1	24.8	25.9	25.2	26.3	26.6
	3H	26.2	27.1	26.6	27.5	27.9	25.7	26.6	26.1	27.0	27.4
	4H	26.5	27.3	26.9	27.7	28.2	25.9	26.8	26.4	27.2	27.6
	6H	26.6	27.3	27.1	27.8	28.2	26.1	26.8	26.5	27.2	27.7
	8H	26.6	27.3	27.1	27.7	28.2	26.1	26.7	26.5	27.2	27.6
	12H	26.6	27.2	27.0	27.6	28.1	26.0	26.6	26.5	27.1	27.6
8H	4H	26.5	27.2	27.0	27.6	28.1	26.0	26.6	26.5	27.1	27.6
	6H	26.7	27.2	27.2	27.7	28.2	26.1	26.7	26.6	27.2	27.7
	8H	26.7	27.2	27.2	27.7	28.2	26.1	26.6	26.7	27.1	27.6
	12H	26.7	27.1	27.2	27.6	28.1	26.1	26.5	26.6	27.0	27.6
12H	4H	26.5	27.1	27.0	27.5	28.0	25.9	26.5	26.4	27.0	27.5
	6H	26.7	27.1	27.2	27.6	28.2	26.1	26.6	26.7	27.1	27.6
	8H	26.7	27.1	27.2	27.6	28.2	26.1	26.6	26.6	27.0	27.6

Maximum UGR = 28.2



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## 2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

<b>Test date</b>	2021-01-26	<b>Test Ambient:</b>	25.2 ° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	BLT-HB05B-150WS1BT2D1-WH30/40/50 0(Tested at 50% CCT Setting)		

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC210102	120.0	60	1.230	147.49	0.999	3.61
6E-D1	277.0	60	0.529	140.26	0.958	9.22
<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	84	R9	18
Frequency (Hz)	60	R2	91	R10	79
CCT (K)	3748	R3	96	R11	84
Duv	-0.0022	R4	84	R12	66
Chromaticity (x, y)	x=0.3903 y=0.3778	R5	84	R13	86
Chromaticity (u', v')	u(u')=0.2312 v'(v')=0.5035	R6	88	R14	98
Color Rendering Index (CRI)	85	R7	85	R15	78
R9	18	R8	66	--	--
Rf	85	--	--	--	--
Rg	97	--	--	--	--
Rcs,h1(%)	-11	--	--	--	--

### 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)	23281.9	22506.5	$\geq 10000(-10\%)$
Luminous Efficacy (lm/W)	157.85	160.46	Premium: $\geq 135(-3\%)$
Most worst Luminous/Highest	152.60		

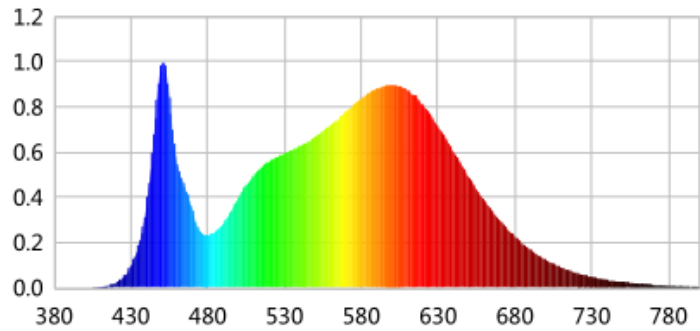
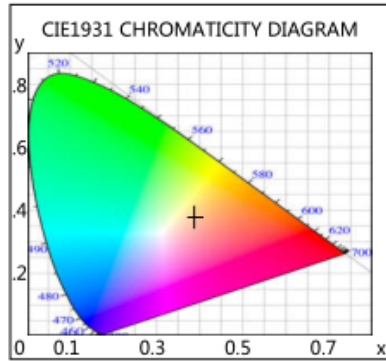




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### Spectral Power Distribution & Chromaticity Diagram



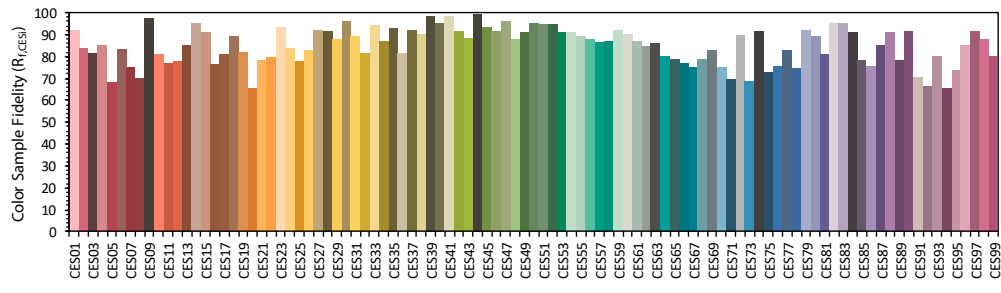
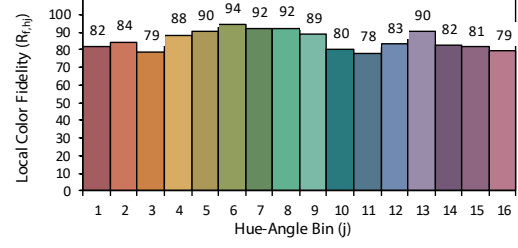
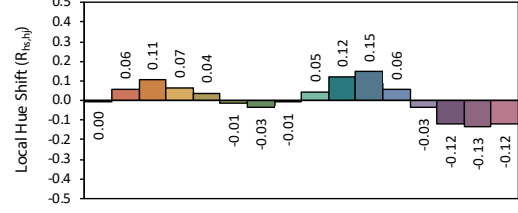
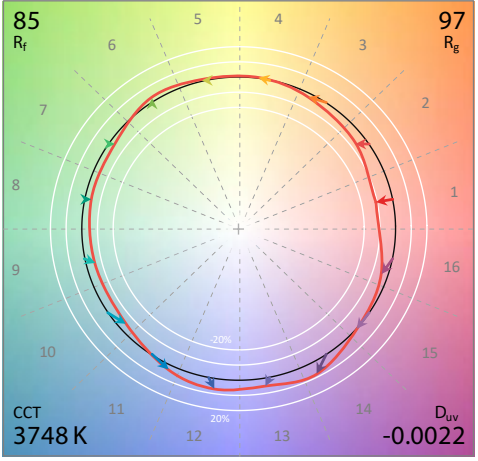
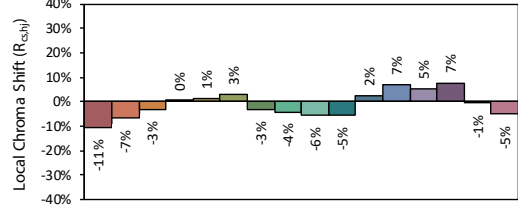
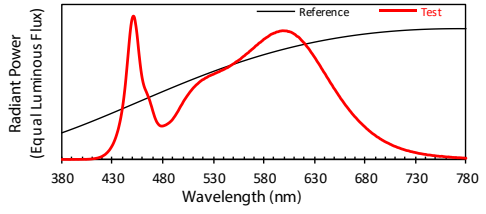
WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0006	0.3020	525	0.5788	270.0424	670	0.2984	139.2379
385	0.0004	0.1823	530	0.5940	277.1442	675	0.2607	121.6219
390	0.0007	0.3405	535	0.6100	284.6061	680	0.2274	106.1044
395	0.0006	0.3031	540	0.6266	292.3531	685	0.1960	91.4490
400	0.0010	0.4652	545	0.6449	300.9136	690	0.1692	78.9557
405	0.0016	0.7233	550	0.6673	311.3534	695	0.1442	67.2743
410	0.0038	1.7907	555	0.6917	322.7219	700	0.1239	57.8154
415	0.0095	4.4297	560	0.7197	335.8035	705	0.1062	49.5696
420	0.0218	10.1889	565	0.7468	348.4263	710	0.0910	42.4466
425	0.0479	22.3688	570	0.7780	363.0124	715	0.0774	36.1342
430	0.0972	45.3472	575	0.8101	377.9785	720	0.0656	30.6210
435	0.1882	87.8300	580	0.8386	391.2637	725	0.0557	25.9774
440	0.3558	166.0250	585	0.8617	402.0369	730	0.0482	22.4789
445	0.6778	316.2424	590	0.8813	411.1858	735	0.0409	19.0937
450	0.9895	461.6936	595	0.8929	416.6058	740	0.0354	16.5197
455	0.8393	391.5984	600	0.8973	418.6472	745	0.0303	14.1486
460	0.5533	258.1760	605	0.8923	416.3372	750	0.0252	11.7418
465	0.4491	209.5633	610	0.8750	408.2687	755	0.0219	10.2353
470	0.3411	159.1607	615	0.8494	396.3317	760	0.0181	8.4320
475	0.2516	117.4066	620	0.8120	378.8507	765	0.0164	7.6392
480	0.2334	108.8966	625	0.7667	357.7457	770	0.0134	6.2565
485	0.2495	116.4141	630	0.7151	333.6319	775	0.0117	5.4392
490	0.2824	131.7692	635	0.6605	308.1589	780	0.0089	4.1737
495	0.3360	156.7662	640	0.6035	281.5610	785	0.0085	3.9485
500	0.3985	185.9309	645	0.5459	254.6900	790	0.0069	3.2262
505	0.4519	210.8354	650	0.4910	229.0977	795	0.0053	2.4576
510	0.4973	232.0092	655	0.4377	204.2106	800	0.0044	2.0321
515	0.5312	247.8550	660	0.3867	180.4459			
520	0.5577	260.2108	665	0.3406	158.9127			



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ANSI / IES TM-30-18 Color Rendition Report

<b>Source:</b> L128-3080RA35003H1	<b>Manufacturer:</b> Beyond LED Technology
<b>Date:</b> 2021/1/26	<b>Model:</b> BLT-HB05B-150WS1BT2D1-WH30/40/50



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

$x$	<b>0.3903</b>	CIE 13.3-1995 (CRI) $R_a$ 85 $R_9$ 18
$y$	<b>0.3778</b>	
$u'$	<b>0.2312</b>	
$v'$	<b>0.5035</b>	

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>	2021-01-26	<b>Test Ambient:</b>	25.2 ° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	BLT-HB05B-150WS1BT2D1-WH30/40/50 0(Tested at 100% CCT Setting)		

#### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC210102	120.0	60	1.276	152.98	0.999	3.87
6E-D1	277.0	60	0.551	146.26	0.959	8.91
<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	80	R9	8
Frequency (Hz)	60	R2	86	R10	67
CCT (K)	4851	R3	91	R11	80
Duv	0.0034	R4	82	R12	55
Chromaticity (x, y)	x=0.3503 y=0.3625	R5	80	R13	81
Chromaticity (u', v')	u(u')=0.2107 v'(v')=0.4906	R6	81	R14	95
Color Rendering Index (CRI)	82	R7	88	R15	75
R9	8	R8	68	--	--
Rf	83	--	--	--	--
Rg	97	--	--	--	--
Rcs,h1(%)	-12	--	--	--	--

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

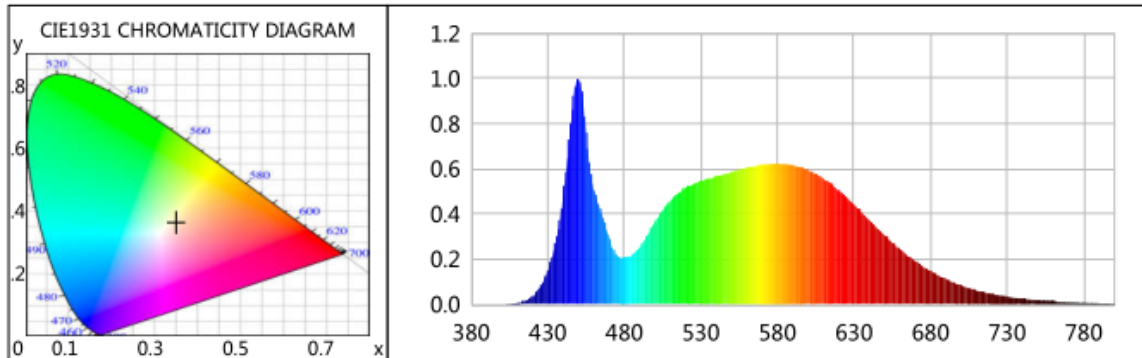
Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	23084.8	22210.7	$\geq 10000(-10\%)$
Luminous Efficacy (lm/W)	150.90	151.86	Premium: $\geq 135(-3\%)$
Most worst Luminous/Highest	145.19		



Certificate#4810.01

Report No.:  
BLC2101026E-D-PL

### 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	0.2034	525	0.5329	311.2625	670	0.1916	111.9210
385	0.0005	0.2750	530	0.5454	318.5225	675	0.1685	98.3959
390	0.0004	0.2523	535	0.5573	325.5070	680	0.1480	86.4473
395	0.0004	0.2599	540	0.5680	331.7522	685	0.1297	75.7725
400	0.0011	0.6689	545	0.5759	336.3403	690	0.1129	65.9369
405	0.0024	1.4260	550	0.5859	342.2218	695	0.0967	56.5017
410	0.0067	3.9262	555	0.5963	348.2682	700	0.0839	49.0153
415	0.0165	9.6231	560	0.6052	353.4789	705	0.0730	42.6429
420	0.0370	21.6000	565	0.6121	357.5032	710	0.0626	36.5807
425	0.0768	44.8483	570	0.6180	360.9232	715	0.0534	31.1757
430	0.1489	86.9411	575	0.6224	363.4947	720	0.0460	26.8635
435	0.2709	158.2046	580	0.6238	364.3465	725	0.0403	23.5500
440	0.4722	275.7793	585	0.6210	362.7014	730	0.0342	19.9910
445	0.8001	467.2972	590	0.6168	360.2443	735	0.0290	16.9158
450	1.0000	584.0604	595	0.6071	354.5771	740	0.0253	14.8018
455	0.7610	444.4652	600	0.5955	347.8091	745	0.0217	12.6603
460	0.5084	296.9255	605	0.5788	338.0536	750	0.0185	10.8023
465	0.4040	235.9318	610	0.5585	326.2042	755	0.0154	8.9906
470	0.2921	170.6119	615	0.5342	312.0131	760	0.0138	8.0867
475	0.2188	127.7796	620	0.5078	296.5956	765	0.0117	6.8055
480	0.2070	120.8891	625	0.4754	277.6644	770	0.0098	5.6973
485	0.2205	128.7711	630	0.4417	258.0020	775	0.0085	4.9693
490	0.2529	147.7084	635	0.4074	237.9449	780	0.0076	4.4570
495	0.3062	178.8270	640	0.3734	218.0696	785	0.0061	3.5736
500	0.3643	212.7921	645	0.3386	197.7439	790	0.0051	2.9961
505	0.4151	242.4259	650	0.3076	179.6388	795	0.0040	2.3137
510	0.4584	267.7586	655	0.2744	160.2687	800	0.0039	2.2546
515	0.4914	286.9899	660	0.2444	142.7270			
520	0.5157	301.2268	665	0.2175	127.0298			



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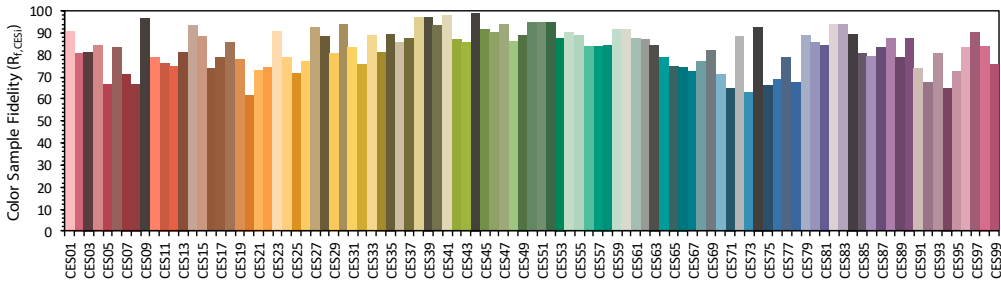
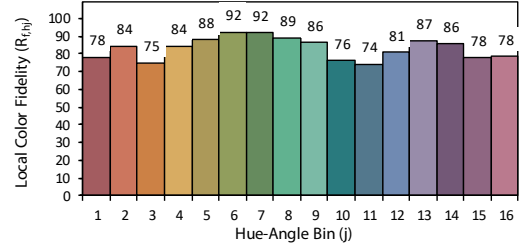
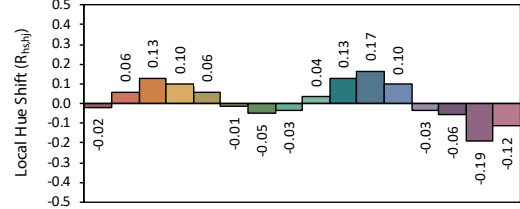
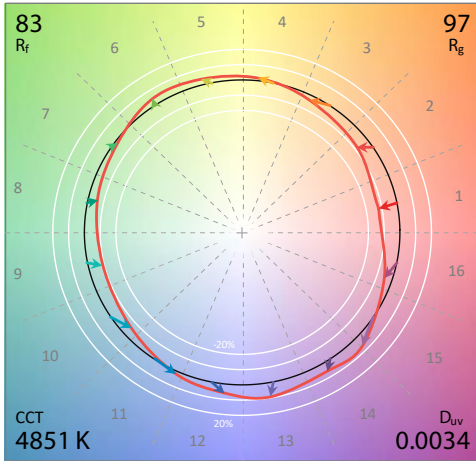
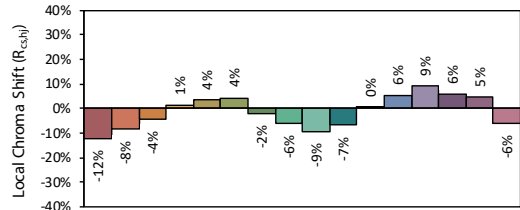
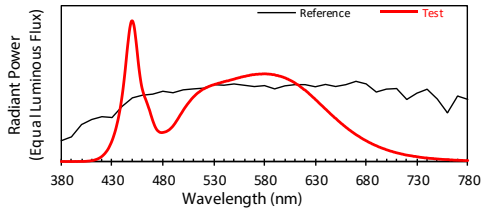
ANSI / IES TM 30- 18 Col or Renditi on Report

**Source:** L128-3080RA35003H1

**Date:** 2021/1/26

**Manufacturer:** Beyond LED Technology

**Model:** BLT-HB05B-150WS1BT2D1-WH30/40/50



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

$x$     **0.3503**  
 $y$     **0.3625**  
 $u'$    **0.2107**  
 $v'$    **0.4906**

CIE 13.3-1995  
 (CRI)  
 $R_a$     82  
 $R_g$     8

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



Report No.:  
BLC2101026E-D-PL

### 3. Test Equipment

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

Expand Uncertainty:  
Photometric Measurement (Sphere): 2.08%, k=2  
Chromaticity Measurement(Sphere):25.6K, k=2  
Photometric Measurement(Goniophotometer):2.645%, k=2

\*\*\*\*\* END OF REPORT \*\*\*\*\*