



Report No.:
BLC2012004E-D-CP

LM-79-08 Test Report

For

Beyond LED Technology

(Brand Name: Beyond LED Technology)

High-Bay Luminaires (Commercial and Industrial)

Model name(s): BLT-HB11-240WH2BT2A1-BH50

Remark: "a" can be any two letters; "b" represent lamp colors; "b" can be "10SP", "20SP" or blank for Surge-Protective Device provided or not; "c" can be "M", "P" or blank for Motion Sensor, PIR sensor provided or not; "d" can be any digits to represent CCT; can be 35=3500K; 40=4000K; 45=4500K; 50=5000K; 57=5700K.

Representative (Tested) Model:
BLT-HB11-240WH2BT2A1-BH50

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

Test & Report By:

Lily Yang

Engineer: Lily Yang

Date:2021-01-11

Review By:

Jason Luo

Manager: Jason Luo

Remark: This report is multiple listed report to BLC2012004E-D. All the construction and performance are the same except dimming function of LED driver and driver model number.



1.1 Product Information:

Model Number	BLT-HB11-240WH2BT2A1-BH50	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	High-Bay Luminaires (Commercial and Industrial)	
Rated Voltage / Frequency	120-277Vac, 50/60 Hz	
Nominal Power	200W	
Rated Initial Lamp Lumen	--	
Declared CCT	3500K, 4000K, 4500K, 5000K, 5700K	
Dimmable or Not	Yes	
Dimming type	Continuous Dimming	
LED Manufacturer	Lumileds Holding B.V.	
LED Model	L128-XX80RA35002U1	
Sample Number	BLC2012004E-D1(3500K),D2(4000K), D3(5700K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Photo





Certificate#4810.01

Report No.:
BLC2012004E-D-CP

1.2 Test Specifications:

Date of Receipt	2020-10-18
Date of Test	2020-12-03
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	2020-12-03	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT-HB11-240WH2BT2A1-BH50		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC201200	120.0	60	2.021	241.26	0.995	10.75
4E-D1	277.0	60	0.922	240.36	0.941	13.98
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

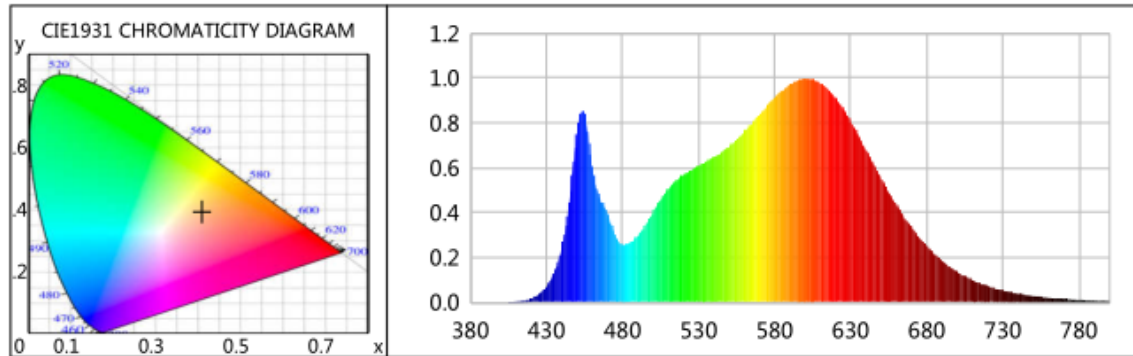
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	83	R9	13
Frequency (Hz)	60	R2	92	R10	81
CCT (K)	3470	R3	97	R11	82
Duv	-0.0001	R4	82	R12	67
Chromaticity (x, y)	x=0.4068 y=0.3912	R5	83	R13	85
Chromaticity (u', v')	u(u')=0.2365 v'=0.5117	R6	90	R14	99
Color Rendering Index (CRI)	84	R7	84	R15	76
R9	13	R8	63	--	--
Rf	85	--	--	--	--
Rg	95	--	--	--	--
Rcs,h1(%)	-11	--	--	--	--

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)	32859.6	32551.9	>=10000(-10%)
Luminous Efficacy (lm/W)	136.20	135.43	Premium: >= 135(-3%)
Most worst Luminous/Highest	134.92		



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	0.2559	525	0.5893	362.9080	670	0.3322	204.5710
385	0.0007	0.4052	530	0.6080	374.4372	675	0.2890	177.9876
390	0.0002	0.1230	535	0.6265	385.8023	680	0.2508	154.4496
395	0.0004	0.2405	540	0.6486	399.4691	685	0.2157	132.8621
400	0.0009	0.5818	545	0.6696	412.3556	690	0.1855	114.2695
405	0.0015	0.9007	550	0.6944	427.6337	695	0.1590	97.9025
410	0.0036	2.2134	555	0.7262	447.2434	700	0.1362	83.8700
415	0.0082	5.0692	560	0.7601	468.0785	705	0.1166	71.8321
420	0.0175	10.7905	565	0.7975	491.1498	710	0.0993	61.1703
425	0.0363	22.3592	570	0.8358	514.7119	715	0.0843	51.9314
430	0.0702	43.2472	575	0.8770	540.0862	720	0.0711	43.7957
435	0.1306	80.4416	580	0.9127	562.0890	725	0.0619	38.1117
440	0.2373	146.1614	585	0.9432	580.8482	730	0.0519	31.9815
445	0.4423	272.4206	590	0.9715	598.2730	735	0.0450	27.7033
450	0.7543	464.5193	595	0.9898	609.5707	740	0.0375	23.0970
455	0.8423	518.7587	600	0.9986	614.9851	745	0.0330	20.2934
460	0.6088	374.9087	605	0.9934	611.8040	750	0.0277	17.0841
465	0.4670	287.5938	610	0.9786	602.6918	755	0.0239	14.6931
470	0.3969	244.4317	615	0.9504	585.3231	760	0.0203	12.4937
475	0.3023	186.1448	620	0.9118	561.5564	765	0.0164	10.0820
480	0.2572	158.4205	625	0.8626	531.2493	770	0.0158	9.7024
485	0.2667	164.2416	630	0.8065	496.6762	775	0.0124	7.6308
490	0.2943	181.2501	635	0.7457	459.2191	780	0.0113	6.9703
495	0.3411	210.0743	640	0.6800	418.7530	785	0.0083	5.1102
500	0.3990	245.7242	645	0.6158	379.2582	790	0.0084	5.1658
505	0.4550	280.1932	650	0.5527	340.3606	795	0.0062	3.8190
510	0.5033	309.9334	655	0.4908	302.2733	800	0.0048	2.9496
515	0.5402	332.6839	660	0.4341	267.3584			
520	0.5669	349.1161	665	0.3794	233.6617			



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TM30

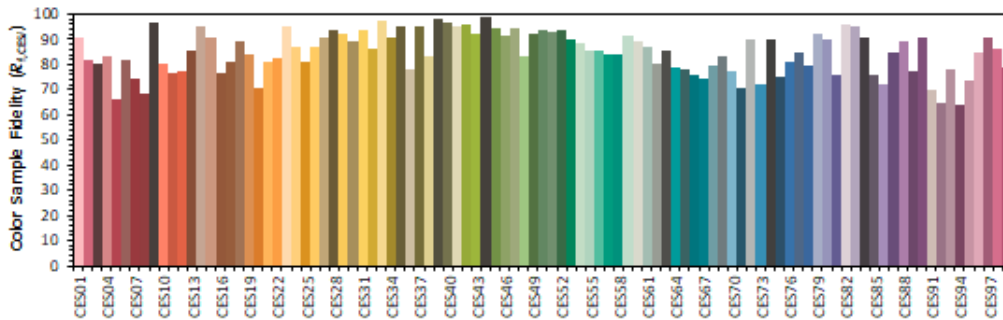
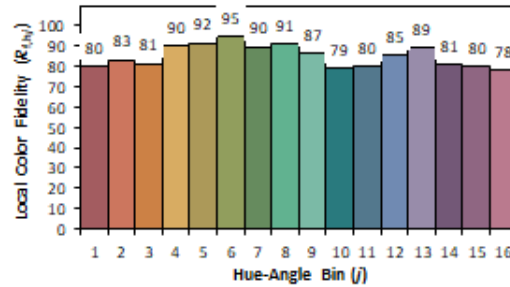
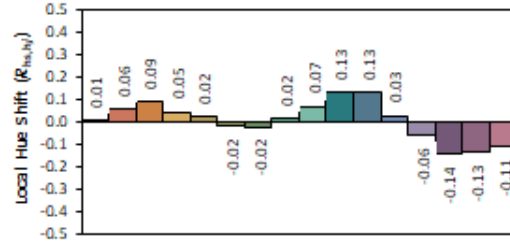
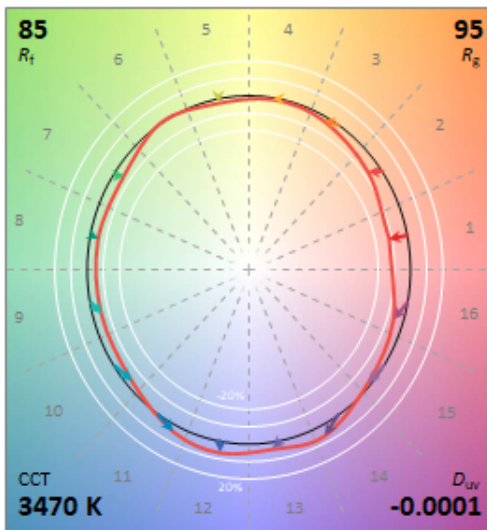
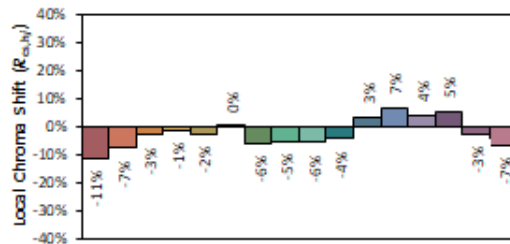
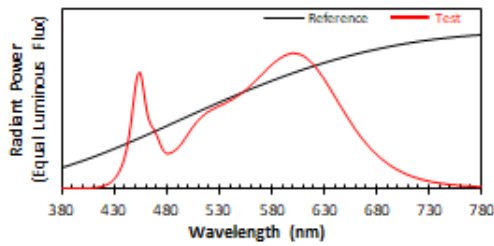
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35002U1

Manufacturer: Beyond LED Technology

Date: 2020/12/3

Model: BLT-HB11-240WH2BT2A1-BH50



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

x 0.4068
 y 0.3912
 u' 0.2365
 v' 0.5117

CIE 13.3-1995 (CRI)
 R_a 84
 R_g 13



2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2020-12-03	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT-HB11-240WH2BT2A1-BH50		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC201200	120.0	60	2.025	241.35	0.993	10.8
4E-D2	277.0	60	0.937	240.46	0.926	13.39
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

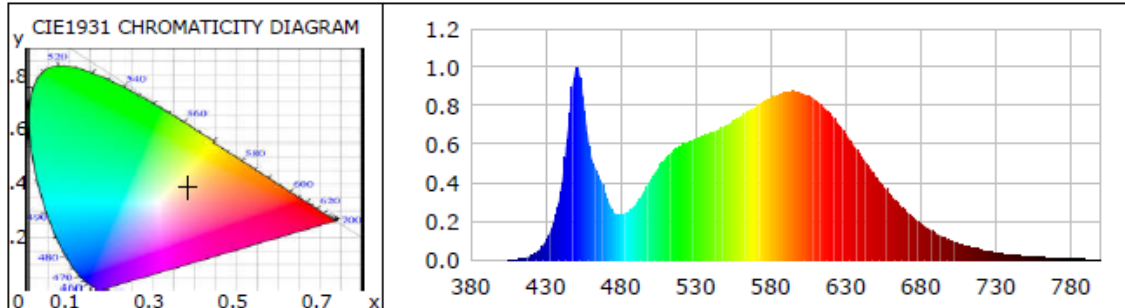
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	5
Frequency (Hz)	60	R2	89	R10	73
CCT (K)	3981	R3	95	R11	81
Duv	0.0022	R4	82	R12	60
Chromaticity (x, y)	x=0.3828 y=0.3829	R5	81	R13	82
Chromaticity (u', v')	u(u')=0.2242 v'(v')=0.5046	R6	85	R14	97
Color Rendering Index (CRI)	83	R7	86	R15	74
R9	5	R8	63	--	--
Rf	84	--	--	--	--
Rg	95	--	--	--	--
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)	34016.2	33732.5	>=10000(-10%)
Luminous Efficacy (lm/W)	140.94	140.28	Premium: >= 135(-3%)
Most worst Luminous/Highest	139.77		
Zonal lumens in the 20-50° (%)	63.60	--	>=30(-10)
Beam Angle (°)	87.8	--	--
Center Beam Candle Power (cd)	17012	--	--



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	0.1211	525	0.6126	412.8025	670	0.2560	172.4829
385	0.0008	0.5505	530	0.6282	423.3574	675	0.2221	149.6627
390	0.0008	0.5624	535	0.6437	433.7966	680	0.1921	129.4742
395	0.0004	0.2806	540	0.6617	445.8849	685	0.1650	111.1965
400	0.0005	0.3371	545	0.6775	456.5759	690	0.1404	94.5999
405	0.0017	1.1297	550	0.6975	470.0125	695	0.1211	81.5742
410	0.0040	2.6746	555	0.7207	485.6574	700	0.1045	70.3973
415	0.0100	6.7505	560	0.7462	502.8677	705	0.0879	59.2505
420	0.0229	15.4579	565	0.7721	520.3051	710	0.0750	50.5476
425	0.0489	32.9585	570	0.7957	536.2184	715	0.0630	42.4431
430	0.0990	66.6820	575	0.8229	554.5412	720	0.0540	36.3981
435	0.1913	128.9099	580	0.8425	567.7329	725	0.0464	31.2931
440	0.3597	242.3582	585	0.8582	578.3012	730	0.0394	26.5378
445	0.6835	460.5837	590	0.8697	586.0563	735	0.0332	22.3534
450	0.9916	668.2093	595	0.8745	589.3189	740	0.0292	19.6982
455	0.8464	570.3936	600	0.8686	585.3537	745	0.0245	16.5225
460	0.5506	371.0608	605	0.8532	574.9356	750	0.0213	14.3622
465	0.4474	301.4752	610	0.8311	560.0689	755	0.0181	12.1676
470	0.3444	232.0775	615	0.7974	537.3376	760	0.0151	10.2017
475	0.2540	171.1749	620	0.7567	509.8855	765	0.0126	8.5178
480	0.2353	158.5482	625	0.7086	477.4984	770	0.0106	7.1654
485	0.2538	171.0171	630	0.6552	441.4965	775	0.0095	6.3848
490	0.2898	195.3114	635	0.6010	404.9968	780	0.0077	5.1640
495	0.3494	235.4348	640	0.5435	366.2753	785	0.0062	4.1675
500	0.4186	282.1028	645	0.4878	328.6973	790	0.0058	3.9233
505	0.4772	321.5714	650	0.4348	293.0256	795	0.0041	2.7454
510	0.5292	356.5846	655	0.3843	258.9700	800	0.0044	2.9375
515	0.5660	381.4415	660	0.3367	226.9236			
520	0.5923	399.1316	665	0.2953	199.0186			



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Report No.: BLC2012004E-D-CP

TM30

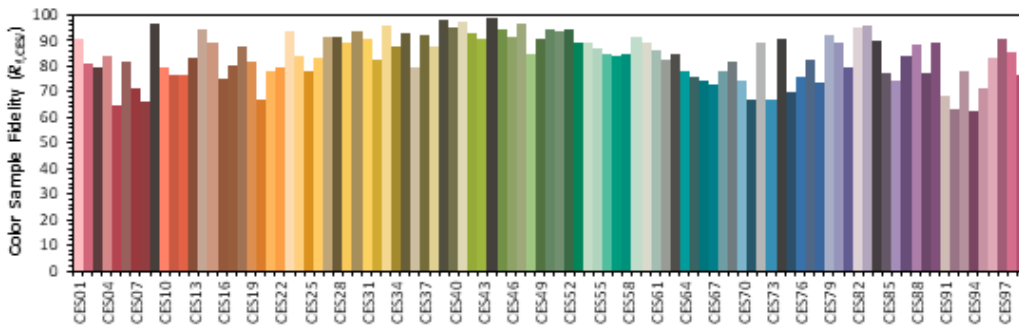
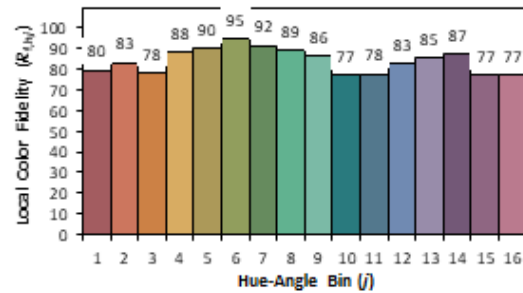
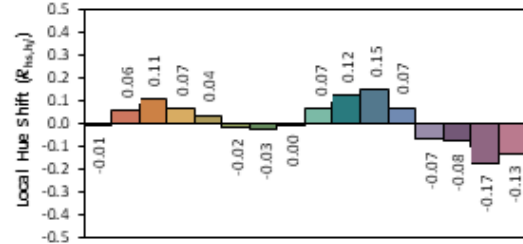
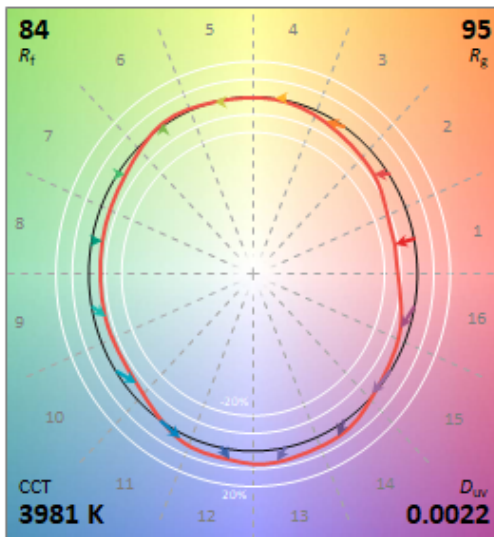
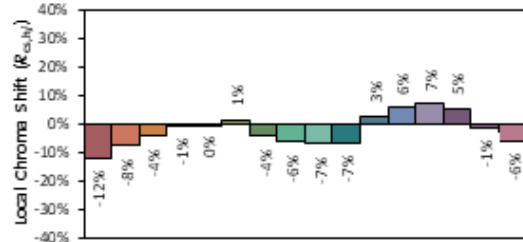
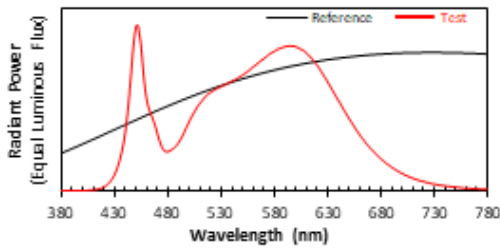
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35002U1

Date: 2020/12/3

Manufacturer: Beyond LED Technology

Model: BLT-HB11-240WH2BT2A1-BH50



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

x 0.3828
 y 0.3829
 u' 0.2242
 v' 0.5046

CIE 13.3-1995 (CRI)	
R _a	83
R _g	5



Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% La[β]	% Luminaire
0-30	13,841.6	40.7%	40.7%
0-40	21,958.8	64.6%	64.6%
0-60	31,431.8	92.4%	92.4%
60-90	2,445.7	7.2%	7.2%
70-100	835.9	2.5%	2.5%
90-120	41.5	0.1%	0.1%
0-90	33,877.5	99.6%	99.6%
90-180	133.8	0.4%	0.4%
0-180	34,011.3	100%	100%

Lumens Per Zone

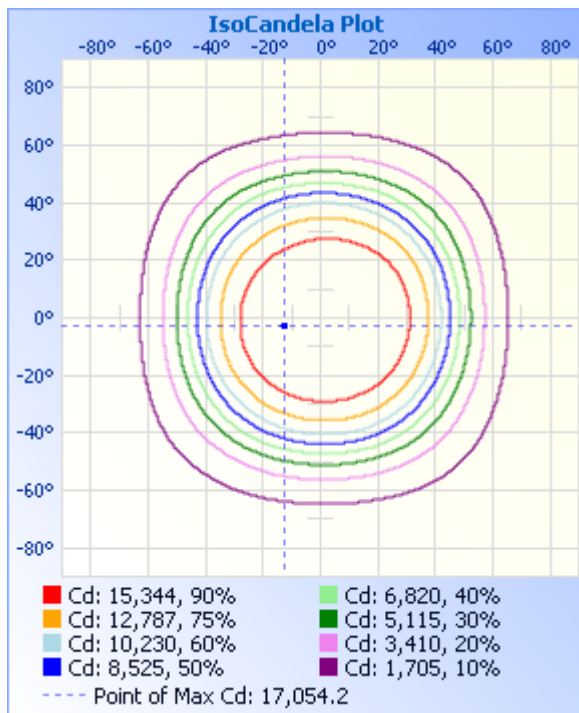
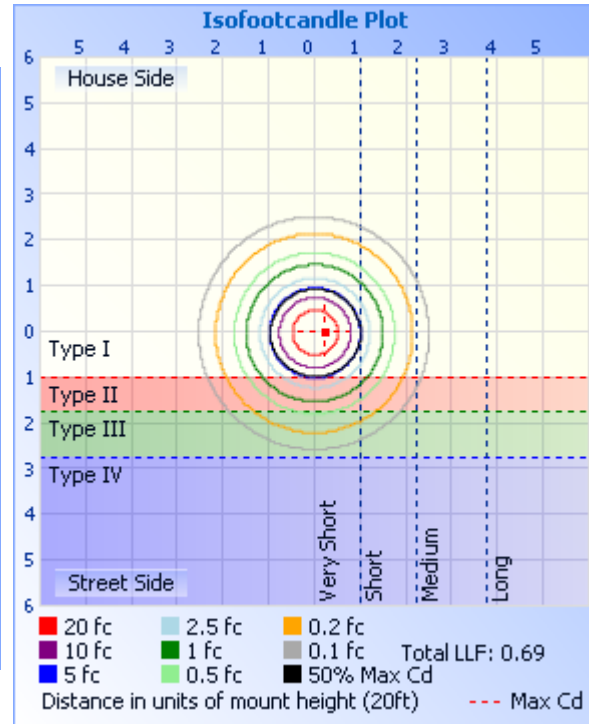
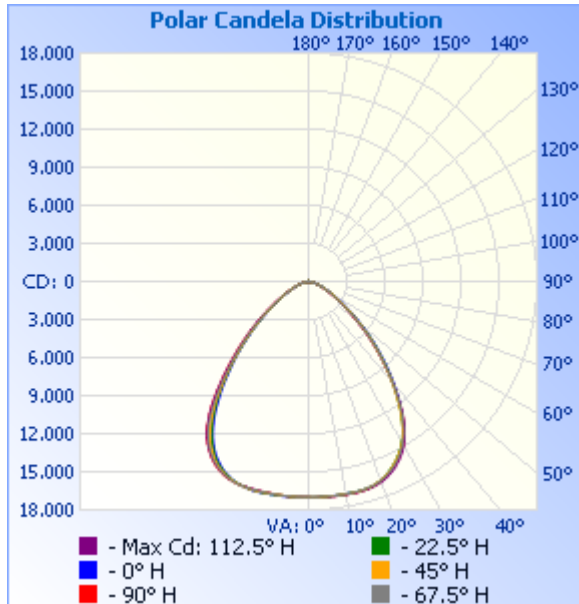
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	1,622.0	4.8%	90-100	14.1	0%
10-20	4,800.6	14.1%	100-110	13.5	0%
20-30	7,421.0	21.8%	110-120	13.8	0%
30-40	8,115.2	23.9%	120-130	15.6	0%
40-50	6,072.6	17.9%	130-140	19.1	0.1%
50-60	3,400.3	10.0%	140-150	21.0	0.1%
60-70	1,624.0	4.8%	150-160	18.9	0.1%
70-80	679.7	2.0%	160-170	13.2	0%
80-90	142.0	0.4%	170-180	4.6	0%



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Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
17.0ft	58.9 fc	30.5 ft	32.7 ft
34.0ft	14.7 fc	60.9 ft	65.5 ft
51.0ft	6.5 fc	91.4 ft	98.2 ft
68.0ft	3.7 fc	121.9 ft	130.9 ft
85.0ft	2.4 fc	152.3 ft	163.7 ft
102.0ft	1.6 fc	182.8 ft	196.4 ft

■ Vert. Spread: 83.7°
■ 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	17012	17012	17012	17012	17012	17012	17012	17012	17012	17012	17012	17012	17012	17012	17012	17012	17012
1	17012	17008	17016	17004	17007	17016	17008	17020	17008	17008	17013	17012	17011	17012	17011	16993	17012
2	17015	17002	17004	16999	17024	17014	17011	17014	17011	17002	17004	17006	17007	17006	17013	16994	17015
3	17004	16989	17007	16988	17014	17018	17007	17015	17006	17000	17000	17004	17008	17007	17007	16986	17004
4	16997	16995	16999	16985	17016	17015	17000	17011	17018	16994	16989	17000	17003	16997	16998	16973	16997
5	16998	16984	16995	16991	17022	17018	17000	17005	17012	16991	16990	16975	16990	17000	16970	16969	16998
6	16993	16986	16985	17000	17025	17026	17003	16992	17011	16985	16981	16971	16976	16988	16964	16969	16993
7	16977	16983	16983	17005	17032	17026	17003	16992	17013	17002	16962	16969	16984	16984	16951	16962	16977
8	16979	16985	16989	17005	17036	17039	17004	16994	17024	16995	16960	16967	16975	16975	16945	16955	16979
9	16981	16978	16982	17000	17043	17033	17014	17007	17012	17002	16960	16967	16957	16965	16946	16954	16981
10	16972	16979	16999	16997	17037	17040	17018	17020	17007	17007	16956	16956	16944	16947	16935	16956	16972
11	16978	16980	16991	17012	17028	17038	17022	17034	17029	17004	16964	16954	16939	16939	16949	16958	16978
12	16982	16979	16993	16996	17043	17054	17023	17035	17046	17021	16998	16972	16944	16932	16945	16964	16982
13	16977	16971	16992	16980	17046	17053	17037	17032	17039	17018	17001	16969	16943	16937	16942	16971	16977
14	16970	16969	16983	16975	17031	17034	17044	17036	17041	17008	17005	16962	16928	16929	16934	16967	16970
15	16959	16945	16959	16946	17014	17016	17033	17019	17034	16998	17001	16963	16931	16928	16934	16961	16959
16	16927	16907	16922	16911	16990	17008	17021	17008	17006	16981	16989	16968	16939	16920	16928	16938	16927
17	16894	16881	16881	16876	16951	16969	16985	16981	16969	16950	16968	16954	16919	16912	16916	16914	16894
18	16848	16814	16798	16828	16909	16920	16948	16948	16925	16916	16930	16932	16909	16909	16890	16878	16848
19	16776	16732	16732	16752	16837	16860	16866	16884	16874	16864	16892	16915	16888	16884	16852	16824	16776
20	16682	16638	16630	16668	16745	16796	16794	16811	16802	16809	16848	16873	16861	16852	16810	16754	16682
21	16572	16528	16523	16570	16646	16697	16702	16711	16718	16735	16778	16828	16826	16797	16753	16660	16572
22	16456	16370	16392	16442	16526	16585	16594	16602	16599	16634	16701	16745	16779	16733	16678	16550	16456
23	16323	16214	16242	16314	16387	16444	16457	16433	16474	16519	16599	16669	16712	16646	16574	16431	16323
24	16161	16051	16071	16159	16239	16307	16306	16275	16334	16383	16473	16553	16620	16554	16452	16286	16161
25	15978	15871	15884	15974	16076	16141	16131	16099	16160	16242	16344	16438	16501	16439	16310	16131	15978
26	15776	15673	15682	15788	15867	15937	15948	15915	15962	16075	16189	16274	16360	16306	16165	15942	15776
27	15565	15441	15476	15578	15667	15735	15735	15707	15745	15876	16010	16112	16197	16140	15986	15735	15565
28	15333	15200	15232	15360	15446	15508	15503	15471	15524	15655	15798	15934	16008	15970	15794	15528	15333
29	15093	14950	14995	15081	15194	15267	15208	15210	15255	15399	15536	15714	15817	15764	15578	15306	15093



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30	14791	14664	14692	14807	14921	14981	14933	14914	14958	15074	15281	15477	15570	15543	15322	15023	14791
31	14500	14340	14363	14504	14609	14619	14610	14582	14629	14767	14993	15207	15328	15289	15054	14735	14500
32	14131	13983	14015	14166	14239	14282	14253	14181	14253	14427	14667	14878	15038	15008	14762	14395	14131
33	13734	13576	13576	13768	13843	13888	13844	13752	13846	14037	14296	14536	14724	14679	14430	14064	13734
34	13299	13147	13141	13341	13416	13452	13402	13292	13404	13619	13841	14154	14366	14336	14062	13633	13299
35	12881	12701	12680	12883	12947	12969	12847	12787	12933	13156	13381	13708	13961	13898	13591	13179	12881
36	12384	12238	12200	12363	12449	12414	12308	12275	12438	12626	12892	13234	13463	13419	13121	12700	12384
37	11901	11719	11691	11859	11870	11881	11742	11749	11870	12109	12363	12646	12962	12938	12582	12143	11901
38	11447	11230	11165	11333	11344	11337	11181	11153	11355	11581	11805	12077	12450	12355	12060	11625	11447
39	10899	10729	10695	10798	10800	10781	10579	10620	10823	11042	11175	11484	11842	11772	11441	11075	10899
40	10428	10231	10168	10249	10260	10227	10028	10091	10299	10491	10605	10888	11225	11166	10804	10539	10428
41	9912	9745	9628	9730	9712	9686	9501	9579	9773	9884	10038	10293	10612	10564	10209	9985	9912
42	9396	9274	9128	9166	9194	9092	9001	9068	9218	9359	9485	9709	10068	9981	9680	9497	9396
43	8908	8803	8608	8661	8641	8579	8519	8534	8728	8856	8958	9116	9470	9404	9111	8961	8908
44	8452	8281	8163	8167	8155	8094	7994	8061	8247	8326	8392	8599	8926	8843	8603	8474	8452
45	7944	7814	7668	7727	7661	7564	7534	7584	7759	7838	7892	8095	8373	8289	8070	7995	7944
46	7490	7377	7203	7247	7175	7094	7073	7124	7242	7351	7412	7563	7897	7775	7578	7522	7490
47	7016	6898	6794	6756	6646	6620	6609	6653	6752	6867	6927	7075	7391	7281	7113	7066	7016
48	6567	6473	6342	6286	6177	6164	6149	6157	6294	6404	6470	6602	6881	6801	6682	6608	6567
49	6119	5999	5889	5861	5717	5724	5664	5733	5847	5952	5977	6138	6399	6374	6216	6165	6119
50	5714	5576	5505	5396	5292	5280	5245	5337	5399	5496	5567	5701	5955	5936	5804	5733	5714
51	5280	5154	5083	4978	4839	4882	4837	4950	5001	5088	5162	5236	5516	5502	5368	5346	5280
52	4889	4754	4693	4582	4461	4513	4466	4555	4638	4710	4786	4837	5084	5125	4967	4941	4889
53	4526	4379	4336	4219	4100	4156	4077	4216	4286	4355	4393	4459	4722	4730	4589	4589	4526
54	4210	4075	4011	3880	3776	3830	3757	3899	3962	4025	4066	4109	4331	4354	4219	4252	4210
55	3873	3735	3705	3595	3475	3504	3465	3606	3636	3685	3765	3763	3997	4001	3905	3910	3873
56	3579	3444	3425	3303	3173	3228	3195	3306	3360	3403	3481	3468	3675	3688	3604	3633	3579
57	3300	3181	3139	3029	2919	2971	2918	3053	3101	3146	3189	3197	3370	3383	3290	3324	3300
58	3038	2912	2893	2776	2680	2734	2688	2813	2862	2904	2946	2947	3075	3101	3027	3076	3038
59	2796	2685	2664	2563	2465	2502	2476	2595	2640	2663	2725	2716	2838	2844	2775	2814	2796
60	2574	2481	2459	2364	2262	2295	2281	2391	2435	2455	2515	2503	2599	2603	2550	2595	2574
61	2356	2281	2251	2163	2056	2113	2105	2186	2226	2268	2321	2291	2390	2387	2358	2389	2356



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62	2169	2097	2075	1982	1889	1941	1924	2014	2056	2096	2127	2113	2188	2191	2151	2191	2169
63	1983	1923	1909	1825	1734	1767	1771	1856	1895	1921	1964	1949	2013	2013	1983	2003	1983
64	1825	1769	1738	1671	1592	1620	1630	1704	1741	1762	1804	1791	1845	1829	1812	1839	1825
65	1679	1620	1605	1529	1443	1481	1495	1563	1589	1624	1660	1632	1689	1683	1673	1686	1679
66	1527	1480	1458	1399	1318	1352	1366	1417	1458	1488	1521	1495	1538	1531	1539	1543	1527
67	1401	1361	1332	1279	1196	1234	1240	1298	1331	1367	1380	1370	1406	1392	1399	1403	1401
68	1262	1233	1208	1161	1091	1115	1137	1189	1221	1246	1262	1252	1283	1267	1275	1279	1262
69	1156	1126	1105	1064	986	1021	1037	1076	1108	1142	1158	1136	1163	1166	1164	1169	1156
70	1053	1031	1005	955	897	927	948	981	1016	1050	1061	1041	1050	1056	1061	1068	1053
71	964	941	922	868	818	841	861	899	929	950	960	947	966	959	972	975	964
72	886	860	835	799	741	756	781	821	846	864	873	864	878	872	884	887	886
73	800	782	764	729	669	689	707	749	767	793	796	780	795	786	809	811	800
74	729	709	685	656	604	621	648	673	695	722	725	711	718	722	728	734	729
75	660	647	621	588	546	563	583	610	631	649	653	648	647	645	662	660	660
76	597	584	563	533	490	509	527	547	568	583	588	582	589	586	596	596	597
77	537	526	502	482	438	447	470	494	508	528	530	526	527	525	545	543	537
78	479	474	454	432	387	398	416	430	449	467	474	462	471	473	482	480	479
79	430	416	401	382	337	349	371	379	391	414	420	406	415	420	432	431	430
80	369	359	346	328	290	307	314	328	345	355	362	358	362	370	373	371	369
81	315	307	301	283	240	253	271	277	286	299	312	310	310	319	328	323	315
82	265	255	250	237	199	207	223	225	240	252	262	256	260	269	278	270	265
83	215	206	201	189	157	168	174	182	190	205	207	210	221	219	236	227	215
84	171	155	150	141	112	122	125	128	143	153	152	166	171	170	180	179	171
85	125	114	103	101	72	82	76	84	92	101	94	115	130	126	131	128	125
86	71	71	58	61	25	41	35	52	49	63	56	76	80	79	77	86	71
87	45	34	37	27	11	19	25	28	27	32	34	38	45	48	42	41	45
88	23	21	21	22	0	10	14	15	17	19	19	18	13	21	21	24	23
89	21	21	24	17	0	11	13	15	18	18	14	16	9	13	10	21	21
90	17	17	20	22	0	0	10	18	18	19	14	16	7	15	16	15	17
91	20	18	20	17	0	11	13	17	16	19	14	14	0	11	18	19	20
92	18	17	23	17	0	7	13	14	12	16	15	18	0	14	14	14	18
93	20	13	20	18	0	11	12	18	16	14	17	17	0	0	15	8	20



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94	14	17	20	21	0	0	10	18	15	19	16	17	0	9	15	18	14
95	13	18	20	19	0	0	13	15	15	13	13	13	0	11	14	19	13
96	7	14	19	17	0	9	11	14	16	15	14	11	0	8	12	19	7
97	18	23	22	16	0	10	13	15	19	14	14	16	7	10	18	16	18
98	14	17	16	20	0	0	12	17	15	16	13	17	9	11	14	14	14
99	17	14	17	13	0	10	14	15	17	13	18	14	0	8	13	14	17
100	17	16	19	17	0	8	14	11	14	16	17	13	0	9	18	15	17
101	18	17	17	20	0	7	12	12	17	11	14	10	0	10	13	13	18
102	15	18	18	18	0	0	12	10	14	15	14	15	0	10	16	19	15
103	14	17	23	19	0	0	11	13	17	16	16	14	8	8	12	15	14
104	19	19	18	15	0	0	15	15	13	13	14	16	0	13	12	16	19
105	17	17	17	21	0	0	9	16	19	13	15	18	0	11	14	19	17
106	16	13	17	20	0	10	14	11	18	15	18	20	7	11	14	17	16
107	18	18	16	18	0	0	15	13	18	14	18	9	9	0	15	15	18
108	15	18	20	18	0	0	14	17	18	14	16	16	0	14	15	17	15
109	18	16	19	19	0	0	11	11	13	18	16	16	0	11	16	19	18
110	15	18	22	18	0	9	14	15	16	18	17	17	0	11	14	17	15
111	20	14	20	22	0	7	13	14	16	17	12	11	8	13	15	13	20
112	21	16	16	22	0	9	13	14	17	17	15	16	0	13	16	13	21
113	22	20	21	22	0	0	15	13	18	15	10	14	7	8	15	17	22
114	18	18	22	19	0	10	13	18	17	15	14	17	0	13	14	18	18
115	15	19	17	17	0	7	13	9	14	17	20	19	0	9	15	16	15
116	14	17	23	18	0	12	14	14	21	16	20	15	0	14	18	19	14
117	15	20	12	23	0	11	14	13	14	17	14	16	8	17	16	16	15
118	18	18	22	19	0	7	16	17	19	18	18	18	0	12	17	17	18
119	20	17	22	18	0	10	14	17	19	16	16	17	0	10	15	20	20
120	18	18	18	21	0	0	11	19	17	18	23	19	0	8	16	20	18
121	17	20	21	22	0	11	13	17	21	19	15	14	0	9	14	19	17
122	18	20	25	19	0	13	11	19	18	18	19	18	11	9	16	21	18
123	13	20	13	21	0	12	11	20	22	20	21	16	11	15	14	20	13
124	20	21	20	19	10	15	18	19	21	22	20	21	11	15	18	22	20
125	16	22	22	19	0	11	16	17	15	22	23	18	10	17	16	19	16



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126	24	18	20	25	0	12	21	19	22	22	24	21	11	15	18	25	24
127	21	25	23	26	12	12	18	21	20	18	18	18	16	18	19	25	21
128	19	17	22	24	15	13	22	16	21	22	22	21	14	12	21	20	19
129	25	22	25	25	10	14	17	22	19	20	25	20	13	19	20	19	25
130	23	23	27	25	11	14	19	19	23	22	21	26	8	16	16	26	23
131	24	26	27	26	12	14	16	25	27	23	22	26	16	19	25	25	24
132	27	28	24	24	11	10	25	24	22	24	20	28	12	20	22	27	27
133	24	28	27	28	16	21	21	22	28	26	25	28	16	25	25	29	24
134	27	27	29	27	17	21	22	27	17	21	27	29	18	22	21	26	27
135	28	27	22	25	13	20	23	25	26	30	25	32	19	25	28	25	28
136	28	27	30	26	14	19	26	26	23	30	30	31	16	21	26	26	28
137	26	30	22	33	16	18	24	26	26	30	30	29	18	18	25	30	26
138	33	29	33	29	13	22	28	25	29	34	29	33	21	27	26	33	33
139	32	32	35	29	17	22	26	28	34	27	30	27	22	23	30	33	32
140	28	34	36	34	16	21	26	30	36	31	36	32	24	30	27	34	28
141	33	32	36	37	20	21	24	35	32	34	35	38	24	33	25	32	33
142	35	21	35	33	20	16	28	33	39	34	30	36	27	27	31	32	35
143	40	40	28	36	20	26	34	36	36	25	34	34	28	20	31	37	40
144	34	37	36	32	17	26	30	39	40	37	37	40	28	31	36	35	34
145	31	39	42	34	24	25	33	36	37	36	34	32	27	35	38	35	31
146	34	37	43	31	23	32	35	37	40	39	22	39	30	29	34	34	34
147	37	34	42	38	24	31	40	36	38	37	38	42	30	26	40	37	37
148	40	39	43	23	25	30	36	41	45	38	33	40	31	38	31	37	40
149	37	44	40	41	28	29	36	43	44	39	41	43	30	36	44	43	37
150	44	40	41	46	27	34	40	40	42	39	48	40	33	36	37	38	44
151	42	26	47	43	33	38	40	37	44	43	43	45	34	36	38	38	42
152	33	44	46	41	26	30	42	42	29	45	43	30	32	41	40	44	33
153	45	39	36	46	27	28	35	39	44	39	32	46	35	35	39	47	45
154	43	48	44	45	32	33	45	47	41	47	44	48	33	46	40	50	43
155	45	47	46	42	33	36	44	45	53	39	41	34	31	40	46	32	45
156	36	40	50	49	36	37	43	42	49	26	45	45	37	46	44	41	36
157	48	40	50	49	26	36	41	49	43	46	40	48	40	44	35	46	48



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158	43	37	52	49	33	39	40	43	44	49	47	43	35	40	33	43	43
159	43	45	48	43	31	40	43	35	50	47	47	46	27	36	50	46	43
160	50	46	47	49	37	38	38	48	45	44	47	44	34	43	48	45	50
161	41	49	41	54	28	40	45	44	49	48	51	49	38	45	45	48	41
162	51	49	46	40	33	39	45	47	49	47	50	52	40	45	40	46	51
163	52	50	51	50	34	41	46	45	52	51	42	54	45	48	50	42	52
164	39	51	51	45	35	40	40	47	41	48	47	41	40	45	52	50	39
165	55	48	39	52	34	39	47	50	51	53	52	55	39	47	48	51	55
166	49	49	55	56	31	42	44	42	47	50	55	47	44	45	50	53	49
167	52	52	53	59	30	43	52	45	52	52	34	50	43	48	54	52	52
168	50	49	51	58	38	46	43	52	51	50	44	57	43	41	51	45	50
169	46	52	54	56	34	48	50	50	49	52	50	55	40	47	51	52	46
170	49	48	49	49	35	50	37	47	53	52	54	55	45	50	50	52	49
171	55	56	46	55	40	47	48	56	55	46	59	57	43	48	50	52	55
172	54	47	58	55	35	47	37	48	48	52	55	58	39	42	44	48	54
173	51	48	46	51	39	43	51	51	52	52	52	54	45	38	51	47	51
174	55	39	49	56	35	38	50	49	48	57	57	53	42	46	51	41	55
175	48	49	47	51	37	47	45	47	53	53	54	47	44	48	49	48	48
176	51	46	52	55	43	46	48	54	54	48	50	47	46	42	53	44	51
177	48	48	40	51	36	43	52	39	51	54	51	52	46	51	37	48	48
178	50	45	49	46	38	42	45	50	47	45	50	45	41	44	48	53	50
179	44	49	51	52	40	38	43	51	53	48	50	47	41	44	46	52	44
180	53	45	52	55	33	39	45	52	50	53	45	53	39	45	52	50	53



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	25.2	26.6	25.6	26.9	27.2	24.6	25.9	24.9	26.2	26.6
3H	25.9	27.1	26.3	27.5	27.8	25.3	26.5	25.6	26.8	27.2
4H	26.2	27.3	26.6	27.6	28.0	25.4	26.6	25.8	26.9	27.3
6H	26.3	27.4	26.7	27.7	28.1	25.6	26.6	26.0	27.0	27.4
8H	26.3	27.3	26.8	27.7	28.1	25.6	26.6	26.0	27.0	27.4
12H	26.3	27.3	26.8	27.7	28.1	25.5	26.5	26.0	26.9	27.3
4H 2H	25.4	26.6	25.8	26.9	27.3	24.8	26.0	25.2	26.3	26.7
3H	26.3	27.3	26.7	27.7	28.1	25.7	26.6	26.1	27.0	27.4
4H	26.6	27.5	27.1	27.9	28.3	26.0	26.8	26.4	27.2	27.7
6H	26.9	27.6	27.4	28.1	28.5	26.2	26.9	26.6	27.3	27.8
8H	27.0	27.6	27.4	28.1	28.5	26.2	26.9	26.7	27.3	27.8
12H	27.0	27.6	27.4	28.0	28.5	26.2	26.8	26.7	27.3	27.7
8H 4H	26.7	27.4	27.2	27.8	28.3	26.0	26.7	26.5	27.2	27.6
6H	27.0	27.6	27.5	28.1	28.5	26.3	26.8	26.8	27.3	27.8
8H	27.1	27.6	27.6	28.1	28.6	26.3	26.8	26.9	27.4	27.9
12H	27.2	27.6	27.7	28.1	28.7	26.4	26.8	26.9	27.3	27.9
12H 4H	26.7	27.3	27.2	27.8	28.2	26.0	26.6	26.5	27.1	27.6
6H	27.0	27.5	27.5	28.0	28.5	26.3	26.8	26.8	27.3	27.8
8H	27.1	27.6	27.6	28.1	28.6	26.4	26.8	26.9	27.3	27.9

Maximum UGR = 28.7



2.3 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2020-12-03	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT-HB11-240WH2BT2A1-BH50		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC201200	120.0	60	2.029	241.3	0.991	10.32
4E-D3	277.0	60	0.941	240.78	0.924	13.76
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	3
Frequency (Hz)	60	R2	88	R10	70
CCT (K)	5733	R3	92	R11	82
Duv	0.0020	R4	83	R12	58
Chromaticity (x, y)	x=0.3273 y=0.3404	R5	82	R13	83
Chromaticity (u', v')	u(u')=0.2036 v'(v')=0.4765	R6	82	R14	96
Color Rendering Index (CRI)	83	R7	87	R15	76
R9	3	R8	67	--	--
Rf	83	--	--	--	--
Rg	95	--	--	--	--
Rcs,h1(%)	-13	--	--	--	--

Photometric Measurement – Sphere-Spectroradiometer Method:

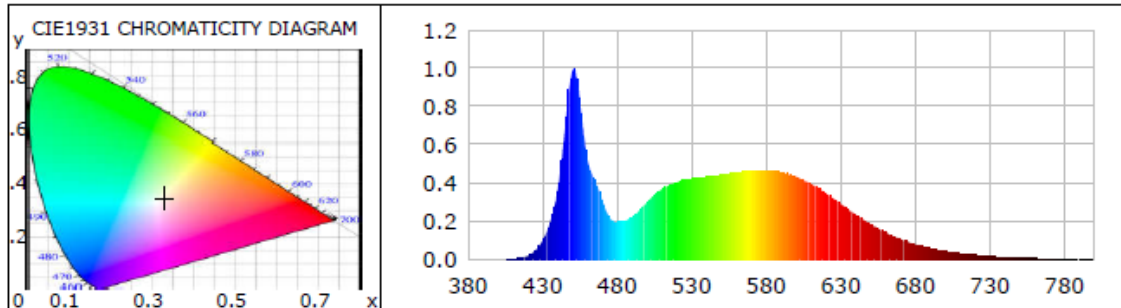
Parameter	Result		DLC V5.1 Pass Criteria
Test Voltage (V)	120.0	277.0	--
Frequency (Hz)	60	60	
Total Luminous (lm)	33613.1	33254.7	>= 10000(-10%)
Luminous Efficacy (lm/W)	139.30	138.11	Premium: >= 135(-3%)
Most worst Luminous/Highest	137.81		



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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	0.0002	0.1721	525	0.4151	467.6180	670	0.1082	121.9239
385	0.0009	1.0308	530	0.4211	474.3615	675	0.0933	105.1100
390	0.0005	0.5389	535	0.4259	479.7683	680	0.0804	90.6149
395	0.0007	0.8344	540	0.4319	486.4594	685	0.0696	78.4058
400	0.0006	0.7307	545	0.4366	491.7685	690	0.0591	66.6121
405	0.0013	1.4287	550	0.4421	497.9389	695	0.0509	57.3079
410	0.0034	3.7918	555	0.4479	504.4733	700	0.0431	48.5247
415	0.0082	9.2758	560	0.4542	511.5761	705	0.0370	41.7090
420	0.0203	22.8609	565	0.4602	518.4228	710	0.0320	36.0268
425	0.0460	51.7615	570	0.4636	522.2404	715	0.0269	30.2634
430	0.0969	109.1663	575	0.4661	525.0037	720	0.0222	24.9800
435	0.1905	214.5787	580	0.4662	525.0880	725	0.0190	21.3519
440	0.3564	401.4828	585	0.4626	521.0612	730	0.0160	18.0530
445	0.6722	757.1774	590	0.4566	514.2973	735	0.0144	16.1998
450	0.9885	1113.5149	595	0.4467	503.2232	740	0.0119	13.4102
455	0.8392	945.2474	600	0.4344	489.2680	745	0.0106	11.8898
460	0.5284	595.1741	605	0.4157	468.2759	750	0.0080	9.0071
465	0.4129	465.0620	610	0.3959	446.0020	755	0.0074	8.2874
470	0.3091	348.1528	615	0.3734	420.5908	760	0.0066	7.3989
475	0.2205	248.3810	620	0.3476	391.5564	765	0.0043	4.8702
480	0.1956	220.2925	625	0.3193	359.6695	770	0.0042	4.7367
485	0.2033	229.0210	630	0.2909	327.6211	775	0.0042	4.6759
490	0.2215	249.4603	635	0.2632	296.4459	780	0.0041	4.6708
495	0.2588	291.4926	640	0.2354	265.1489	785	0.0040	4.5334
500	0.3004	338.3876	645	0.2098	236.3772	790	0.0020	2.2842
505	0.3372	379.8435	650	0.1854	208.8598	795	0.0023	2.6248
510	0.3679	414.4245	655	0.1635	184.1416	800	0.0015	1.7324
515	0.3894	438.6331	660	0.1425	160.5510			
520	0.4043	455.4654	665	0.1238	139.5036			

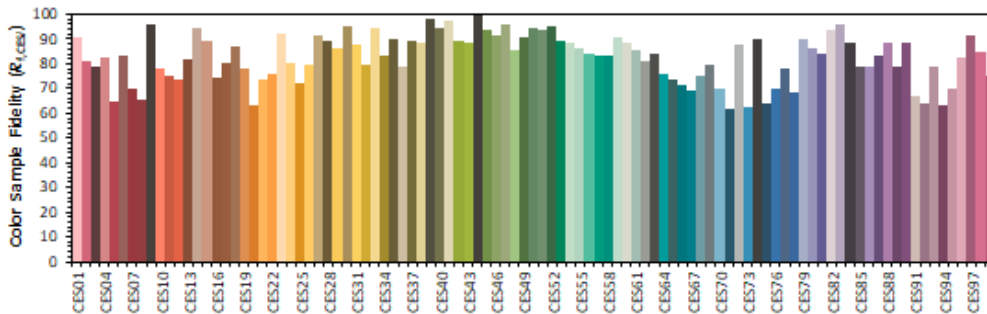
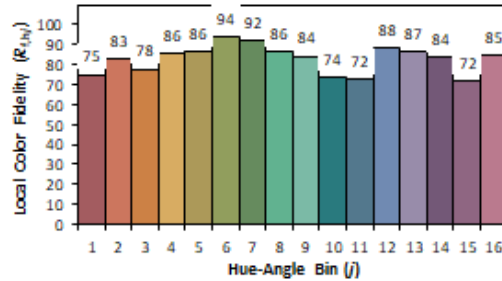
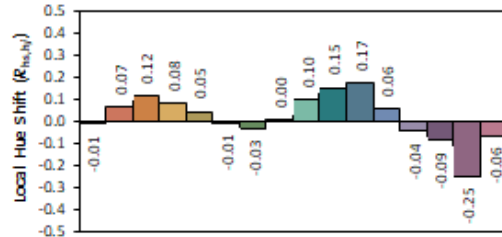
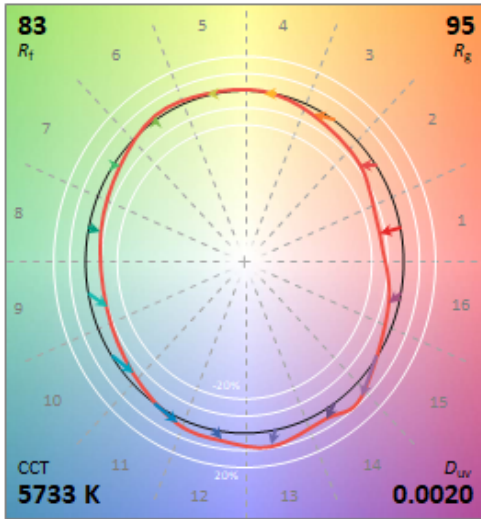
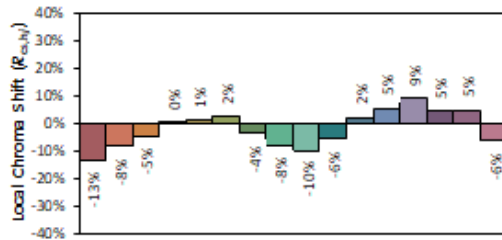
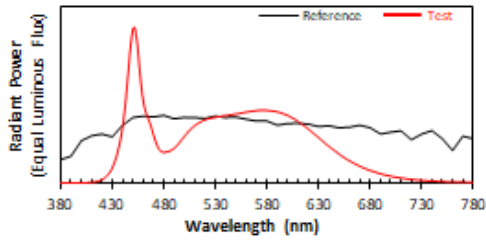


TM-30

ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35002U1
 Date: 2020/12/3

Manufacturer: Beyond LED Technology
 Model: BLT-HB11-240WH2BT2A1-BH50



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

x 0.3273
 y 0.3404
 u' 0.2036
 v' 0.4765

CIE 13.3-1995 (CRI)	
R_a	83
R_g	3



Calculated Efficacy Data for family models:

Model Number	Luminous Flux (lm)	Power (W)	Efficacy (lm/W)
BLT-HB11-240WH2BT2A1-BH50	32859.6	241.26	136.20
BLT-HB11-240WH2BT2A1-BH51	34016.2	241.35	140.94
BLT-HB11-240WH2BT2A1-BH52	33881.8	241.33	140.40
BLT-HB11-240WH2BT2A1-BH53	33747.5	241.33	139.84
BLT-HB11-240WH2BT2A1-BH54	33613.1	241.3	139.30

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

$$33881.8 = (33613.1 - 34016.2) / 3 + 34016.2$$

$$33747.5 = (33613.1 - 34016.2) / 3 + 33881.8$$

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

$$241.33 = (241.3 + 241.35) / 2$$

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

$$140.40 = 33881.8 / 241.33$$

$$139.84 = 33747.5 / 241.33$$



Report No.:
BLC2012004E-D-CP

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 *****