



LM-79-08 Test Report

For

Beyond LED Technology (Brand Name: Beyond LED Technology)

2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces

Model name(s): BLT22P40W4KDM

Remark: The letter “**” on the model name represents the color temperature, it could be “30” represents 3000K, “35” represents 3500K, “40” represents 4000K, “50” represents 5000K.

Representative (Tested) Model: BLT22P40W4KDM

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

Test & Report By:

Jack Luo

Engineer: Jack Luo

Date: May.05,2016

Review By:

Tommy Liang

Manager: Tommy Liang

Note: This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.



U.S. Department of Energy

Lighting Facts™ Uniform LM-79 Reporting Template

Laboratory Information:

Name of Test Laboratory	Standard-Tech Co., Ltd.
Date of Test Report	May.05,2016
Test Report No.	GZE160370-A
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	Beyond LED Technology	
Brand Name	Beyond LED Technology	
Model Number	BLT22P40W4KDM	
SKU (if available)	N/A	
Type of Luminaire(for integral lamps, list base type and lamp type)	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	

Electrical Measurements:

Integrating Sphere Output

Goniophotometer Output

Input Wattage	--	38.72	W
Input Current	--	0.3291	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9804	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	3984.5	lm
Initial Lumen Efficacy	--	102.92	lm/w
Correlated color temperature / CCT	2874	--	K
Color rendering index / CRI	82.1	--	
R9 Value	6	--	
Duv	0.0008	--	

Luminous Intensity Distribution

Center beam candlepower (if applicable)	-----	1380	cd
Beam angle (if applicable)		112.6	°
Zonal lumens in the 0 °-60 °zone		77.8	%
Zonal lumens in the 60 °-90 °zone		22.1	%
Zonal lumens in the 90 °-120 °zone		0	%
Zonal lumens in the 120 °-180 °zone		0	%



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Test Report No.	GZE160370-A
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	Beyond LED Technology	
Brand Name	Beyond LED Technology	
Model Number	BLT22P40W4KDM	
SKU (if available)	N/A	
Type of Luminaire(for integral lamps, list base type and lamp type)	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	

Electrical Measurements:

Integrating Sphere Output

Goniophotometer Output

Input Wattage	39.25	--	W
Input Current	0.3332	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9817	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	4084	--	lm
Initial Lumen Efficacy	104.05	--	lm/w
Correlated color temperature / CCT	3804	--	K
Color rendering index / CRI	81.4	--	
R9 Value	7	--	
Duv	0.0026	--	

Luminous Intensity Distribution

Center beam candlepower (if applicable)			cd
Beam angle (if applicable)			°
Zonal lumens in the 0 °-60 °zone	-----	-----	%
Zonal lumens in the 60 °-90 °zone			%
Zonal lumens in the 90 °-120 °zone			%
Zonal lumens in the 120 °-180 °zone			%



U.S. Department of Energy

Lighting Facts™ Uniform LM-79 Reporting Template

Laboratory Information:

Name of Test Laboratory	Standard-Tech Co., Ltd.
Date of Test Report	May.05,2016
Test Report No.	GZE160370-A
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	Beyond LED Technology	
Brand Name	Beyond LED Technology	
Model Number	BLT22P40W4KDM	
SKU (if available)	N/A	
Type of Luminaire(for integral lamps, list base type and lamp type)	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	

Electrical Measurements:

Integrating Sphere

Goniophotometer

	Output	Output	
Input Wattage	39.17	--	W
Input Current	0.3317	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9842	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	4137	--	lm
Initial Lumen Efficacy	105.62	--	lm/w
Correlated color temperature / CCT	4976	--	K
Color rendering index / CRI	84.7	--	
R9 Value	18	--	
Duv	0.0021	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)			cd
Beam angle (if applicable)			°
Zonal lumens in the 0°-60° zone			%
Zonal lumens in the 60°-90° zone	-----	-----	%
Zonal lumens in the 90°-120° zone			%
Zonal lumens in the 120°-180° zone			%

Test Specifications:	
Date of Receipt	:May.03, 2016
Date of Test	:May.04, 2016
Test item	: Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters
Reference Standard	IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources CIE 15-2004 Technical Report Colorimetry IESNA LM-16-93 Practical Guide to Colorimetry of Light Source IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

Test Methods

1. Photometric and Electrical measurements – Light Distribution Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 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 ° Vertical intervals.

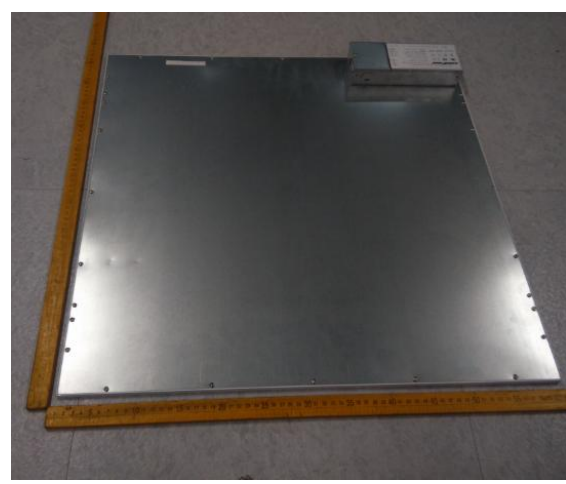
2. Photometric and Electrical Measurements – Integrating Sphere Method:

Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at least 5 nm intervals over the range of 380 to 780 nm.

1. Product Information:

Brand Name	Beyond LED Technology
Model Number	BLT22P40W4KDM
Luminaire Type	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces
Rated Voltage / Frequency	100 ~ 277 Vac, 50/60 Hz
Nominal Power	40W
Rated Initial Lamp Lumen	--
Declared CCT	3000K,3500K,4000K,5000K
LED Manufacturer	Beyond LED Technology
LED Model	67-21S Series (3000K)
Sample Receipt Date	May.03, 2016
Sample Number	GZE160370-A1(3000K),A2(4000K), A3(5000K),

Photo



2.1 Electrical, Photometric and Chromaticity Measurements <i>(Refer to Work Instruction QD25)</i>	IES LM-79 2008
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Test date	2016-05-04	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT22P40W4KDM		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160370	120.0	60	0.3291	38.72	0.9804	14.83
-A1	277.0	60	0.1508	38.81	0.9293	16.44

Sphere-Spectroradiometer Method:

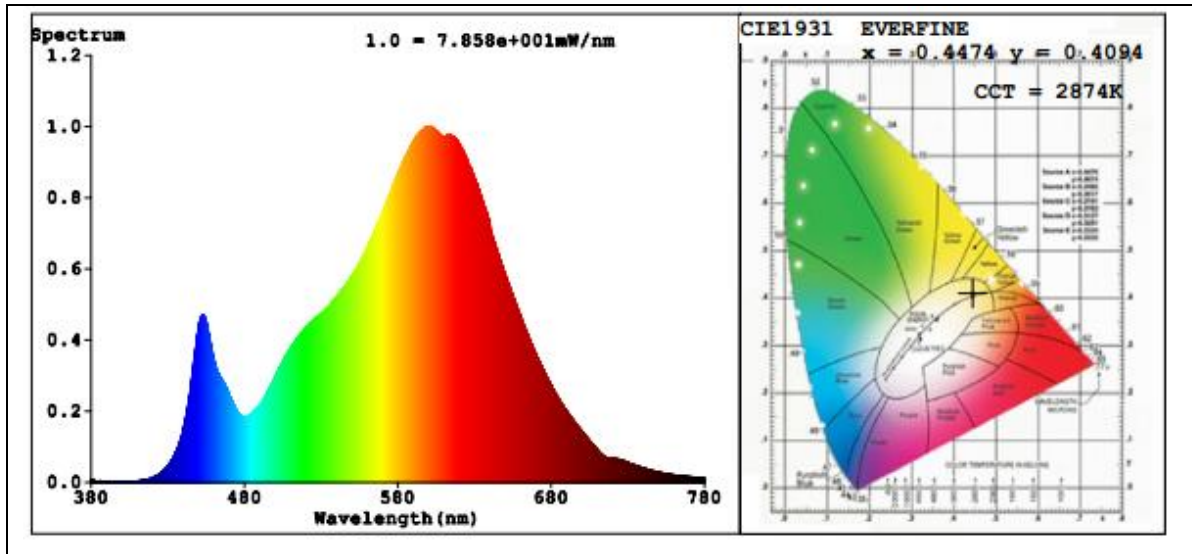
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	82.1
R9	6
CCT (K)	2874
Chromaticity (x, y)	x=0.4474 y=0.4094
Chromaticity (u', v')	u'=0.2550 v'=0.5250
Duv	0.0008

Special Color Rendering Indices			
R1	80	R9	6
R2	91	R10	81
R3	96	R11	79
R4	79	R12	71
R5	81	R13	83
R6	90	R14	97
R7	82	R15	72
R8	57	--	--

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	3984.5
Luminous Efficacy (lm/W)	102.92
Beam Angle °	112.6
Center Beam Candle Power (cd)	1380
S/MH(C0/180)	1.26
S/MH(C90/270)	1.24
Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	3988.4
Luminous Efficacy (lm/W)	102.77

Spectral Power Distribution & Chromaticity Diagram



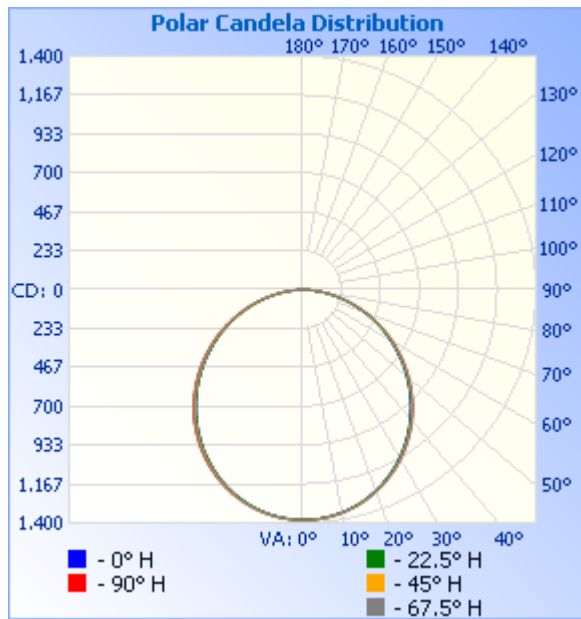


Zonal Lumen Tabulation

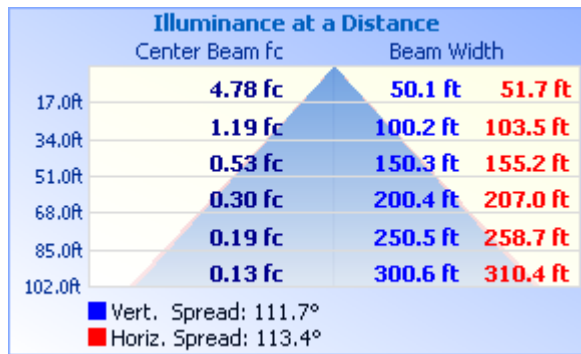
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,071.0	26.9%
0-40	1,752.8	44%
0-60	3,100.9	77.8%
60-90	881.7	22.1%
70-100	384.9	9.7%
90-120	0.3	0%
0-90	3,982.6	100%
90-180	1.5	0%
0-180	3,984.2	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	130.7	3.3%	90-100	0.0	0%
10-20	374.1	9.4%	100-110	0.1	0%
20-30	566.2	14.2%	110-120	0.2	0%
30-40	681.8	17.1%	120-130	0.4	0%
40-50	707.1	17.7%	130-140	0.3	0%
50-60	641.1	16.1%	140-150	0.2	0%
60-70	496.8	12.5%	150-160	0.2	0%
70-80	299.7	7.5%	160-170	0.1	0%
80-90	85.2	2.1%	170-180	0.0	0%

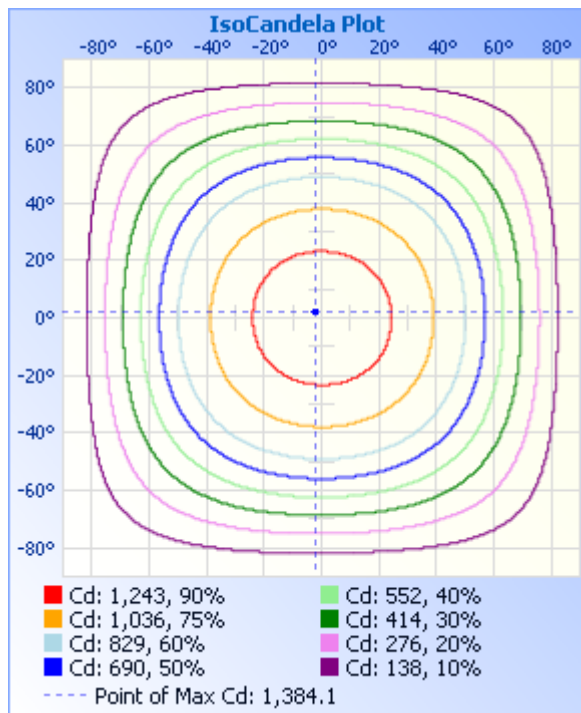
Photometric Data



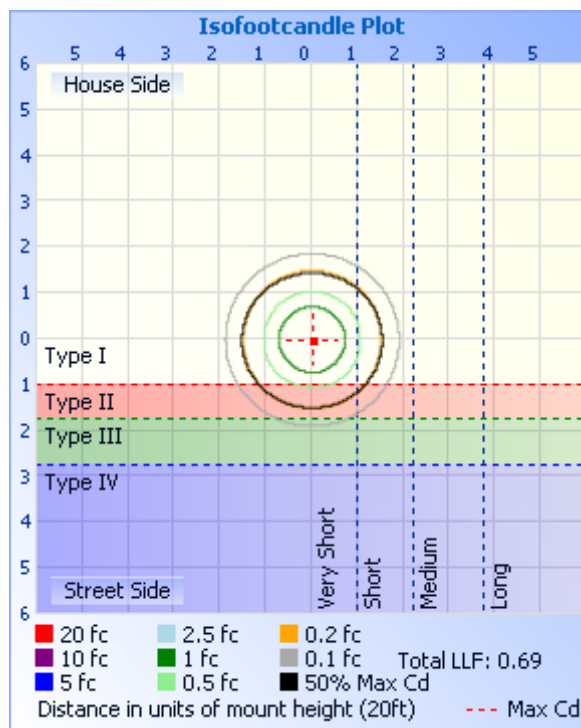
Illuminance Plots



ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



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	1380	1382	1383	1384	1382	1383	1381	1380	1380	1382	1383	1384	1382	1383	1381	1380	1380
1	1381	1382	1384	1384	1381	1382	1381	1380	1380	1381	1383	1384	1381	1383	1381	1380	1381
2	1380	1381	1383	1383	1381	1382	1380	1379	1379	1380	1382	1383	1381	1382	1380	1379	1380
3	1379	1380	1382	1382	1380	1380	1378	1377	1378	1379	1381	1381	1379	1380	1379	1378	1379
4	1377	1378	1380	1381	1378	1379	1376	1375	1376	1377	1378	1380	1377	1378	1377	1376	1377
5	1375	1376	1378	1379	1376	1377	1374	1373	1373	1374	1376	1377	1375	1376	1374	1374	1375
6	1372	1374	1375	1376	1374	1374	1372	1370	1370	1371	1373	1374	1372	1374	1372	1371	1372
7	1369	1370	1372	1373	1371	1371	1368	1366	1366	1368	1370	1371	1369	1370	1369	1368	1369
8	1365	1366	1369	1370	1367	1367	1364	1362	1363	1363	1365	1367	1366	1367	1365	1364	1365
9	1361	1362	1365	1365	1363	1363	1360	1358	1358	1359	1361	1363	1362	1363	1361	1360	1361
10	1356	1358	1360	1361	1359	1358	1355	1353	1353	1353	1356	1358	1357	1358	1356	1355	1356
11	1351	1353	1355	1356	1354	1353	1350	1347	1347	1348	1351	1353	1352	1353	1351	1350	1351
12	1345	1347	1349	1351	1349	1347	1343	1341	1341	1341	1345	1347	1346	1347	1345	1344	1345
13	1339	1340	1343	1345	1343	1341	1338	1335	1334	1335	1338	1341	1340	1341	1339	1338	1339
14	1332	1334	1337	1338	1336	1335	1331	1328	1327	1328	1331	1334	1334	1334	1332	1331	1332
15	1325	1327	1330	1331	1330	1328	1324	1320	1319	1320	1324	1327	1327	1327	1325	1324	1325
16	1318	1319	1322	1324	1322	1320	1316	1312	1312	1312	1316	1320	1320	1320	1318	1316	1318
17	1309	1311	1315	1316	1315	1312	1308	1304	1303	1304	1308	1311	1312	1312	1310	1308	1309
18	1301	1303	1306	1308	1307	1304	1299	1295	1294	1295	1299	1303	1304	1304	1301	1300	1301
19	1292	1294	1297	1299	1298	1295	1290	1286	1285	1285	1290	1294	1295	1295	1292	1290	1292
20	1282	1284	1288	1290	1289	1286	1281	1276	1275	1276	1280	1284	1286	1286	1283	1281	1282
21	1272	1274	1278	1280	1279	1276	1270	1265	1264	1265	1270	1274	1276	1276	1273	1271	1272
22	1262	1264	1268	1271	1269	1266	1260	1255	1254	1255	1259	1264	1266	1266	1262	1260	1262
23	1251	1253	1257	1260	1259	1255	1249	1244	1242	1244	1248	1254	1255	1255	1252	1249	1251
24	1239	1242	1246	1249	1248	1245	1238	1232	1231	1232	1237	1242	1244	1244	1241	1238	1239
25	1228	1230	1235	1238	1237	1233	1226	1220	1219	1220	1225	1230	1233	1232	1229	1226	1228
26	1215	1218	1223	1226	1225	1221	1214	1208	1206	1207	1213	1219	1221	1220	1217	1214	1215
27	1203	1205	1211	1214	1213	1209	1202	1195	1193	1195	1200	1206	1209	1208	1204	1201	1203
28	1190	1192	1198	1201	1200	1196	1189	1182	1180	1181	1187	1193	1196	1195	1192	1188	1190
29	1176	1179	1185	1188	1187	1183	1175	1168	1166	1168	1174	1180	1183	1182	1178	1175	1176



NVLAP LAB CODE 201011-0

30	1162	1165	1171	1175	1174	1170	1162	1154	1152	1154	1160	1166	1169	1169	1165	1161	1162
31	1148	1151	1157	1161	1160	1156	1148	1140	1138	1139	1145	1152	1155	1155	1151	1147	1148
32	1134	1137	1143	1147	1146	1142	1133	1126	1123	1124	1131	1138	1141	1140	1136	1133	1134
33	1119	1122	1128	1132	1131	1127	1118	1110	1108	1109	1116	1123	1126	1126	1121	1118	1119
34	1104	1107	1113	1117	1117	1112	1103	1095	1092	1094	1100	1108	1111	1111	1107	1103	1104
35	1088	1091	1098	1102	1101	1096	1087	1080	1076	1078	1085	1092	1096	1095	1091	1087	1088
36	1072	1075	1082	1087	1086	1081	1072	1063	1060	1062	1069	1076	1080	1079	1075	1071	1072
37	1056	1059	1066	1070	1070	1065	1055	1047	1044	1046	1052	1060	1064	1063	1059	1055	1056
38	1039	1043	1049	1054	1054	1048	1039	1030	1027	1029	1036	1043	1047	1047	1042	1038	1039
39	1022	1026	1032	1038	1037	1031	1022	1013	1010	1012	1019	1026	1030	1030	1025	1022	1022
40	1005	1009	1016	1020	1020	1014	1005	996	992	994	1001	1009	1013	1013	1008	1005	1005
41	987	991	998	1003	1003	997	987	978	975	977	984	991	996	995	991	987	987
42	970	973	980	985	985	979	969	960	956	959	966	974	978	977	973	969	970
43	952	955	962	967	967	961	951	942	938	940	947	956	960	959	955	951	952
44	933	937	944	949	949	943	933	923	920	922	929	937	942	941	936	933	933
45	914	918	925	930	930	924	914	905	901	903	910	918	923	922	918	914	914
46	896	900	906	912	911	906	895	886	882	884	891	899	904	904	899	895	896
47	876	881	887	893	892	886	876	866	863	865	872	880	885	885	880	876	876
48	857	861	868	873	873	867	857	847	843	845	852	860	865	865	860	857	857
49	837	842	848	853	853	848	837	827	823	825	832	841	846	846	841	837	837
50	818	822	829	834	834	827	817	807	803	805	813	820	825	826	821	817	818
51	798	802	809	814	813	807	797	787	783	785	792	800	805	805	801	797	798
52	777	784	788	793	793	787	777	767	763	765	772	780	785	785	781	777	777
53	757	762	768	772	773	767	757	747	743	744	751	759	765	765	760	757	757
54	736	740	747	752	752	746	736	726	722	723	731	738	744	744	740	736	736
55	715	720	727	731	731	725	715	705	701	703	710	717	723	723	719	715	715
56	695	699	706	710	710	704	694	684	680	681	688	696	702	702	698	694	695
57	674	677	684	689	689	683	673	663	659	660	667	675	680	681	677	673	674
58	652	656	663	667	668	662	652	642	638	639	646	654	659	659	656	652	652
59	631	635	642	646	646	640	630	621	616	618	624	632	638	638	635	631	631
60	610	613	620	624	625	619	609	599	595	596	603	610	616	616	613	609	610
61	588	591	598	603	603	597	587	578	573	574	581	589	594	594	591	587	588

62	566	570	577	581	581	576	566	556	551	553	559	567	572	573	570	566	566
63	544	548	554	559	559	553	544	534	530	531	537	545	550	551	548	544	544
64	522	526	533	537	537	532	522	513	508	509	515	523	528	529	526	523	522
65	501	504	511	515	516	510	500	491	486	487	493	501	506	507	504	501	501
66	479	482	489	493	494	488	478	469	465	465	471	479	484	485	482	479	479
67	457	460	467	471	472	466	457	448	443	444	449	457	462	463	460	457	457
68	435	438	444	449	450	444	435	426	421	422	427	435	440	441	438	436	435
69	414	417	423	427	427	422	413	404	399	400	405	413	418	419	417	414	414
70	392	395	401	405	406	400	391	383	378	378	383	391	396	397	395	393	392
71	370	373	378	383	383	378	369	361	356	356	362	369	374	375	373	370	370
72	349	351	357	360	361	355	347	339	335	335	340	347	352	353	351	349	349
73	327	329	335	338	338	333	326	317	313	313	318	325	331	331	329	327	327
74	306	308	313	316	316	312	304	296	292	292	297	303	308	309	308	305	306
75	284	286	291	294	293	289	282	275	270	270	275	281	287	288	286	284	284
76	263	265	270	272	272	267	261	254	249	249	254	260	265	266	265	263	263
77	242	244	248	249	249	245	240	233	228	228	233	238	243	244	244	242	242
78	221	223	227	227	227	223	218	212	208	208	212	217	221	223	222	221	221
79	200	202	206	206	206	202	197	192	187	187	191	196	199	201	202	200	200
80	179	181	184	185	185	180	176	172	167	167	170	174	178	180	181	180	179
81	159	161	163	164	163	159	155	152	147	147	150	153	156	158	160	159	159
82	139	141	142	142	142	138	134	131	127	127	129	132	135	137	139	139	139
83	118	120	121	122	122	118	114	111	107	107	109	111	115	117	118	118	118
84	98	100	101	101	101	98	94	90	87	87	89	91	94	96	97	98	98
85	79	80	81	81	81	77	73	70	68	68	69	71	74	76	77	79	79
86	60	61	61	62	62	58	54	51	49	49	49	52	54	56	57	59	60
87	42	42	42	42	42	39	35	32	31	30	30	33	35	37	38	40	42
88	24	24	24	24	24	20	17	15	14	13	13	15	17	18	20	22	24
89	8	8	8	7	7	4	2	1	1	1	1	1	1	3	4	6	8
90	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
92	0	0	0	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	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
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	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
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109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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113	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
114	0	0	0	0	1	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	1	1	0	0	0	0	0	0	0	0	0	0	0
117	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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119	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
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123	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0
124	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0
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126	1	0	0	0	1	0	0	1	1	1	0	0	0	0	0	1
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128	1	0	0	0	1	0	0	1	1	1	0	0	0	0	0	1
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130	1	0	0	0	1	0	0	1	1	1	0	0	0	0	0	1
131	1	0	0	0	1	0	0	1	1	1	0	0	0	0	0	1
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145	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1
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151	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1
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154	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
155	1	0	0	0	0	0	0	0	1	1	0	0	1	0	0	1
156	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
157	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1

158	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
159	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
160	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
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168	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1
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170	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1
171	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1
172	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1
173	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1
174	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1
175	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1
176	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1
177	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1
178	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1
179	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

2.2 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2016-05-04	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT22P40W4KDM		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160370	120.0	60	0.3332	39.25	0.9817	14.29
-A2	277.0	60	0.1550	39.61	0.9223	16.06

Sphere-Spectroradiometer Method:

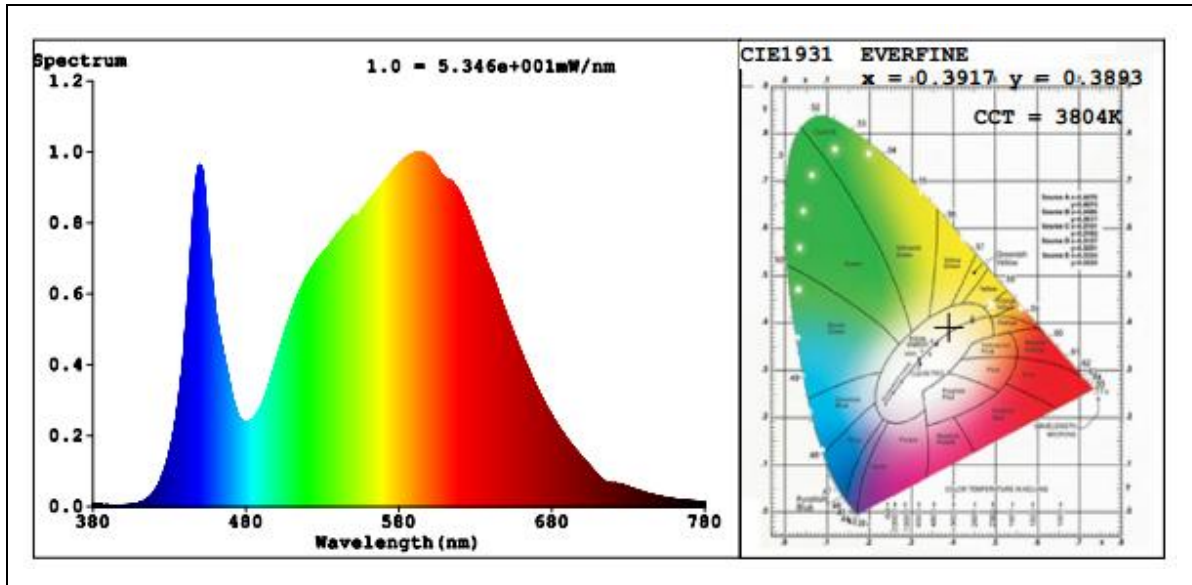
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	81.4
R9	7
CCT (K)	3804
Chromaticity (x, y)	x=0.3917 y=0.3893
Chromaticity (u', v')	u'=0.2275 v'=0.5086
Duv	0.0026
Total Luminous (lm)	4084
Luminous Efficacy (lm/W)	104.05

Special Color Rendering Indices			
R1	79	R9	7
R2	87	R10	68
R3	93	R11	79
R4	81	R12	58
R5	79	R13	81
R6	82	R14	96
R7	87	R15	73
R8	64	--	--

Sphere-Spectroradiometer Method for 277V:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Initial Lumen Output(lm)	4113
Initial Lumen Efficacy(lm/w)	103.84

Spectral Power Distribution & Chromaticity Diagram



2.3 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2016-05-04	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	BLT22P40W4KDM		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160370	120.0	60	0.3317	39.17	0.9842	14.59
-A3	277.0	60	0.1556	39.70	0.9213	16.72

Sphere-Spectroradiometer Method:

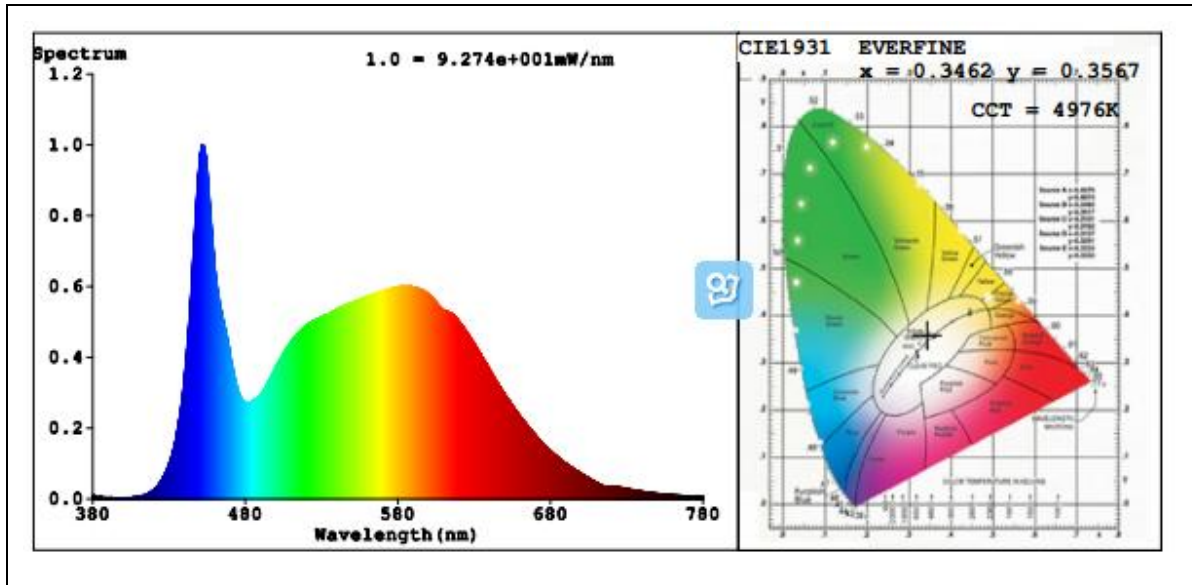
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	84.7
R9	18
CCT (K)	4976
Chromaticity (x, y)	x=0.3462 y=0.3567
Chromaticity (u', v')	u'=0.2102 v'=0.4873
Duv	0.0021
Total Luminous (lm)	4137
Luminous Efficacy (lm/W)	105.62

Special Color Rendering Indices			
R1	83	R9	18
R2	91	R10	77
R3	95	R11	81
R4	82	R12	58
R5	83	R13	85
R6	86	R14	97
R7	88	R15	78
R8	70	--	--

Sphere-Spectroradiometer Method for 277V:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Initial Lumen Output(lm)	4207
Initial Lumen Efficacy(lm/w)	105.98

Spectral Power Distribution & Chromaticity Diagram



3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2015-07-01	2016-06-30
ST-R-331	Spectral analysis system HAAS-2000	2015-07-01	2016-06-30
D204	Standard Lamp	2015-07-01	2016-06-30
PF2010	Power Meter for Integrating Sphere	2015-07-01	2016-06-30
EE-09	Goniophotometer system	2015-07-01	2016-06-30
D908S	Standard Lamp	2015-07-01	2016-06-30
PF210	Power Meter for Goniophotometer	2015-07-01	2016-06-30
ST-R-181A	Temperature Tester	2015-07-01	2016-06-30
Uncertainty: Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

******* END OF DATASHEET PACKAGE *******