

LM-79-08 Test Report

High-Bay Luminaires for Commercial and Industrial buildings

Item No: LHB-220CW

Remark: The letter "YY" in the model name stand for C different mounting option as bellow YK=Yoke, PD=Pendant; "ZZ" stand for housing color by use 2 digits to indicate all of color.

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

Test & Report By:

Dendi Lin

Engineer: Dendi Lin

Date: July.29,2015

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.

Laboratory: Standard-Tech Co. Ltd Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

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	July.29,2015
Test Report No.	GZE150711-L
Laboratory Contact Name	Tommy Liang

Product Information:

Type of Luminaire (for integral lamps, list base type and lamp type)	High-Bay Luminaires for Commercial and Industrial buildings	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Integrating Sphere
Goniophotometer
Electrical Measurements:
Output
Output

Input Wattage	--	219.5	W
Input Current	--	1.8482	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9897	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	24086	lm
Initial Lumen Efficacy	--	109.73	lm/w
Correlated color temperature / CCT	5119	--	K
Color rendering index / CRI	77.2	--	
R9 Value	0	--	
Duv	-0.0019	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)	-----	12077	cd
Beam angle (if applicable)		90.3	°
Zonal lumens in the 0 °-60 °zone		95.6	%
Zonal lumens in the 60 °-90 °zone		4.2	%
Zonal lumens in the 90 °-120 °zone		0	%
Zonal lumens in the 120 °-180 °zone		0.1	%

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Test Specifications:	
Date of Receipt	: July.20,2015
Date of Test	: July.23,2015
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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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 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.

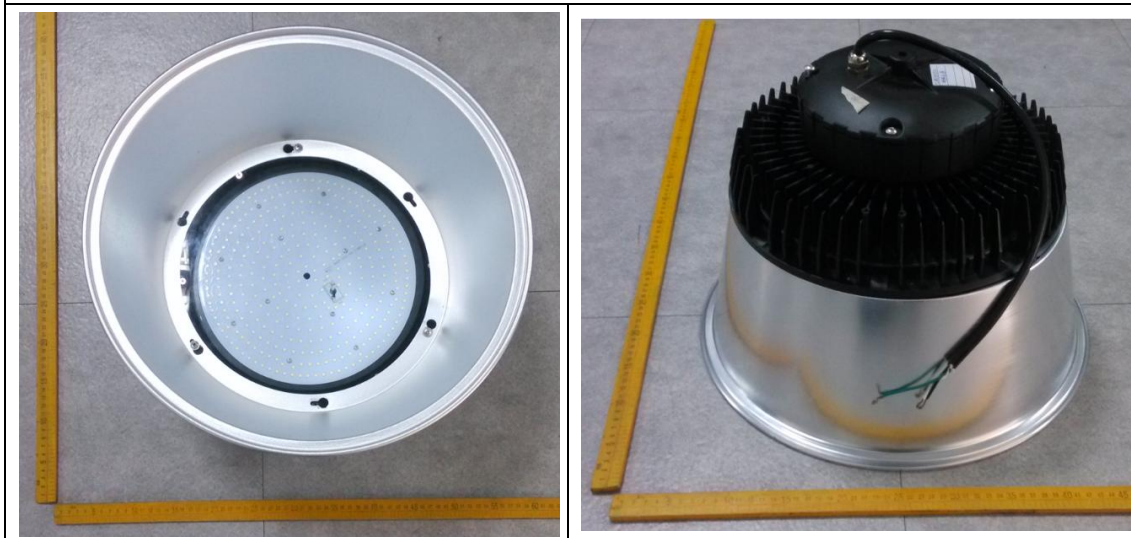
2. Photometric and Electrical Measurements – Integrating Sphere Method:

Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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 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:

Luminaire Type	High-Bay Luminaires for Commercial and Industrial buildings
Rated Voltage / Frequency	100~277Vac, 50/60Hz
Nominal Power	220W
Rated Initial Lamp Lumen	--
Declared CCT	5000K
LED Manufacturer	NICHIA
LED Model	NF2L757DR
Sample Receipt Date	July.20,2015
Sample Number	GZE150711-L1

Photo



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2.1 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2015-07-23	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE150711	120.0	60	1.8482	219.5	0.9897	13.25
-L1	277.1	60	0.8623	215.9	0.9036	18.74

Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	76	R9	0
Frequency (Hz)	60	R2	81	R10	54
Color Rendering Index (CRI)	77.2	R3	83	R11	76
R9	0	R4	78	R12	50
CCT (K)	5119	R5	77	R13	77
Chromaticity (x, y)	x=0.3416 y=0.3451	R6	74	R14	90
Chromaticity (u', v')	u'=0.2116 v'=0.4809	R7	83	R15	73
Duv	-0.0019	R8	64	--	--

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	24086
Luminous Efficacy (lm/W)	109.73
Beam Angle °	90.3
Center Beam Candle Power (cd)	12077
S/MH(C0/180)	1.27
S/MH(C90/270)	1.25

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	277.1
Frequency (Hz)	60
Total Luminous (lm)	24042
Luminous Efficacy (lm/W)	111.35

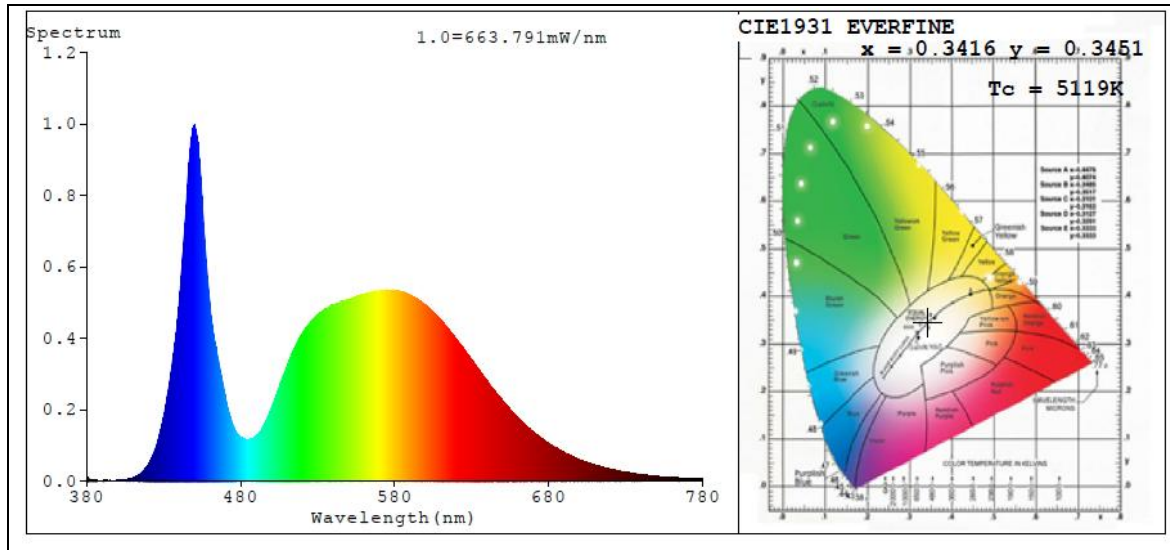
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Spectral Power Distribution & Chromaticity Diagram



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Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	9,962.1	41.4%
0-40	15,893.1	66%
0-60	23,032.1	95.6%
60-90	1,015.9	4.2%
70-100	262.2	1.1%
90-120	1.5	0%
0-90	24,048.0	99.9%
90-180	34.2	0.1%
0-180	24,082.3	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	1,153.7	4.8%	90-100	0.1	0%
10-20	3,416.4	14.2%	100-110	0.2	0%
20-30	5,392.1	22.4%	110-120	1.3	0%
30-40	5,930.9	24.6%	120-130	3.4	0%
40-50	4,732.1	19.6%	130-140	6.2	0%
50-60	2,407.0	10.0%	140-150	7.9	0%
60-70	753.8	3.1%	150-160	7.7	0%
70-80	228.0	0.9%	160-170	5.4	0%
80-90	34.1	0.1%	170-180	2.0	0%

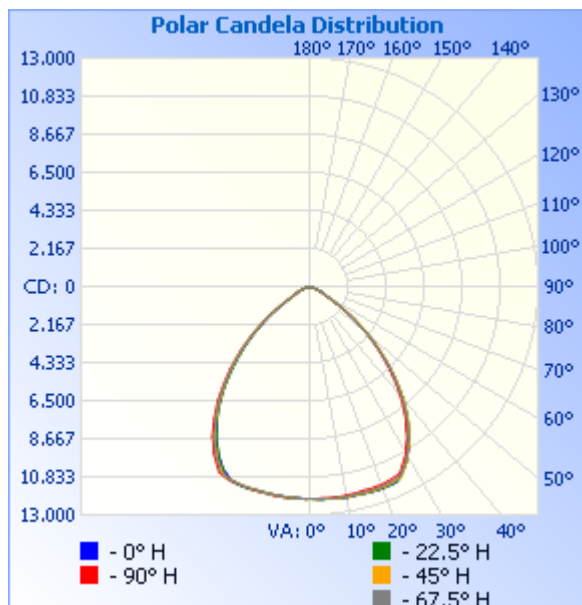
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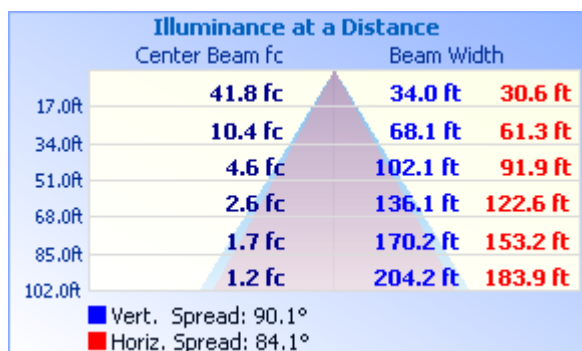
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Photometric Data



Illuminance Plots



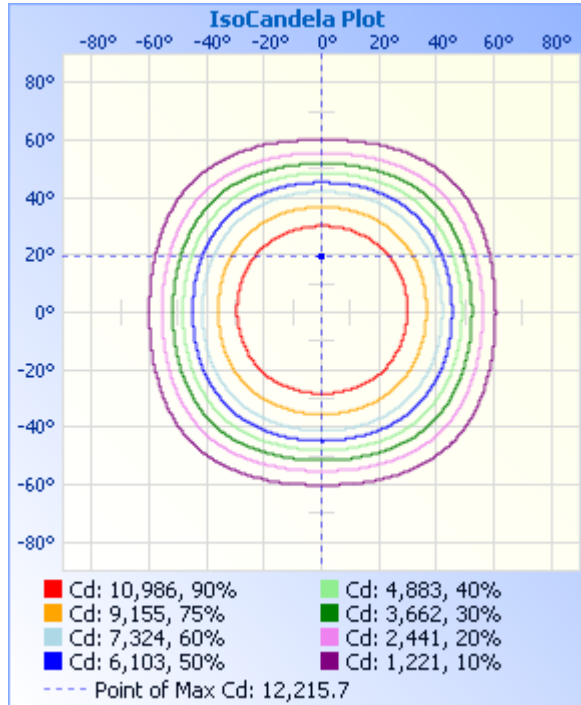
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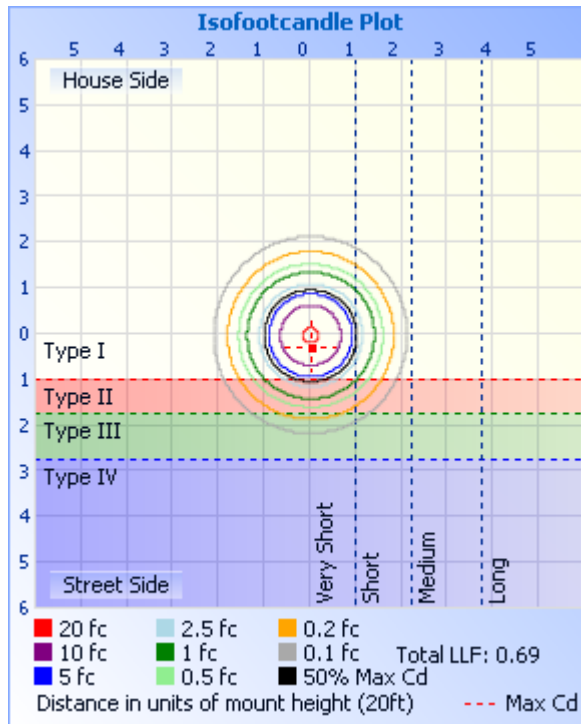
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ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



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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	12077	12077	12077	12077	12077	12077	12077	12077	12077	12077	12077	12077	12077	12077	12077	12077	12077
1	12067	12092	12088	12059	12066	12089	12072	12068	12087	12097	12093	12097	12060	12070	12068	12091	12067
2	12096	12096	12106	12075	12087	12085	12068	12076	12065	12080	12082	12080	12080	12089	12086	12076	12096
3	12120	12111	12099	12086	12061	12080	12054	12058	12048	12056	12063	12072	12070	12094	12102	12091	12120
4	12111	12122	12110	12075	12066	12059	12058	12040	12040	12046	12059	12073	12070	12099	12090	12127	12111
5	12123	12118	12126	12097	12079	12070	12060	12054	12046	12067	12069	12070	12080	12110	12124	12109	12123
6	12153	12153	12134	12106	12074	12066	12039	12056	12049	12060	12048	12067	12086	12102	12132	12133	12153
7	12144	12160	12150	12116	12057	12082	12047	12035	12029	12041	12058	12065	12078	12110	12129	12159	12144
8	12165	12153	12153	12103	12065	12052	12041	12037	12016	12027	12039	12039	12064	12117	12140	12160	12165
9	12171	12167	12153	12125	12074	12040	12026	12034	12020	12026	12040	12045	12078	12117	12132	12156	12171
10	12169	12183	12153	12120	12060	12035	12022	12006	12005	12013	12022	12018	12066	12101	12134	12183	12169
11	12165	12182	12158	12103	12033	12033	12004	12013	11997	12006	12003	12027	12023	12093	12133	12160	12165
12	12167	12131	12130	12102	12052	12021	12009	12002	11988	11990	11991	12006	12017	12085	12102	12151	12167
13	12157	12164	12133	12093	12036	12012	11978	11988	11985	11972	11985	11985	12032	12064	12108	12146	12157
14	12171	12169	12138	12082	12012	11996	11967	11983	11972	11983	11948	11961	12019	12068	12114	12170	12171
15	12179	12160	12166	12098	11996	11983	11974	11982	11966	11972	11961	11961	12017	12073	12112	12154	12179
16	12191	12174	12155	12089	12004	11986	11975	11988	11970	11968	11958	11951	12014	12069	12125	12162	12191
17	12192	12198	12151	12097	12012	11982	11983	11982	11981	11986	11942	11946	12014	12074	12134	12189	12192
18	12204	12207	12173	12110	11996	11980	11979	11980	11968	11971	11948	11942	11991	12083	12123	12191	12204
19	12216	12197	12155	12095	11986	11972	11960	11982	11970	11958	11926	11918	11982	12061	12149	12198	12216
20	12198	12203	12149	12076	11984	11955	11963	11952	11958	11944	11908	11904	11969	12042	12114	12186	12198
21	12192	12181	12142	12058	11958	11933	11934	11938	11928	11922	11888	11880	11949	12055	12114	12178	12192
22	12193	12168	12116	12048	11926	11913	11910	11936	11914	11908	11872	11869	11935	12020	12106	12180	12193
23	12181	12173	12111	12023	11910	11901	11904	11893	11767	11859	11833	11813	11904	11997	12084	12159	12181
24	12165	12127	12074	11993	11868	11831	11853	11812	11628	11814	11795	11763	11864	11972	12063	12141	12165
25	12046	12094	12043	11934	11815	11799	11767	11532	11529	11542	11736	11719	11801	11903	12013	12100	12046
26	11878	11930	11990	11884	11756	11636	11535	11407	11371	11369	11495	11644	11757	11847	11886	11880	11878
27	11734	11711	11724	11677	11533	11432	11376	11257	11149	11225	11323	11372	11533	11619	11657	11689	11734
28	11579	11558	11559	11484	11342	11278	11190	10986	10972	11021	11157	11189	11315	11433	11519	11572	11579

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29	11333	11407	11402	11317	11146	11099	10985	10785	10765	10741	10893	11009	11120	11251	11322	11341	11333
30	11128	11130	11127	11089	10959	10787	10737	10592	10499	10509	10643	10762	10940	11005	11079	11062	11128
31	10898	10873	10881	10812	10641	10561	10513	10363	10301	10311	10456	10480	10612	10729	10817	10873	10898
32	10636	10658	10672	10565	10412	10367	10292	10026	10067	9994	10221	10263	10374	10526	10622	10686	10636
33	10379	10377	10447	10366	10183	10046	9951	9788	9741	9734	9871	10006	10177	10287	10351	10354	10379
34	10115	10102	10121	10033	9824	9779	9682	9537	9479	9519	9585	9644	9830	9950	10043	10076	10115
35	9786	9840	9843	9711	9551	9489	9412	9191	9200	9168	9305	9372	9521	9641	9775	9816	9786
36	9513	9541	9562	9437	9311	9185	9078	8931	8920	8873	8983	9104	9251	9398	9481	9502	9513
37	9243	9225	9228	9111	8956	8867	8801	8631	8631	8599	8681	8769	8891	9053	9161	9200	9243
38	8870	8908	8925	8791	8629	8580	8484	8296	8274	8242	8368	8454	8581	8716	8846	8893	8870
39	8563	8558	8609	8456	8324	8226	8123	7992	7971	7911	8000	8120	8268	8396	8525	8508	8563
40	8237	8224	8237	8102	7950	7875	7816	7647	7624	7601	7689	7775	7885	8069	8176	8217	8237
41	7823	7895	7885	7777	7620	7582	7450	7281	7259	7243	7338	7409	7542	7723	7802	7867	7823
42	7503	7509	7525	7396	7285	7235	7116	6979	6930	6887	6994	7090	7200	7338	7469	7496	7503
43	7114	7148	7200	7062	6903	6872	6794	6566	6537	6548	6674	6736	6818	6987	7115	7135	7114
44	6752	6760	6818	6732	6586	6495	6402	6269	6217	6159	6276	6405	6501	6619	6719	6734	6752
45	6387	6433	6446	6323	6183	6115	6092	5886	5866	5862	5967	6048	6122	6249	6355	6378	6387
46	6025	6020	6064	5992	5819	5812	5689	5484	5490	5467	5603	5693	5776	5936	5973	5971	6025
47	5606	5654	5681	5581	5490	5422	5354	5167	5149	5169	5264	5348	5401	5511	5668	5621	5606
48	5260	5283	5337	5225	5129	5102	5018	4806	4759	4762	4897	4973	5079	5224	5270	5239	5260
49	4874	4907	4957	4902	4752	4712	4646	4466	4422	4451	4586	4654	4682	4790	4924	4886	4874
50	4523	4514	4593	4501	4419	4381	4280	4084	4089	4085	4225	4283	4365	4491	4580	4523	4523
51	4171	4213	4241	4147	4064	4024	3973	3785	3730	3731	3862	3929	3995	4105	4202	4147	4171
52	3812	3815	3898	3787	3735	3685	3631	3443	3371	3407	3528	3586	3622	3762	3844	3810	3812
53	3435	3439	3517	3424	3398	3347	3288	3100	3013	3084	3193	3243	3303	3405	3494	3432	3435
54	3091	3129	3174	3112	3060	3009	2947	2759	2716	2760	2861	2901	2974	3073	3165	3087	3091
55	2784	2817	2828	2794	2724	2686	2629	2456	2386	2442	2573	2596	2655	2758	2824	2771	2784
56	2430	2477	2498	2459	2404	2359	2326	2157	2062	2168	2274	2286	2325	2413	2486	2446	2430
57	2092	2179	2197	2142	2096	2059	2025	1881	1749	1885	1971	1984	2019	2113	2175	2123	2092
58	1786	1866	1897	1844	1806	1773	1745	1629	1485	1616	1693	1709	1746	1820	1890	1835	1786
59	1525	1631	1643	1595	1537	1517	1476	1391	1262	1379	1420	1450	1500	1579	1640	1606	1525

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60	1266	1397	1390	1348	1285	1271	1252	1189	1135	1189	1201	1225	1256	1338	1391	1379	1266
61	1109	1164	1137	1100	1072	1060	1047	1049	1060	1038	1011	1025	1051	1098	1142	1152	1109
62	1028	1006	963	926	907	919	940	974	988	965	926	912	915	947	981	1018	1028
63	949	925	885	854	840	853	870	900	917	896	861	848	848	875	903	936	949
64	870	848	815	788	778	788	802	828	847	827	800	786	784	808	831	858	870
65	797	775	749	726	717	726	737	756	771	759	740	726	723	743	763	780	797
66	716	701	684	664	656	662	670	682	690	687	677	665	661	678	695	705	716
67	635	626	617	601	595	596	601	608	613	615	611	602	596	610	625	629	635
68	556	551	547	535	530	529	531	536	540	545	544	536	529	540	552	556	556
69	486	482	479	471	466	464	466	470	474	479	480	473	465	475	485	486	486
70	422	419	418	411	408	406	407	411	415	421	421	414	407	415	424	424	422
71	367	363	363	357	354	353	354	358	361	366	368	362	354	361	368	368	367
72	318	315	313	309	307	305	306	311	313	318	320	314	308	313	319	320	318
73	275	271	270	267	265	263	264	268	271	275	276	271	266	271	276	276	275
74	237	234	232	230	228	226	227	231	234	237	238	234	229	233	238	239	237
75	204	201	199	196	195	193	194	198	200	203	204	201	196	199	204	205	204
76	175	172	170	168	167	165	165	169	171	173	174	172	168	171	175	176	175
77	149	147	145	142	141	139	140	143	145	146	147	145	142	144	148	150	149
78	127	124	122	120	119	118	118	121	122	124	124	123	120	122	125	127	127
79	107	105	103	101	100	98	98	101	102	103	104	103	100	102	105	107	107
80	90	88	86	84	84	82	82	84	85	85	86	85	83	85	88	90	90
81	75	73	71	70	69	67	67	68	69	69	70	70	68	70	72	74	75
82	62	60	59	57	56	54	54	54	55	55	56	57	55	57	59	61	62
83	50	49	47	46	45	44	43	43	43	43	45	46	44	45	47	49	50
84	40	39	37	36	36	34	33	33	33	33	34	35	33	35	36	38	40
85	30	30	28	28	27	26	24	23	24	23	24	26	25	26	27	29	30
86	22	21	21	20	19	18	16	15	16	15	16	18	17	18	19	20	22
87	15	14	14	13	11	11	10	10	10	9	9	10	9	10	11	13	15
88	9	8	8	6	5	5	5	6	7	6	4	4	4	4	6	8	9
89	6	4	2	1	0	0	1	2	1	1	0	0	0	0	2	4	6
90	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

Laboratory: Standard-Tech Co. Ltd Testing Center
NVLAP CODE: 201011-0

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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
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103	0	0	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	1	1	1	0	0	0	0	0	0	0	0	0	0
108	0	0	0	0	1	1	1	1	1	0	1	1	0	0	0	0	0
109	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
110	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
111	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
112	0	0	0	0	2	1	1	1	1	1	1	1	0	0	0	0	0
113	0	0	0	0	2	1	2	1	1	1	1	2	0	0	0	0	0
114	0	0	0	0	2	2	2	2	2	1	2	2	0	1	0	0	0
115	0	0	0	1	2	2	2	2	2	2	2	2	1	1	0	0	0
116	1	1	0	1	2	2	2	2	2	2	2	2	1	1	1	0	1
117	1	1	1	1	2	3	3	2	2	2	2	3	1	1	1	0	1
118	1	1	1	1	3	3	3	3	3	2	2	3	1	1	1	1	1
119	1	1	1	1	3	3	3	3	3	3	3	3	1	1	1	1	1
120	1	1	1	1	3	3	3	3	3	3	3	3	2	1	1	1	1
121	2	1	1	2	4	4	4	4	3	3	3	4	2	2	1	2	2

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122	2	2	2	2	4	4	4	4	4	4	3	4	2	2	2	2	2
123	2	2	2	2	4	4	4	4	4	4	4	4	2	2	2	2	2
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125	3	3	2	3	5	5	5	5	5	5	4	5	3	3	2	3	3
126	3	3	3	3	6	5	5	6	6	5	5	5	3	3	3	3	3
127	3	3	3	3	6	6	6	6	6	6	5	6	4	3	3	3	3
128	4	4	3	4	7	6	6	7	6	6	5	6	4	4	3	4	4
129	4	4	3	4	7	6	6	7	7	7	6	6	5	4	3	4	4
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131	4	5	4	5	8	7	8	8	8	8	7	8	5	5	4	5	4
132	4	5	5	5	9	8	8	8	9	9	8	8	6	5	5	5	4
133	6	6	5	5	9	8	9	10	9	9	8	9	6	5	5	6	6
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135	6	7	6	6	11	9	10	11	10	11	9	10	7	6	6	7	6
136	7	7	6	7	11	10	10	11	11	11	10	10	7	6	6	7	7
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138	8	8	7	7	12	11	11	12	12	12	11	11	7	7	7	8	8
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140	9	8	7	8	13	12	12	13	13	13	12	12	8	8	8	8	9
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145	11	11	10	10	15	15	14	15	16	16	15	15	11	10	10	11	11
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151	14	14	13	12	18	18	17	18	18	19	18	17	12	12	13	13	14
152	15	14	13	13	18	18	17	18	19	19	18	18	12	12	13	14	15

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153	15	14	14	13	19	18	18	19	20	19	19	18	12	13	14	14	15
154	16	15	14	14	19	19	18	19	20	20	19	18	12	13	14	15	16
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156	17	15	15	15	20	20	19	19	20	20	20	20	14	14	15	15	17
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163	18	17	16	17	19	20	20	21	21	22	21	21	17	17	16	17	18
164	18	18	17	18	20	20	20	21	21	22	21	21	17	17	17	17	18
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173	21	21	20	20	22	22	22	22	22	23	23	22	19	20	20	21	21
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BUG Rating: B4-U2-G1

IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	5027.1	20.9
FM - Front-Medium(30-60)	6710	27.9
FH - Front-High(60-80)	498.2	2.1
FVH - Front-Very High(80-90)	17.774	0.1
Total Forward Light	12267	50.9

BL - Back-Low(0-30)	4935	20.5
BM - Back-Medium(30-60)	6363.6	26.4
BH - Back-High(60-80)	483.55	2.0
BVH - Back-Very High(80-90)	16.366	0.1
Total Back Light	11819	49.1

UL - Uplight-Low(90-100)	0.047054	0.0
UH - Uplight-High(100-180)	34.205	0.1
Total Up Light	34.252	0.1

BUG(Back,Up,Glare) Rating	B4-U2-G1
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	12253	13.93	12267
Street Side	11799	20.322	11819

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 *******

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