

Report of Test

LLIA001413-002

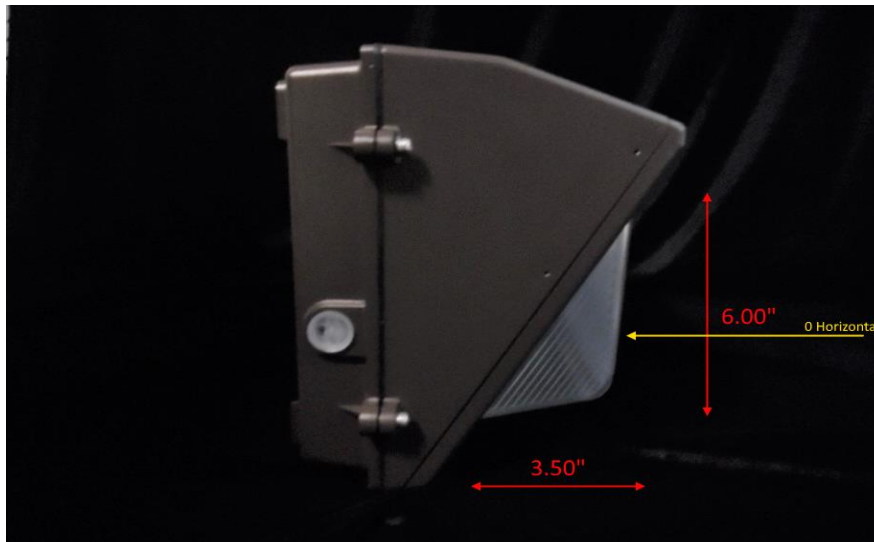
Roadway/Area Light Distribution Photometry Test Report

Catalog Number: F-WPE/60W/50K/BZ/PC

Wall mounted, cast aluminum housing, clear prismatic plastic lens.

225 white LEDs, one SWP05M-50-60W-15C15B-A0 LED board with white plastic reflector tray

One HB-LPG060-52 LED driver



Prepared For:

Topaz Lighting Corp

925 Waverly Avenue

Holtsville, NY 11742, USA

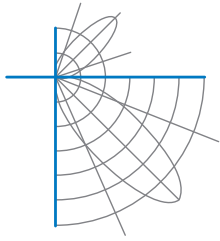
Performance Summary			
Input Voltage	120.0 V	Luminous Flux	8228.9 Lumens
Input Current	0.4967 A	Total Efficacy	140.7 Lm/W
Input Power	58.48 W		
Frequency	60.00 Hz		
Power Factor	0.981	Roadway Type	Area Light
Current THD	15.1 %	IES BUG Rating	B1 - U4 - G5

This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

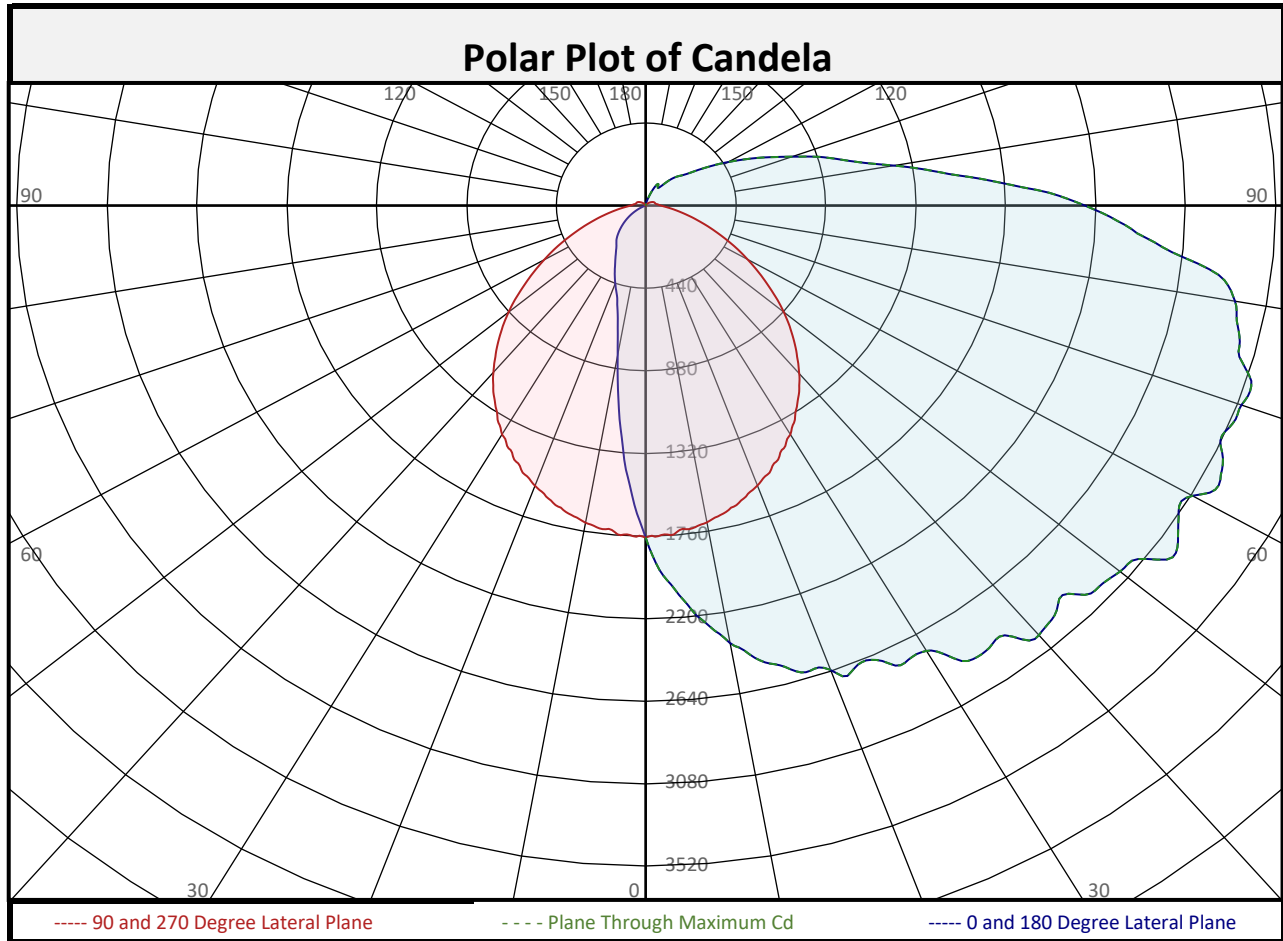
Test date: 02/22/2021

Report date: 02/23/2021

Signed: _____

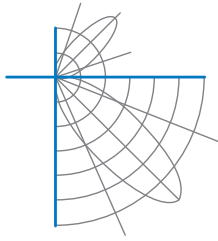


Report of Test
LLIA001413-002

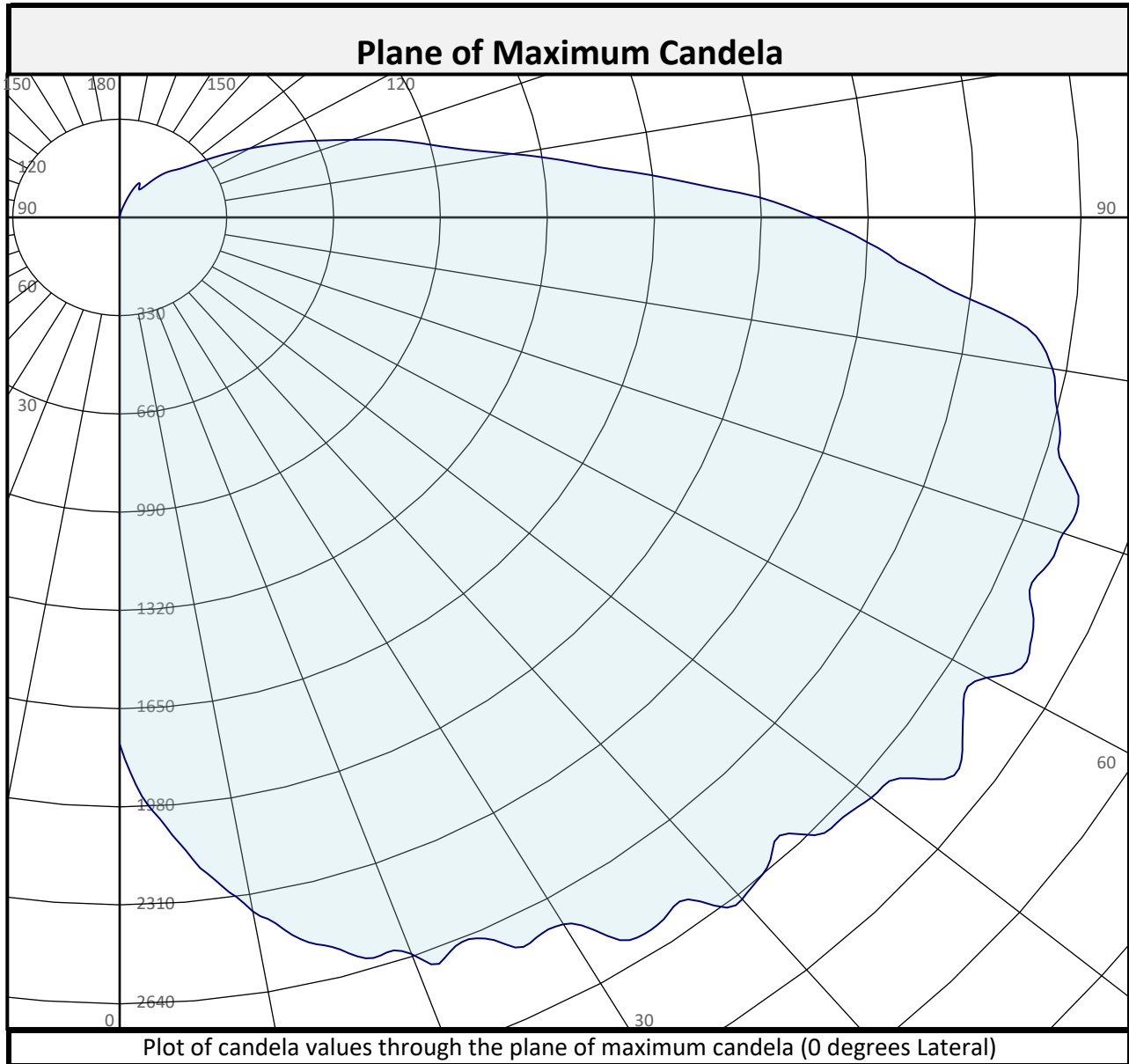


Zonal Flux Summary

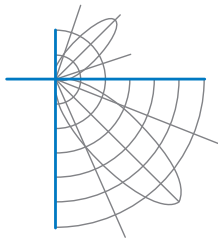
Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	161.5	2.0%	90-100	496.8	6.0%	0-20	602.2	7.3%
10-20	440.7	5.4%	100-110	283.8	3.4%	0-30	1276	15.5%
20-30	673.9	8.2%	110-120	169.3	2.1%	0-40	2143	26.0%
30-40	866.6	10.5%	120-130	96.6	1.2%	0-60	4214	51.2%
40-50	1002	12.2%	130-140	52.8	0.6%	0-80	6272	76.2%
50-60	1069	13.0%	140-150	27.5	0.3%	10-90	6924	84.1%
60-70	1058	12.9%	150-160	14.2	0.2%	20-50	2543	30.9%
70-80	1001	12.2%	160-170	2.4	0.0%	40-90	4943	60.1%
80-90	813.0	9.9%	170-180	0.0	0.0%	60-90	2871	34.9%
0-90	7085	86.1%	90-180	1144	13.9%	0-180	8229	100.0%



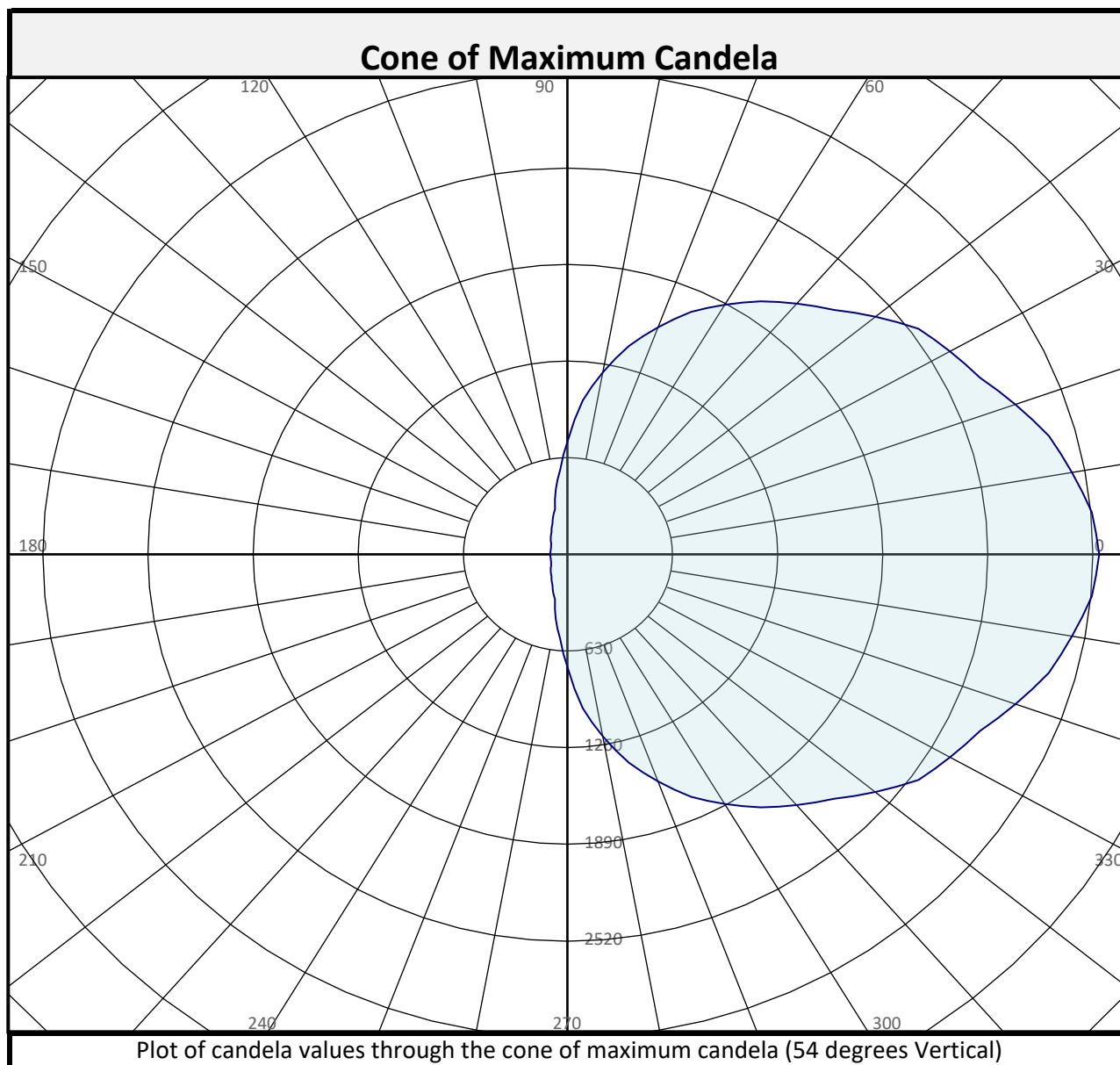
Report of Test
LLIA001413-002



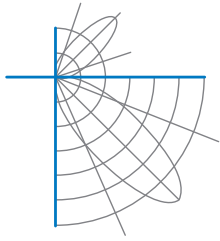
Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	6315.6	76.7%	1116.4	13.6%	7431.9	90.3%
House Side	769.7	9.4%	27.2	0.3%	797.0	9.7%
Total	7085.3	86.1%	1143.6	13.9%	8228.9	100.0%



Report of Test
LLIA001413-002

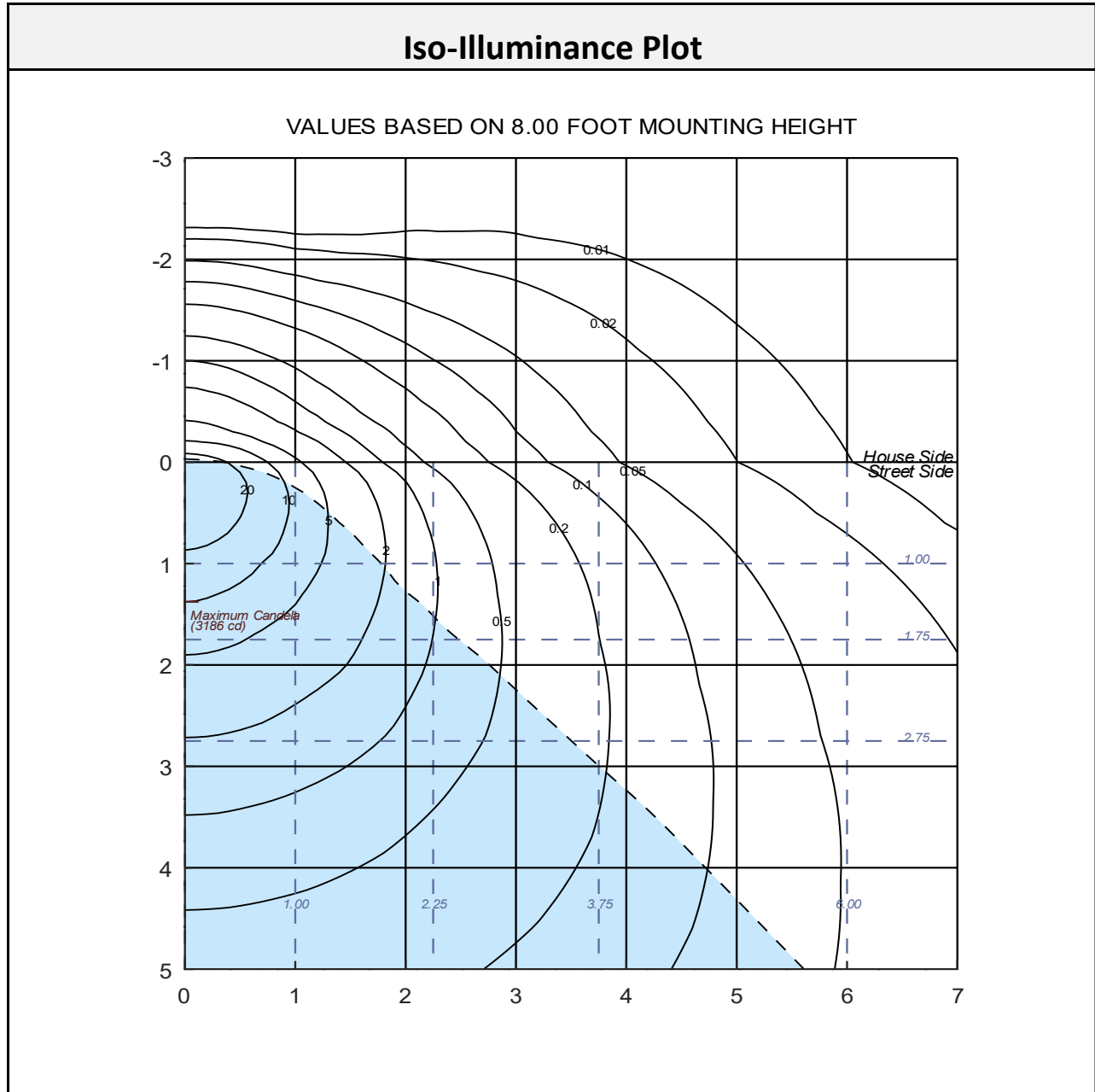


Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	6315.6	76.7%	1116.4	13.6%	7431.9	90.3%
House Side	769.7	9.4%	27.2	0.3%	797.0	9.7%
Total	7085.3	86.1%	1143.6	13.9%	8228.9	100.0%

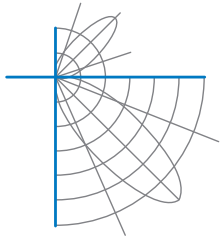


Report of Test

LLIA001413-002

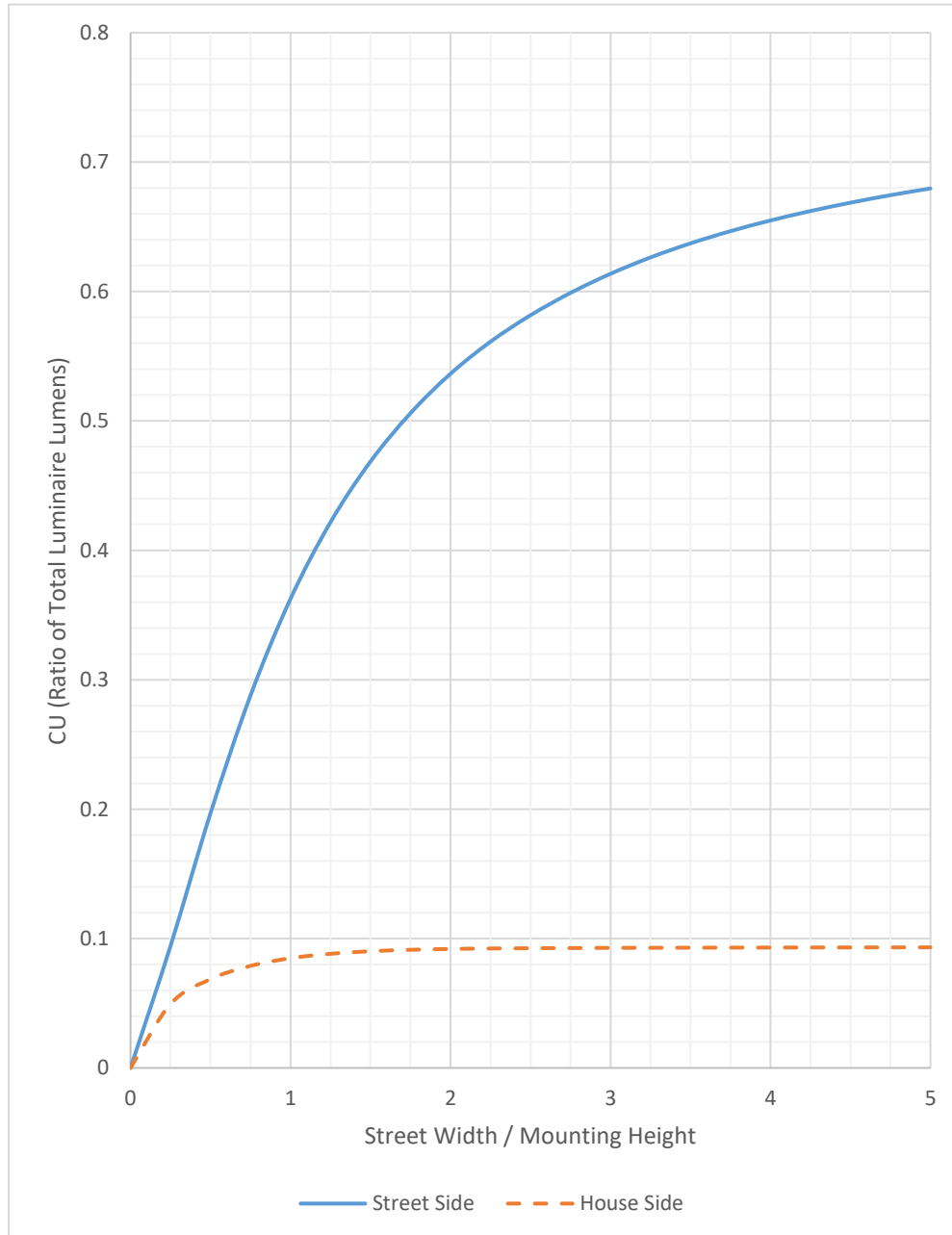


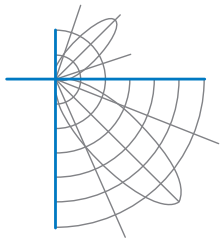
The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution of room reflections.



Report of Test LLIA001413-002

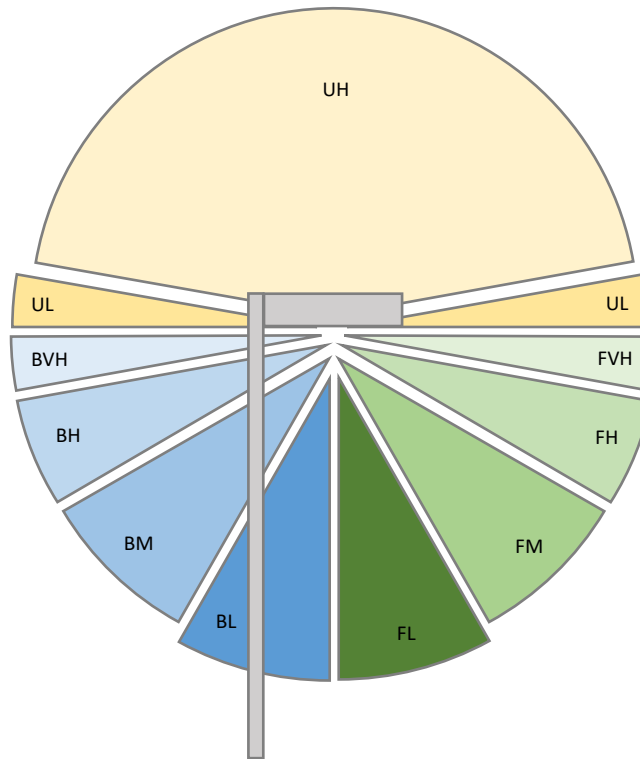
Coefficients of Utilization Plot





Report of Test LLIA001413-002

LCS Tables and Bug Classification



Back Light

BL - Back Low (0°-30°)	328.2 Lm
BM - Back Mid (30°-60°)	345.6 Lm
BH - Back High (60°-80°)	80.5 Lm
BVH - Back Very High (80°-90°)	15.4 Lm

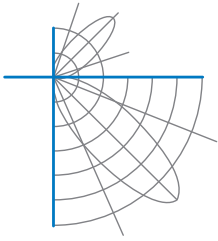
Forward Light

FL - Forward Low (0°-30°)	947.9 Lm
FM - Forward Mid (30°-60°)	2592.3 Lm
FH - Forward High (60°-80°)	1977.8 Lm
FVH - Forward Very High (80°-90°)	797.6 Lm

Uplight

UL - Upward Low (90°-100°)	496.8 Lm
UH - Upward High (100°-180°)	646.8 Lm

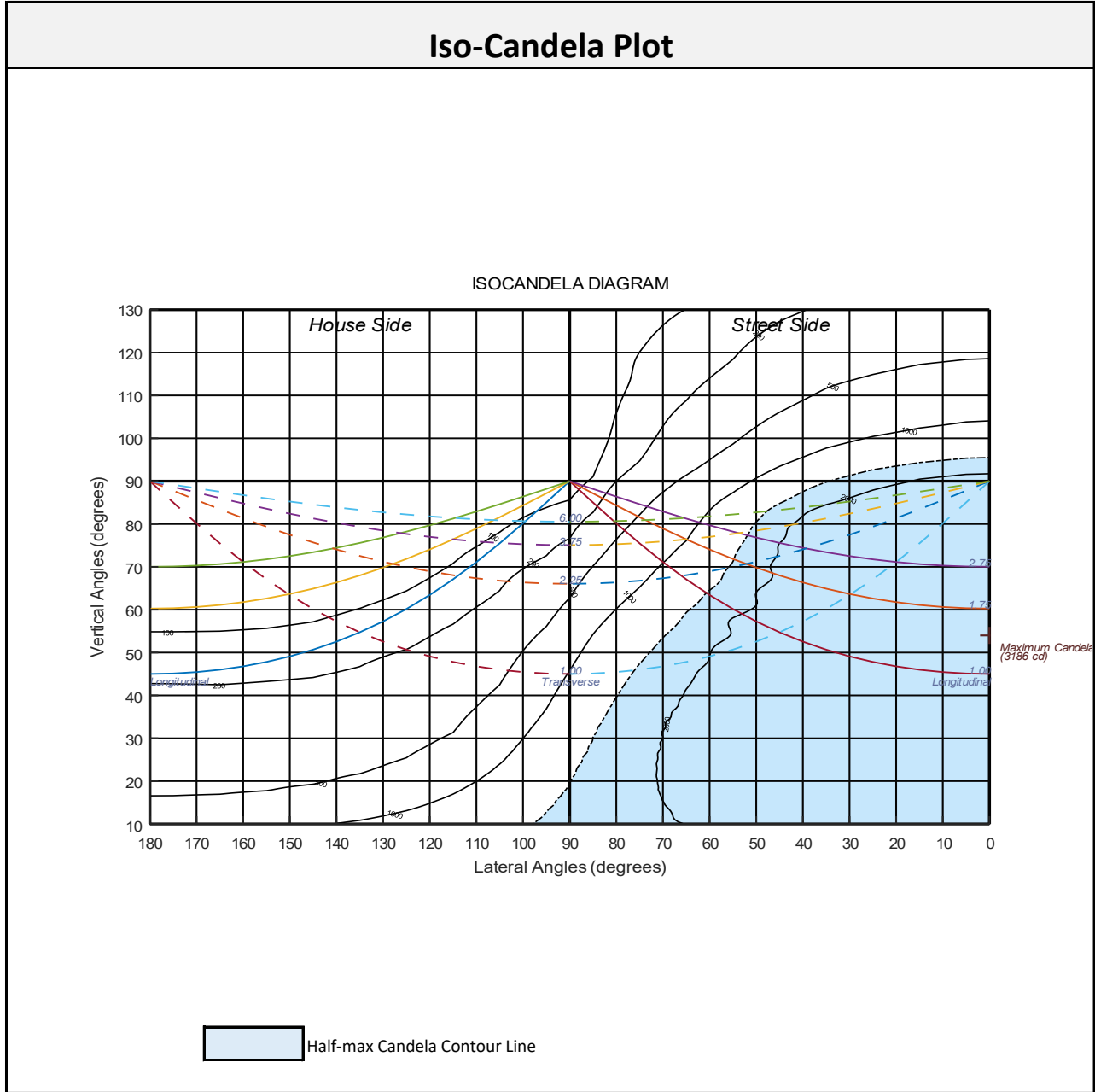
BUG Ratings: B1 - U4 - G5

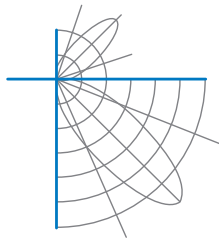


Report of Test

LLIA001413-002

Iso-Candela Plot





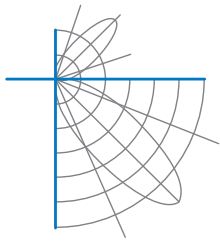
Report of Test

LLIA001413-002

Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles										
	0	5	15	25	35	45	55	65	75	85	90
0	1768	1768	1768	1768	1768	1768	1768	1768	1768	1768	1768
2.5	1972	1967	1957	1949	1936	1915	1885	1849	1813	1776	1756
5	2107	2097	2089	2075	2035	2004	1976	1929	1860	1784	1745
7.5	2241	2227	2221	2190	2157	2081	2020	1964	1894	1791	1734
10	2365	2343	2326	2297	2225	2175	2091	2005	1916	1788	1713
12.5	2468	2444	2424	2367	2325	2237	2154	2036	1919	1778	1687
15	2535	2512	2500	2452	2391	2312	2191	2069	1925	1767	1659
17.5	2606	2582	2569	2511	2442	2356	2236	2092	1934	1754	1624
20	2630	2601	2571	2539	2492	2388	2266	2109	1932	1729	1587
22.5	2668	2646	2639	2569	2488	2408	2295	2135	1921	1703	1550
25	2671	2643	2612	2572	2519	2418	2308	2148	1906	1668	1504
27.5	2746	2722	2695	2575	2504	2412	2303	2131	1894	1630	1457
30	2740	2711	2680	2644	2495	2434	2281	2119	1880	1596	1409
32.5	2877	2845	2744	2627	2566	2393	2262	2107	1866	1563	1352
35	2898	2873	2826	2726	2540	2412	2269	2075	1846	1510	1288
37.5	2885	2855	2797	2750	2588	2433	2235	2041	1813	1456	1229
40	2990	2963	2882	2689	2635	2391	2211	2016	1766	1399	1162
42.5	2961	2935	2876	2782	2546	2441	2223	1981	1717	1338	1091
45	2924	2893	2805	2755	2603	2440	2194	1947	1659	1272	1023
47.5	3006	2982	2886	2662	2617	2319	2127	1901	1591	1206	951
50	3031	3008	2902	2752	2494	2398	2153	1833	1528	1135	876
52.5	3092	3057	2906	2755	2549	2363	2073	1784	1455	1057	797
55	3175	3153	3038	2740	2550	2226	2014	1713	1371	978	719
57.5	3091	3073	2980	2836	2477	2283	2028	1641	1277	902	645
60	3091	3065	2918	2758	2555	2186	1885	1572	1188	825	573
62.5	3168	3154	3027	2737	2496	2152	1845	1477	1097	744	506
65	3111	3095	2995	2833	2469	2180	1752	1395	1009	663	439
67.5	3089	3067	2917	2723	2521	2060	1681	1304	925	582	377
70	3102	3095	2976	2727	2398	2092	1628	1215	849	506	322
72.5	3106	3086	2968	2793	2494	2027	1573	1122	770	437	271
75	3002	2991	2857	2637	2377	2015	1503	1038	704	373	227
77.5	2966	2955	2856	2682	2385	1936	1430	959	628	313	187
80	2927	2909	2764	2556	2291	1888	1343	883	559	256	155
82.5	2826	2809	2684	2472	2185	1760	1242	806	491	204	128
85	2538	2521	2411	2223	1953	1577	1125	731	425	161	105
87.5	2346	2330	2211	2026	1787	1405	989	637	359	129	87
90	2150	2133	2033	1847	1574	1233	852	550	292	107	75

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.

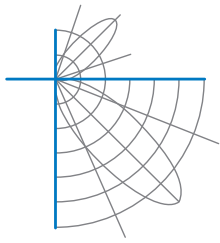


Report of Test

LLIA001413-002

Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles											
	0	5	15	25	35	45	55	65	75	85	90	
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	2150	2133	2033	1847	1574	1233	852	550	292	107	75
	92.5	1916	1901	1786	1610	1358	1060	728	457	234	92	67
	95	1644	1629	1528	1364	1165	908	622	377	196	82	62
	97.5	1416	1404	1320	1181	1012	778	535	324	172	75	57
	100	1231	1221	1144	1025	876	683	465	288	156	71	51
	102.5	1070	1059	995	894	766	598	412	259	146	68	49
	105	965	954	893	797	675	528	368	234	138	66	48
	107.5	867	862	815	720	600	465	329	211	130	62	47
	110	763	756	719	651	537	412	293	190	121	61	46
	112.5	676	670	632	570	481	367	259	170	113	59	45
	115	601	597	560	497	419	325	229	155	109	57	43
	117.5	530	525	492	436	362	287	206	148	106	54	41
	120	464	459	429	378	316	254	192	145	100	50	38
	122.5	404	400	374	330	280	232	181	138	92	45	35
	125	349	346	324	290	254	215	170	130	83	40	31
	127.5	302	299	282	258	233	198	158	118	70	35	28
	130	263	261	250	234	213	181	143	101	58	31	25
	132.5	238	237	229	215	193	161	123	84	51	27	22
	135	220	219	211	194	168	135	103	74	47	24	20
	137.5	199	198	188	168	140	113	91	69	42	21	17
	140	172	171	160	140	119	101	86	68	38	18	15
	142.5	142	141	133	120	107	97	86	66	33	15	12
	145	121	120	116	109	105	100	87	60	27	12	10
	147.5	112	112	112	112	111	103	82	51	21	10	8
	150	122	123	124	122	115	97	69	40	15	8	6
	152.5	130	130	127	118	103	81	54	30	9	6	5
	155	117	116	111	99	82	62	40	21	6	4	3
	157.5	93	92	87	76	61	45	29	14	4	3	2
	160	67	67	62	54	43	31	20	8	2	2	2
	162.5	45	45	42	37	30	22	12	3	2	0	0
165	31	31	29	26	20	14	7	0	0	0	0	
167.5	21	21	19	16	12	7	1	0	0	0	0	
170	12	12	10	8	5	2	0	0	0	0	0	
172.5	2	2	2	1	0	0	0	0	0	0	0	
175	0	0	0	0	0	0	0	0	0	0	0	
177.5	0	0	0	0	0	0	0	0	0	0	0	
180	0	0	0	0	0	0	0	0	0	0	0	



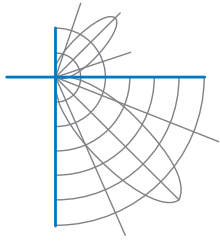
Report of Test

LLIA001413-002

Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles										
	90	95	105	115	125	135	145	155	165	175	180
0	1768	1768	1768	1768	1768	1768	1768	1768	1768	1768	1768
2.5	1756	1736	1699	1668	1639	1613	1584	1560	1548	1544	1544
5	1745	1708	1641	1575	1500	1432	1391	1351	1309	1295	1295
7.5	1734	1677	1571	1453	1355	1239	1169	1104	1060	1039	1038
10	1713	1638	1488	1345	1186	1066	953	879	825	802	801
12.5	1687	1598	1404	1209	1037	881	771	699	658	641	641
15	1659	1554	1322	1094	889	732	635	584	558	547	546
17.5	1624	1503	1238	974	756	620	549	506	489	484	483
20	1587	1446	1137	861	650	542	483	460	447	442	442
22.5	1550	1390	1047	758	569	481	443	419	407	401	401
25	1504	1325	962	671	509	438	404	380	367	361	361
27.5	1457	1261	881	593	456	400	367	342	330	326	327
30	1409	1194	802	529	415	364	332	310	299	297	297
32.5	1352	1124	730	477	379	332	302	282	273	271	272
35	1288	1051	663	436	346	301	276	258	250	253	254
37.5	1229	983	602	393	318	276	252	239	234	238	239
40	1162	918	547	359	293	253	230	222	219	222	222
42.5	1091	853	499	329	271	231	211	206	200	202	202
45	1023	789	451	301	250	212	194	186	180	181	181
47.5	951	721	404	277	229	195	175	165	159	160	160
50	876	656	362	255	206	178	155	145	139	139	139
52.5	797	589	325	234	185	159	135	125	119	119	119
55	719	527	292	214	166	140	116	105	100	99	99
57.5	645	467	262	193	148	121	98	86	81	79	79
60	573	412	238	172	130	102	80	67	62	60	59
62.5	506	364	216	151	112	85	62	49	44	41	41
65	439	316	196	134	96	68	45	32	26	23	22
67.5	377	272	176	119	81	53	30	15	8	3	3
70	322	234	156	104	66	39	15	1	0	0	0
72.5	271	201	139	91	54	26	6	0	0	0	0
75	227	175	119	78	42	18	5	0	0	0	0
77.5	187	151	103	67	34	15	4	0	0	0	0
80	155	129	90	57	30	13	3	0	0	0	0
82.5	128	109	79	51	27	12	3	0	0	0	0
85	105	93	70	47	25	10	2	0	0	0	0
87.5	87	80	63	43	23	9	2	0	0	0	0
90	75	69	57	39	21	8	2	0	0	0	0

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.

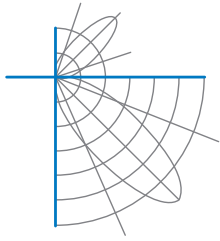


Report of Test

LLIA001413-002

Luminous Intensity (Candela) Table

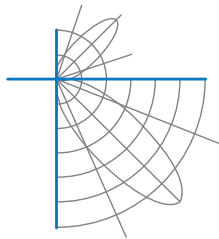
	Lateral (C-Plane) Angles											
	90	95	105	115	125	135	145	155	165	175	180	
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	75	69	57	39	21	8	2	0	0	0	0
	92.5	67	60	51	35	18	7	2	0	0	0	0
	95	62	54	46	32	16	6	0	0	0	0	0
	97.5	57	50	41	28	14	6	0	0	0	0	0
	100	51	47	38	25	13	5	0	0	0	0	0
	102.5	49	44	35	23	12	5	0	0	0	0	0
	105	48	42	32	20	11	5	0	0	0	0	0
	107.5	47	40	30	18	10	4	0	0	0	0	0
	110	46	39	28	17	9	4	0	0	0	0	0
	112.5	45	38	26	15	8	4	0	0	0	0	0
	115	43	36	24	14	8	4	0	0	0	0	0
	117.5	41	34	22	13	7	4	0	0	0	0	0
	120	38	32	20	12	7	4	0	0	0	0	0
	122.5	35	29	18	11	6	4	0	0	0	0	0
	125	31	26	17	10	6	4	0	0	0	0	0
	127.5	28	24	15	9	6	4	0	0	0	0	0
	130	25	21	14	9	5	4	0	0	0	0	0
	132.5	22	19	12	8	5	4	0	0	0	0	0
	135	20	16	11	7	4	4	0	0	0	0	0
	137.5	17	14	9	6	4	4	0	0	0	0	0
	140	15	12	8	5	3	4	0	0	0	0	0
	142.5	12	10	6	4	3	3	0	0	0	0	0
	145	10	8	5	3	3	3	0	0	0	0	0
	147.5	8	7	4	3	3	3	0	0	0	0	0
	150	6	5	3	2	2	3	0	0	0	0	0
	152.5	5	4	2	2	2	2	0	0	0	0	0
	155	3	3	2	2	2	2	0	0	0	0	0
	157.5	2	2	1	1	0	0	0	0	0	0	0
	160	2	0	0	0	0	0	0	0	0	0	0
	162.5	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	
167.5	0	0	0	0	0	0	0	0	0	0	0	
170	0	0	0	0	0	0	0	0	0	0	0	
172.5	0	0	0	0	0	0	0	0	0	0	0	
175	0	0	0	0	0	0	0	0	0	0	0	
177.5	0	0	0	0	0	0	0	0	0	0	0	
180	0	0	0	0	0	0	0	0	0	0	0	



Report of Test
LLIA001413-002

Additional Pictures of Test Subject





Report of Test

LLIA001413-002

Test Distance 9.5 m
Ambient Temperature 24.5 °C

Notes

The laboratory has not participated in the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.

Tested in accordance with the applicable sections of publications: IES LM-79-19. Format of reports and angular increments based on IES LM-31-95 and LM-10-96.

The luminous intensity values, and other derived quantities, contained in this report are based on the absolute data, as measured.

Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

This report is free of erasures and corrections.

Photometric intensity values are reported using the IES C-Type spherical coordinate system as defined in IES LM-75-01.

This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with ‡ are not covered.

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the Federal Government.