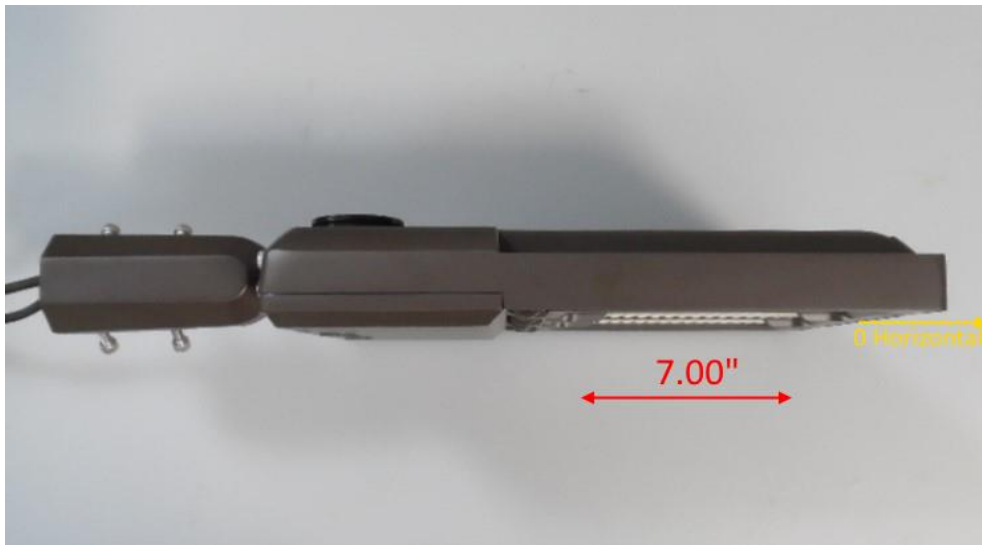


Report of Test

LLIA002251-028

Roadway/Area Light Distribution Photometry Test Report

Catalog Number: ARL-150PCS-SWO - T5 Optics - 70W - 4000K Setting
Pole mounted, cast aluminum housing, white LED board with
frosted plastic enclosure with clear optic sections below each LED.
288 white LEDs, 144 CW LEDs and 144 WW LEDs
One Sosen SS-160NH-E260BH LED driver



Prepared For:
Topaz Lighting Corp
925 Waverly Avenue
Holtsville, NY 11742, USA

Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	11055.6 Lumens
Input Current	0.5723 A	Total Efficacy	161.4 Lm/W
Input Power	68.50 W		
Frequency	60.00 Hz		
Power Factor	0.997	Roadway Type	Area Light
Current THD	4.6 %		

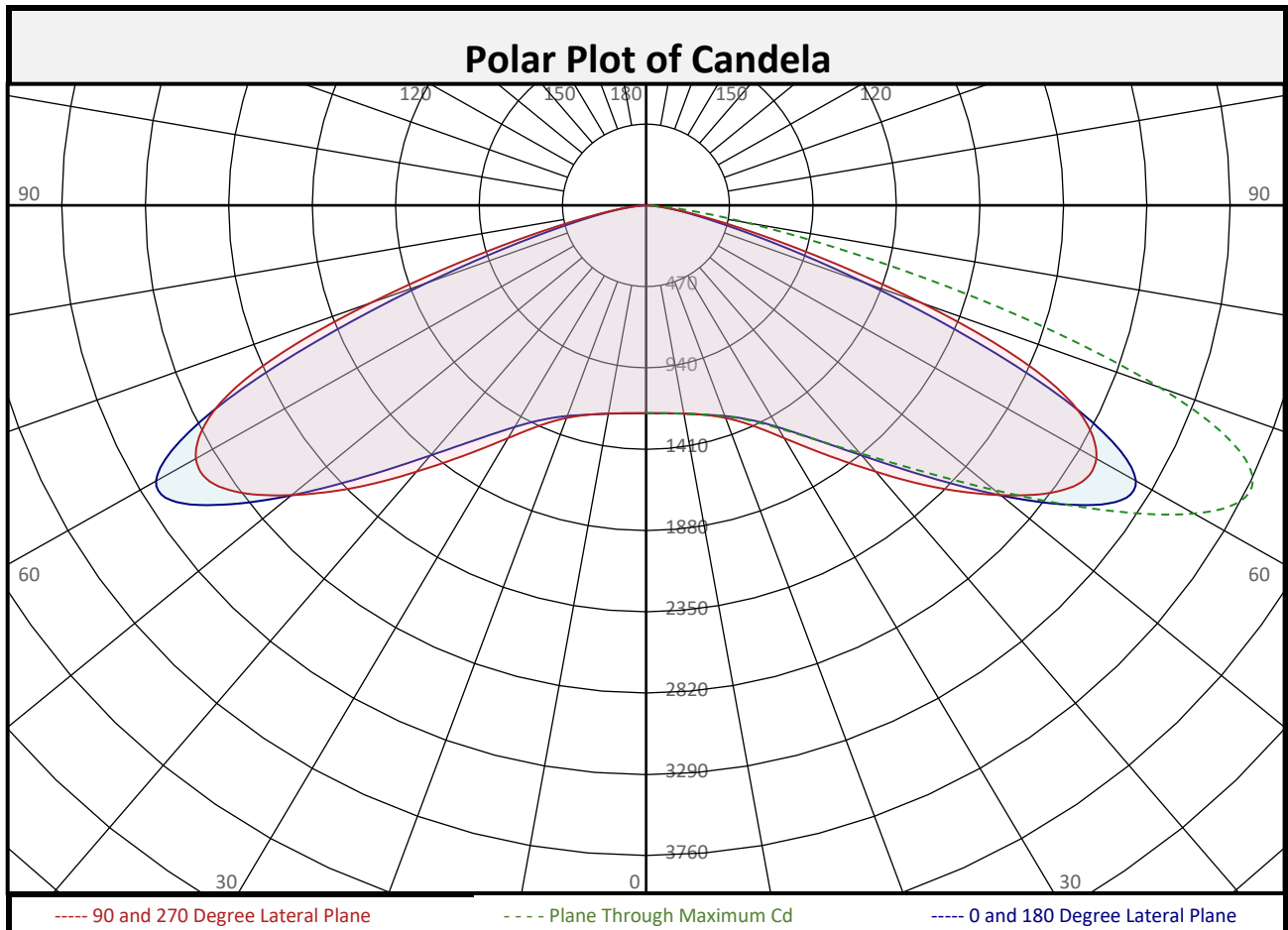
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 10/31/2023
Report date: 11/06/2023

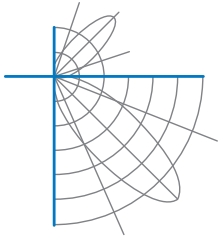
Signed: _____



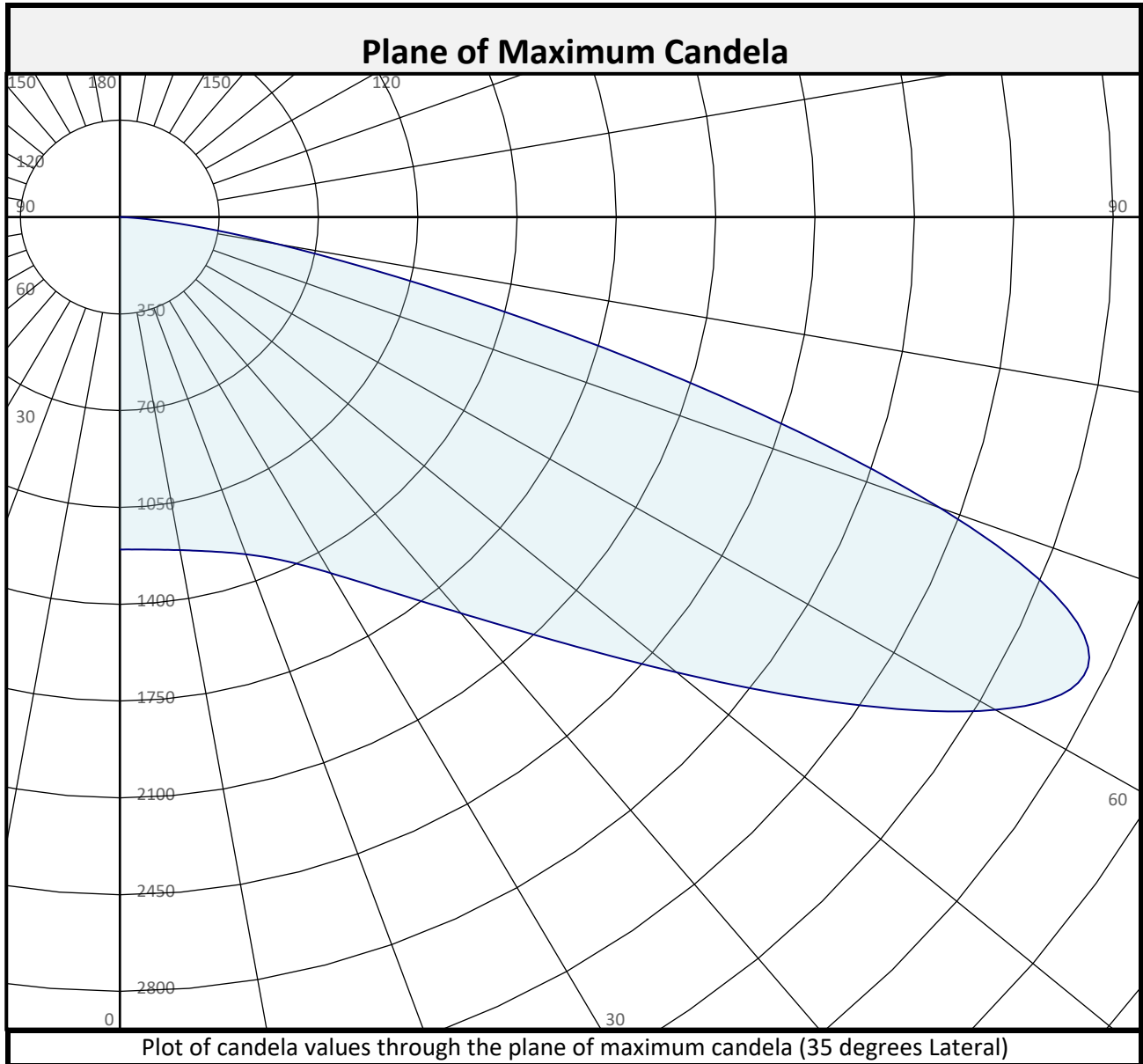
Report of Test LLIA002251-028



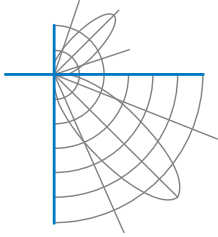
Zonal Flux Summary										
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	115.8	1.0%		90-100	0.0	0.0%		0-20	473.0	4.3%
10-20	357.2	3.2%		100-110	0.0	0.0%		0-30	1119	10.1%
20-30	645.9	5.8%		110-120	0.0	0.0%		0-40	2189	19.8%
30-40	1070	9.7%		120-130	0.0	0.0%		0-60	6613	59.8%
40-50	1738	15.7%		130-140	0.0	0.0%		0-80	10924	98.8%
50-60	2686	24.3%		140-150	0.0	0.0%		10-90	10940	99.0%
60-70	3018	27.3%		150-160	0.0	0.0%		20-50	3454	31.2%
70-80	1292	11.7%		160-170	0.0	0.0%		40-90	8867	80.2%
80-90	132.1	1.2%		170-180	0.0	0.0%		60-90	4443	40.2%
0-90	11056	100.0%		90-180	0.0	0.0%		0-180	11056	100.0%



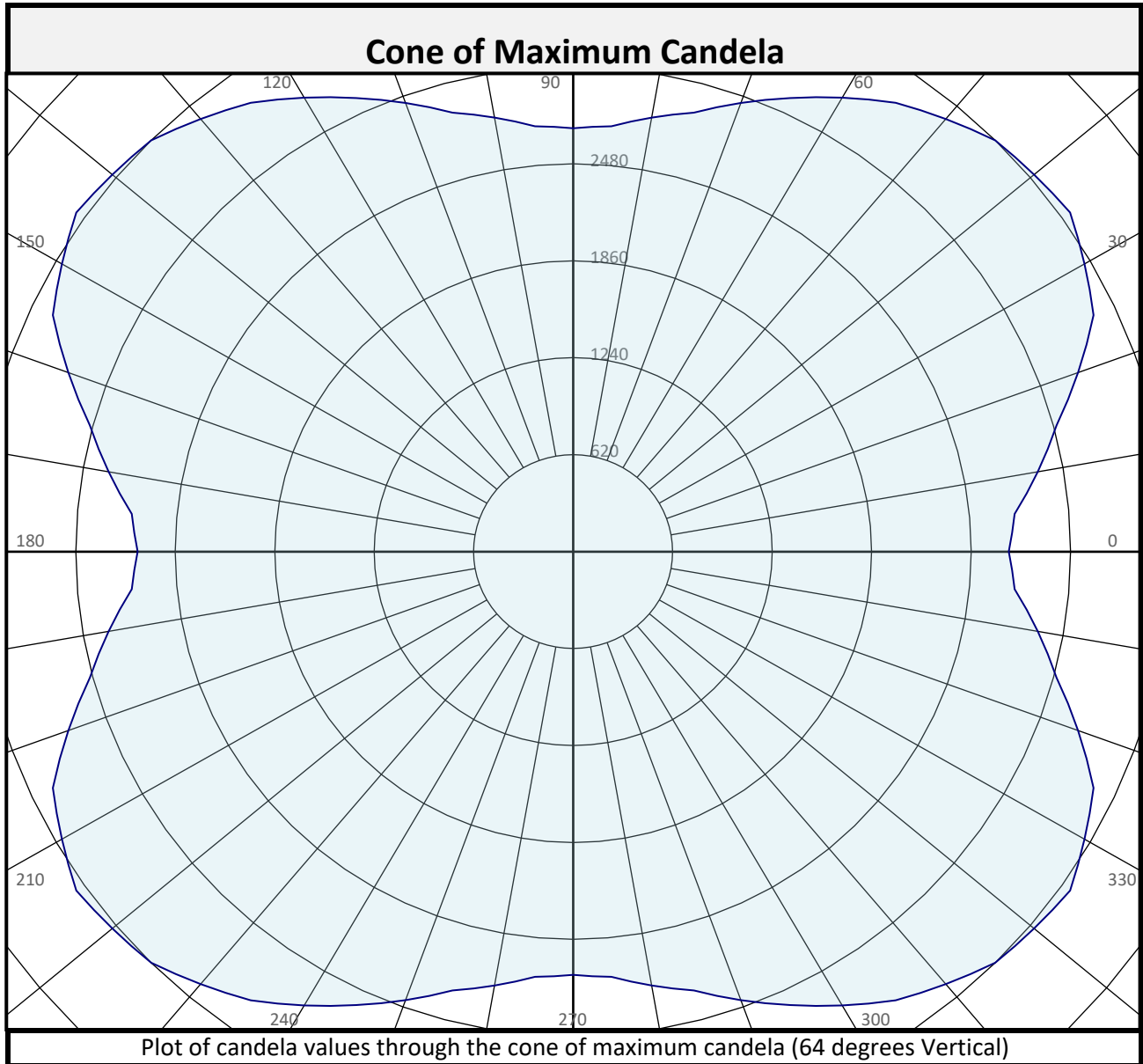
Report of Test
LLIA002251-028



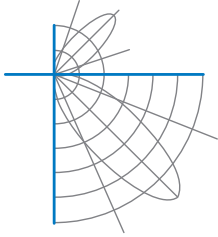
Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	5527.8	50.0%	0.0	0.0%	5527.8	50.0%
House Side	5527.8	50.0%	0.0	0.0%	5527.8	50.0%
Total	11055.6	100.0%	0.0	0.0%	11055.6	100.0%



Report of Test
LLIA002251-028

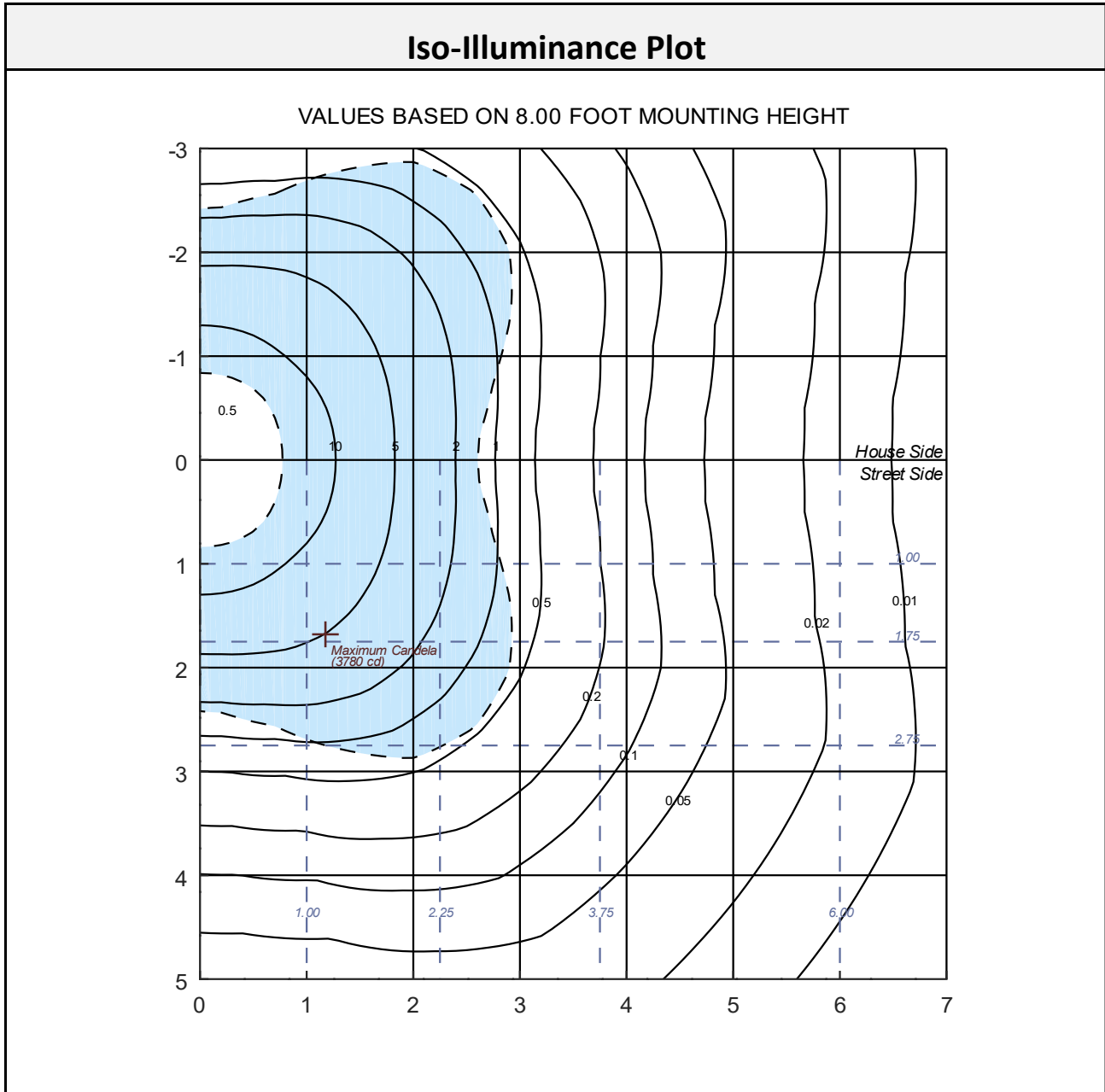


Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	5527.8	50.0%	0.0	0.0%	5527.8	50.0%
House Side	5527.8	50.0%	0.0	0.0%	5527.8	50.0%
Total	11055.6	100.0%	0.0	0.0%	11055.6	100.0%

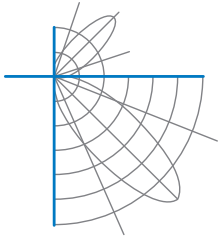


Report of Test

LLIA002251-028

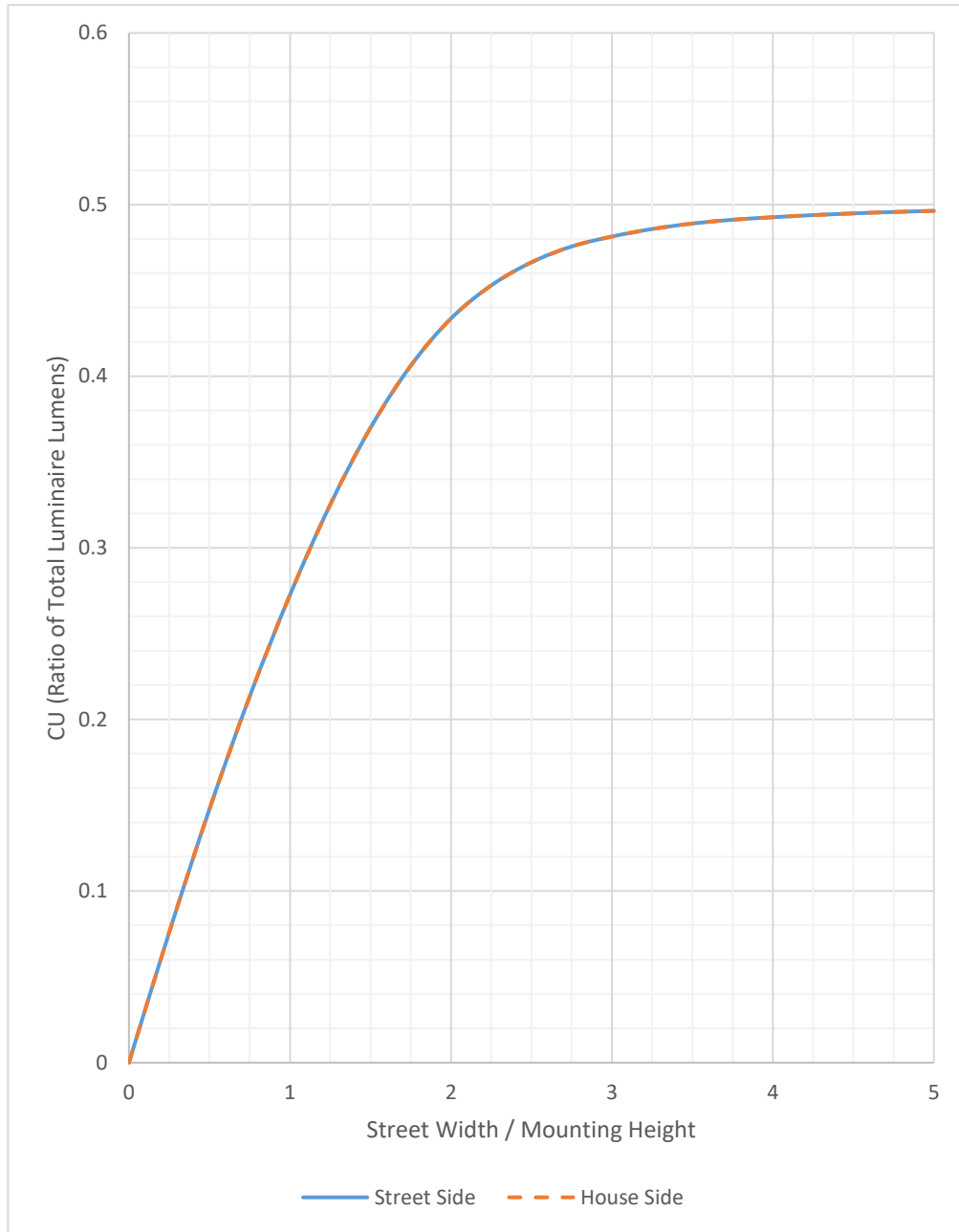


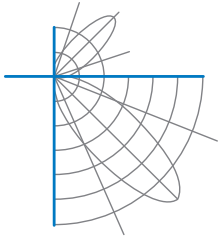
The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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



Report of Test LLIA002251-028

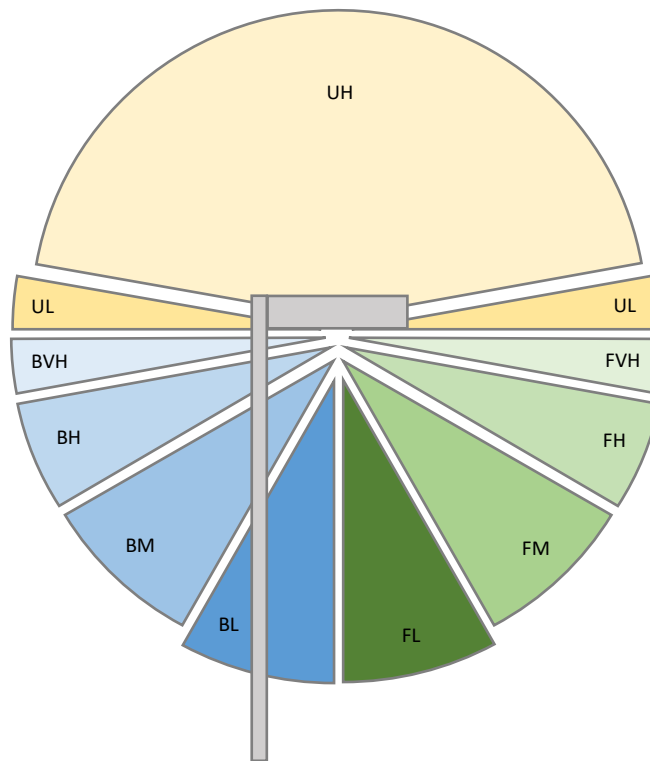
Coefficients of Utilization Plot





Report of Test LLIA002251-028

LCS Tables and Bug Classification



Back Light

BL - Back Low (0°-30°)	559.5 Lm
BM - Back Mid (30°-60°)	2747.0 Lm
BH - Back High (60°-80°)	2155.2 Lm
BVH - Back Very High (80°-90°)	66.0 Lm

Forward Light

FL - Forward Low (0°-30°)	559.5 Lm
FM - Forward Mid (30°-60°)	2747.0 Lm
FH - Forward High (60°-80°)	2155.2 Lm
FVH - Forward Very High (80°-90°)	66.0 Lm

Uplight

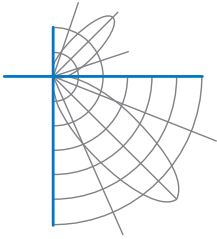
UL - Upward Low (90°-100°)	0.0 Lm
UH - Upward High (100°-180°)	0.0 Lm

BUG Rating: Asymmetrical Luminaire (Type I, II, III, and IV)

B3 - U0 - G3

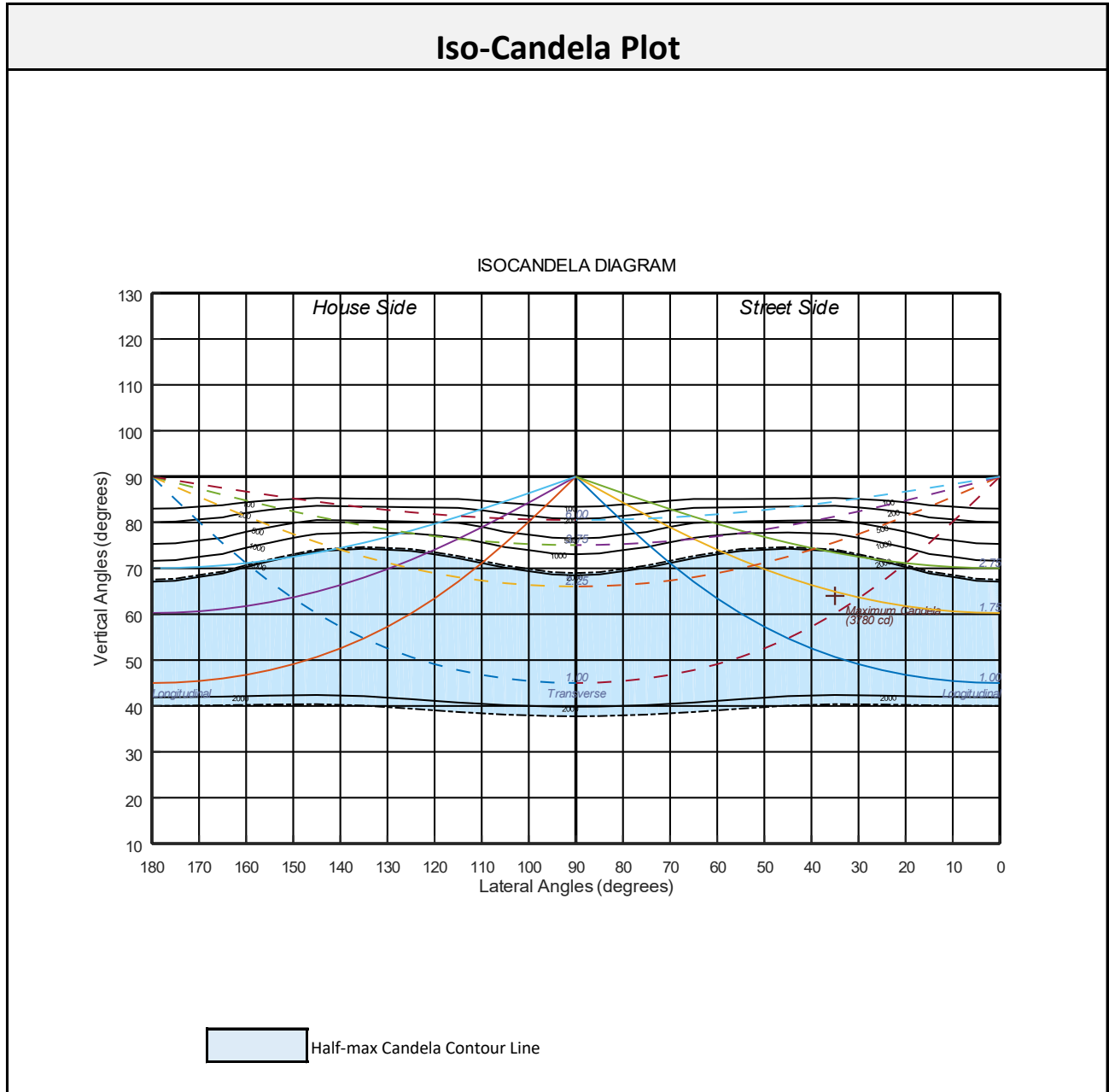
BUG Rating: Quadrilateral Symmetrical Luminaire (Type V, Type VS)

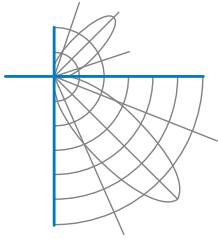
B3 - U0 - G2



Report of Test
LLIA002251-028

Iso-Candela Plot





Report of Test

LLIA002251-028

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.	0	1202	1202	1202	1202	1202	1202	1202	1202	1202	1202	1202
	2.5	1204	1203	1203	1203	1203	1203	1204	1203	1203	1203	1203
	5	1208	1208	1207	1207	1207	1207	1207	1207	1206	1206	1206
	7.5	1215	1214	1215	1214	1214	1213	1214	1213	1213	1213	1213
	10	1224	1224	1224	1224	1223	1223	1223	1223	1222	1223	1222
	12.5	1237	1237	1237	1236	1236	1236	1236	1236	1235	1236	1236
	15	1253	1253	1253	1253	1252	1252	1253	1253	1254	1254	1254
	17.5	1274	1273	1273	1273	1272	1273	1275	1276	1277	1278	1278
	20	1297	1297	1297	1297	1298	1300	1303	1306	1308	1308	1309
	22.5	1328	1328	1328	1328	1330	1334	1339	1344	1348	1350	1350
	25	1368	1367	1367	1368	1371	1377	1385	1393	1399	1403	1403
	27.5	1418	1418	1418	1419	1423	1431	1443	1454	1465	1470	1471
	30	1481	1481	1481	1482	1487	1496	1513	1530	1544	1552	1554
	32.5	1558	1558	1558	1558	1562	1574	1595	1618	1637	1648	1650
	35	1651	1651	1649	1648	1651	1665	1690	1718	1742	1756	1758
	37.5	1760	1759	1756	1752	1753	1768	1798	1831	1859	1875	1877
	40	1889	1887	1882	1873	1870	1886	1920	1959	1990	2008	2009
	42.5	2039	2037	2029	2015	2006	2020	2059	2102	2135	2151	2154
	45	2211	2210	2200	2181	2165	2177	2218	2262	2291	2304	2306
	47.5	2404	2401	2394	2373	2350	2356	2397	2435	2452	2455	2457
50	2611	2610	2606	2589	2561	2559	2591	2614	2613	2607	2606	
52.5	2825	2824	2835	2829	2798	2785	2796	2796	2772	2752	2750	
55	3024	3029	3061	3079	3054	3024	3003	2974	2918	2874	2869	
57.5	3174	3183	3258	3326	3318	3263	3207	3132	3023	2949	2939	
60	3186	3210	3369	3529	3563	3487	3384	3236	3057	2943	2928	
62.5	2962	3002	3289	3620	3740	3663	3494	3248	2995	2840	2821	
65	2506	2556	2951	3497	3769	3724	3480	3144	2824	2628	2602	
67.5	1899	1947	2369	3092	3565	3587	3299	2893	2502	2245	2206	
70	1319	1356	1707	2446	3077	3193	2913	2475	2031	1699	1654	
72.5	855	881	1123	1737	2369	2547	2338	1933	1454	1143	1108	
75	530	546	693	1116	1623	1783	1683	1350	924	710	686	
77.5	330	339	422	677	1000	1076	1028	844	546	419	406	
80	203	208	254	399	569	561	528	486	317	248	241	
82.5	114	117	143	215	291	275	260	247	171	135	132	
85	48	49	62	93	117	109	105	105	77	59	57	
87.5	4	4	6	10	15	18	24	28	22	16	16	
90	0	0	0	0	0	0	0	0	0	0	0	

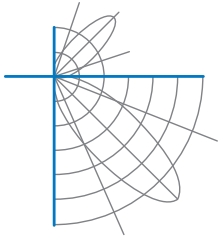


Report of Test

LLIA002251-028

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	0	0	0	0	0	0	0	0	0	0	0
	92.5	0	0	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0	0	0
	97.5	0	0	0	0	0	0	0	0	0	0	0
	100	0	0	0	0	0	0	0	0	0	0	0
	102.5	0	0	0	0	0	0	0	0	0	0	0
	105	0	0	0	0	0	0	0	0	0	0	0
	107.5	0	0	0	0	0	0	0	0	0	0	0
	110	0	0	0	0	0	0	0	0	0	0	0
	112.5	0	0	0	0	0	0	0	0	0	0	0
	115	0	0	0	0	0	0	0	0	0	0	0
	117.5	0	0	0	0	0	0	0	0	0	0	0
	120	0	0	0	0	0	0	0	0	0	0	0
	122.5	0	0	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0	0	0
	127.5	0	0	0	0	0	0	0	0	0	0	0
	130	0	0	0	0	0	0	0	0	0	0	0
	132.5	0	0	0	0	0	0	0	0	0	0	0
	135	0	0	0	0	0	0	0	0	0	0	0
	137.5	0	0	0	0	0	0	0	0	0	0	0
	140	0	0	0	0	0	0	0	0	0	0	0
	142.5	0	0	0	0	0	0	0	0	0	0	0
	145	0	0	0	0	0	0	0	0	0	0	0
	147.5	0	0	0	0	0	0	0	0	0	0	0
	150	0	0	0	0	0	0	0	0	0	0	0
	152.5	0	0	0	0	0	0	0	0	0	0	0
	155	0	0	0	0	0	0	0	0	0	0	0
	157.5	0	0	0	0	0	0	0	0	0	0	0
	160	0	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	

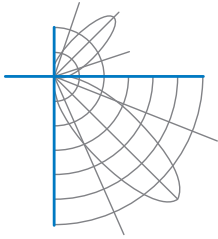


Report of Test

LLIA002251-028

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.	0	1202	1202	1202	1202	1202	1202	1202	1202	1202	1202	1202
	2.5	1203	1203	1203	1203	1204	1203	1203	1203	1203	1203	1204
	5	1206	1206	1206	1207	1207	1207	1207	1207	1207	1208	1208
	7.5	1213	1213	1213	1213	1214	1213	1214	1214	1215	1214	1215
	10	1222	1223	1222	1223	1223	1223	1223	1224	1224	1224	1224
	12.5	1236	1236	1235	1236	1236	1236	1236	1236	1237	1237	1237
	15	1254	1254	1254	1253	1253	1252	1252	1253	1253	1253	1253
	17.5	1278	1278	1277	1276	1275	1273	1272	1273	1273	1273	1274
	20	1309	1308	1308	1306	1303	1300	1298	1297	1297	1297	1297
	22.5	1350	1350	1348	1344	1339	1334	1330	1328	1328	1328	1328
	25	1403	1403	1399	1393	1385	1377	1371	1368	1367	1367	1368
	27.5	1471	1470	1465	1454	1443	1431	1423	1419	1418	1418	1418
	30	1554	1552	1544	1530	1513	1496	1487	1482	1481	1481	1481
	32.5	1650	1648	1637	1618	1595	1574	1562	1558	1558	1558	1558
	35	1758	1756	1742	1718	1690	1665	1651	1648	1649	1651	1651
	37.5	1877	1875	1859	1831	1798	1768	1753	1752	1756	1759	1760
	40	2009	2008	1990	1959	1920	1886	1870	1873	1882	1887	1889
	42.5	2154	2151	2135	2102	2059	2020	2006	2015	2029	2037	2039
	45	2306	2304	2291	2262	2218	2177	2165	2181	2200	2210	2211
	47.5	2457	2455	2452	2435	2397	2356	2350	2373	2394	2401	2404
50	2606	2607	2613	2614	2591	2559	2561	2589	2606	2610	2611	
52.5	2750	2752	2772	2796	2796	2785	2798	2829	2835	2824	2825	
55	2869	2874	2918	2974	3003	3024	3054	3079	3061	3029	3024	
57.5	2939	2949	3023	3132	3207	3263	3318	3326	3258	3183	3174	
60	2928	2943	3057	3236	3384	3487	3563	3529	3369	3210	3186	
62.5	2821	2840	2995	3248	3494	3663	3740	3620	3289	3002	2962	
65	2602	2628	2824	3144	3480	3724	3769	3497	2951	2556	2506	
67.5	2206	2245	2502	2893	3299	3587	3565	3092	2369	1947	1899	
70	1654	1699	2031	2475	2913	3193	3077	2446	1707	1356	1319	
72.5	1108	1143	1454	1933	2338	2547	2369	1737	1123	881	855	
75	686	710	924	1350	1683	1783	1623	1116	693	546	530	
77.5	406	419	546	844	1028	1076	1000	677	422	339	330	
80	241	248	317	486	528	561	569	399	254	208	203	
82.5	132	135	171	247	260	275	291	215	143	117	114	
85	57	59	77	105	105	109	117	93	62	49	48	
87.5	16	16	22	28	24	18	15	10	6	4	4	
90	0	0	0	0	0	0	0	0	0	0	0	

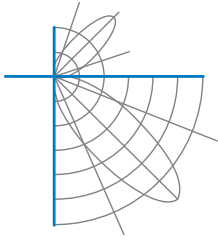


Report of Test

LLIA002251-028

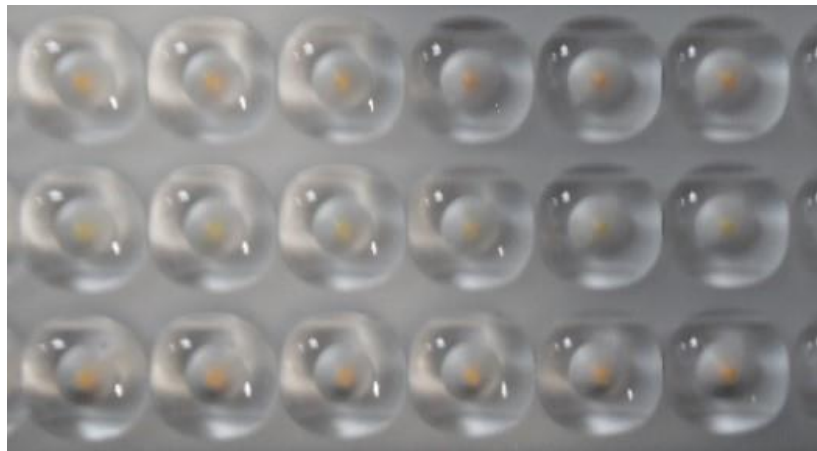
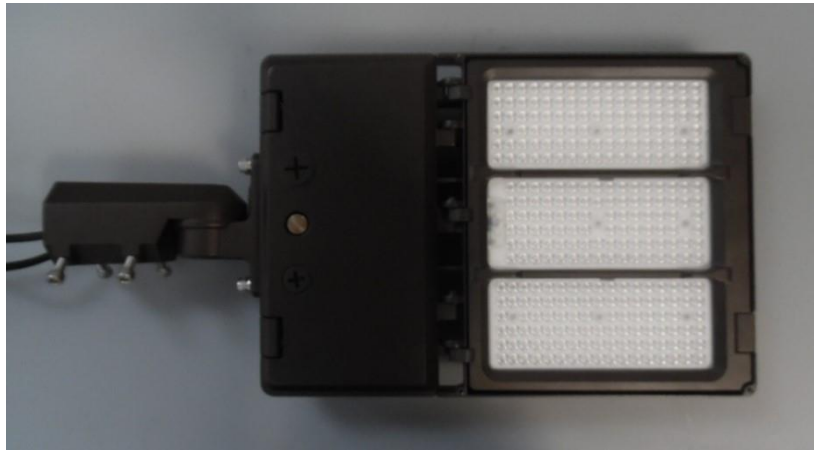
Luminous Intensity (Candela) Table

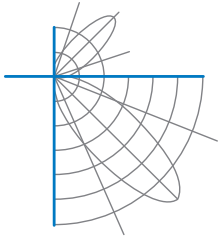
	Lateral (C-Plane) Angles											
	90	95	105	115	125	135	145	155	165	175	180	
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	0	0	0	0	0	0	0	0	0	0	0
	92.5	0	0	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0	0	0
	97.5	0	0	0	0	0	0	0	0	0	0	0
	100	0	0	0	0	0	0	0	0	0	0	0
	102.5	0	0	0	0	0	0	0	0	0	0	0
	105	0	0	0	0	0	0	0	0	0	0	0
	107.5	0	0	0	0	0	0	0	0	0	0	0
	110	0	0	0	0	0	0	0	0	0	0	0
	112.5	0	0	0	0	0	0	0	0	0	0	0
	115	0	0	0	0	0	0	0	0	0	0	0
	117.5	0	0	0	0	0	0	0	0	0	0	0
	120	0	0	0	0	0	0	0	0	0	0	0
	122.5	0	0	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0	0	0
	127.5	0	0	0	0	0	0	0	0	0	0	0
	130	0	0	0	0	0	0	0	0	0	0	0
	132.5	0	0	0	0	0	0	0	0	0	0	0
	135	0	0	0	0	0	0	0	0	0	0	0
	137.5	0	0	0	0	0	0	0	0	0	0	0
	140	0	0	0	0	0	0	0	0	0	0	0
	142.5	0	0	0	0	0	0	0	0	0	0	0
	145	0	0	0	0	0	0	0	0	0	0	0
	147.5	0	0	0	0	0	0	0	0	0	0	0
	150	0	0	0	0	0	0	0	0	0	0	0
	152.5	0	0	0	0	0	0	0	0	0	0	0
	155	0	0	0	0	0	0	0	0	0	0	0
	157.5	0	0	0	0	0	0	0	0	0	0	0
	160	0	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
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Additional Pictures of Test Subject





Report of Test

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Test Distance 9.5 m
Ambient Temperature 24.8 °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-31-20 and LM-10-20.

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

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-75-19.

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.

The device under test emits no detectable uplight, as defined by ANSI/IES LM-31-20. For the purpose of this report, certain non-zero uplight readings, attributable to instrument artifacts, have been assigned a zero value.