

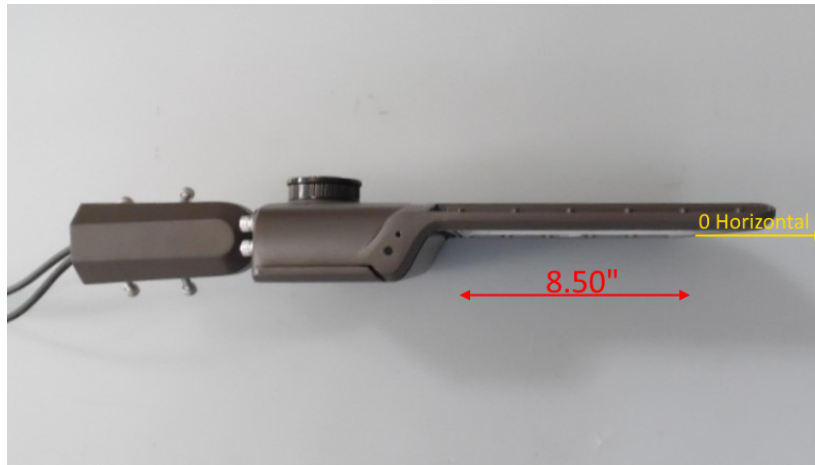


Report of Test

LLIA002251-004

Roadway/Area Light Distribution Photometry Test Report

Catalog Number: ARL-150PCS-T4 - 70W Setting - 4000K Setting
Pole mounted, cast aluminum housing, white LED board with
frosted plastic enclosure with clear optic sections below LEDs.
364 white LEDs, 182 CW LEDs and 182 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	11305.6 Lumens
Input Current	0.5713 A	Total Efficacy	165.4 Lm/W
Input Power	68.35 W		
Frequency	60.00 Hz	Roadway Throw	Short
Power Factor	0.997	Roadway Type	Type IV
Current THD	5.3 %		

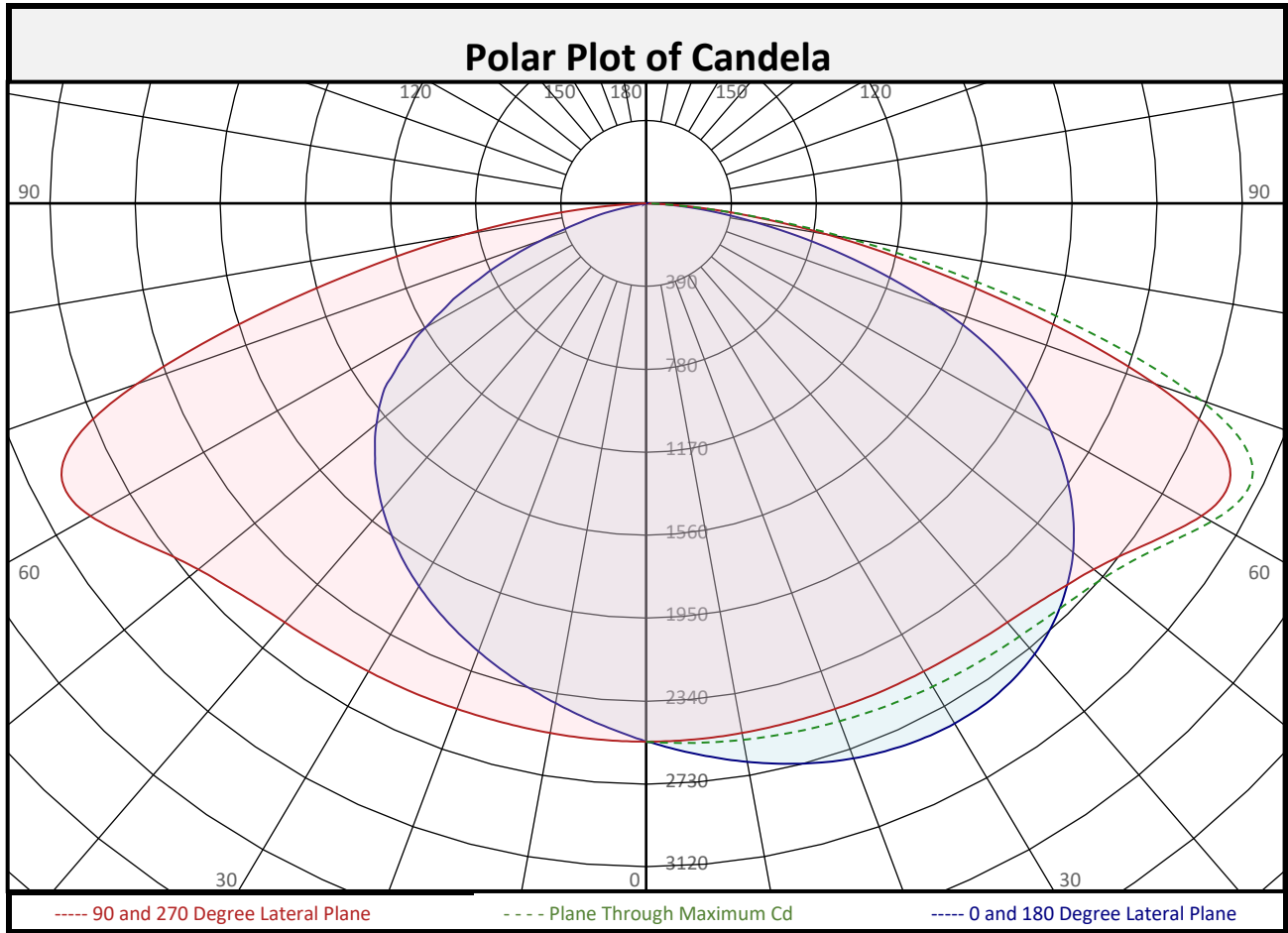
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 11/06/2023
Report date: 11/08/2023

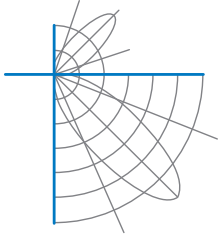
Signed: _____



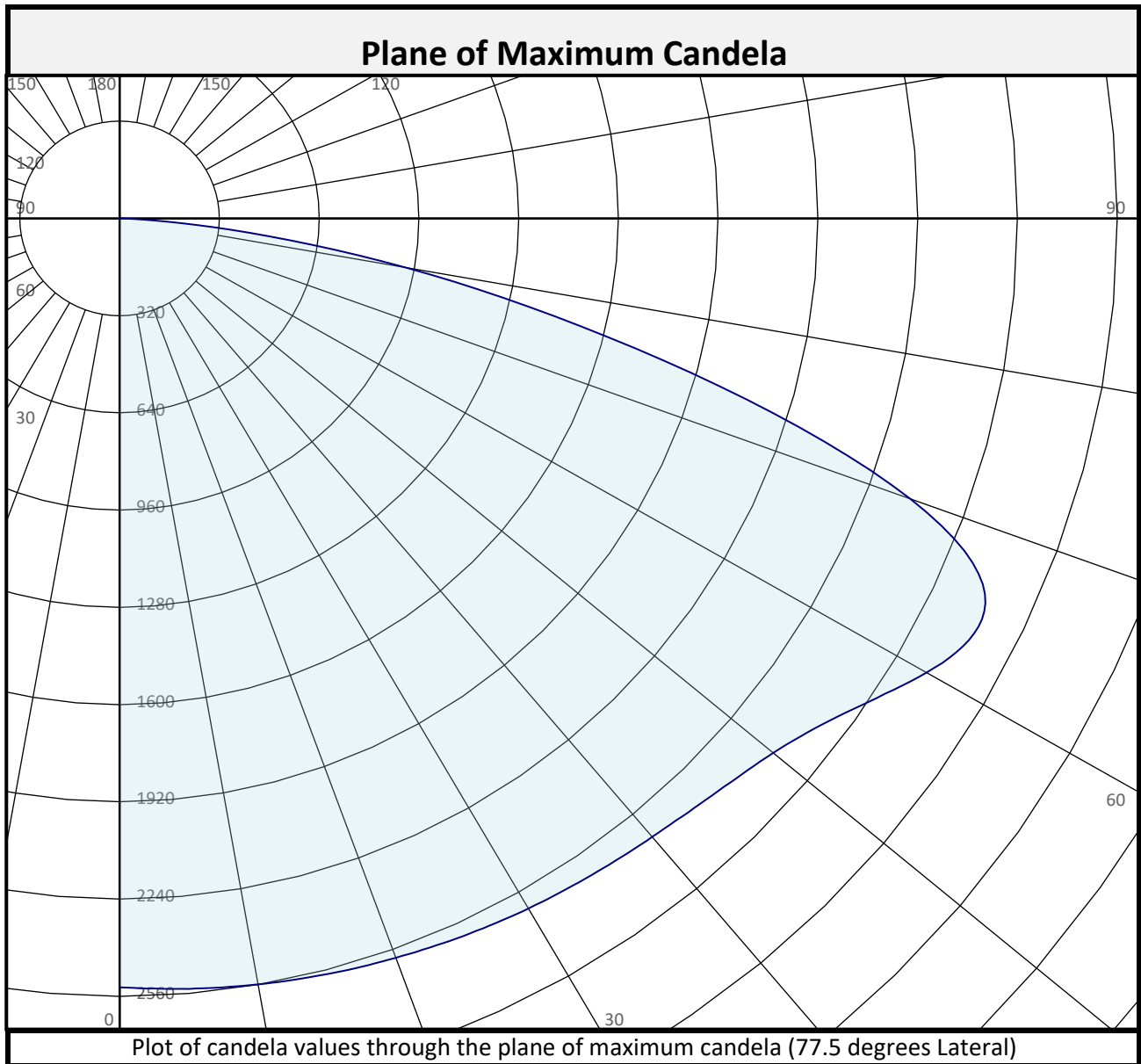
Report of Test
LLIA002251-004



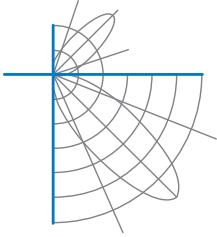
Zonal Flux Summary								
Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	241.6	2.1%	90-100	0.0	0.0%	0-20	957.7	8.5%
10-20	716.1	6.3%	100-110	0.0	0.0%	0-30	2121	18.8%
20-30	1163	10.3%	110-120	0.0	0.0%	0-40	3678	32.5%
30-40	1557	13.8%	120-130	0.0	0.0%	0-60	7613	67.3%
40-50	1866	16.5%	130-140	0.0	0.0%	0-80	11011	97.4%
50-60	2068	18.3%	140-150	0.0	0.0%	10-90	11064	97.9%
60-70	2053	18.2%	150-160	0.0	0.0%	20-50	4586	40.6%
70-80	1345	11.9%	160-170	0.0	0.0%	40-90	7628	67.5%
80-90	294.3	2.6%	170-180	0.0	0.0%	60-90	3693	32.7%
0-90	11306	100.0%	90-180	0.0	0.0%	0-180	11306	100.0%



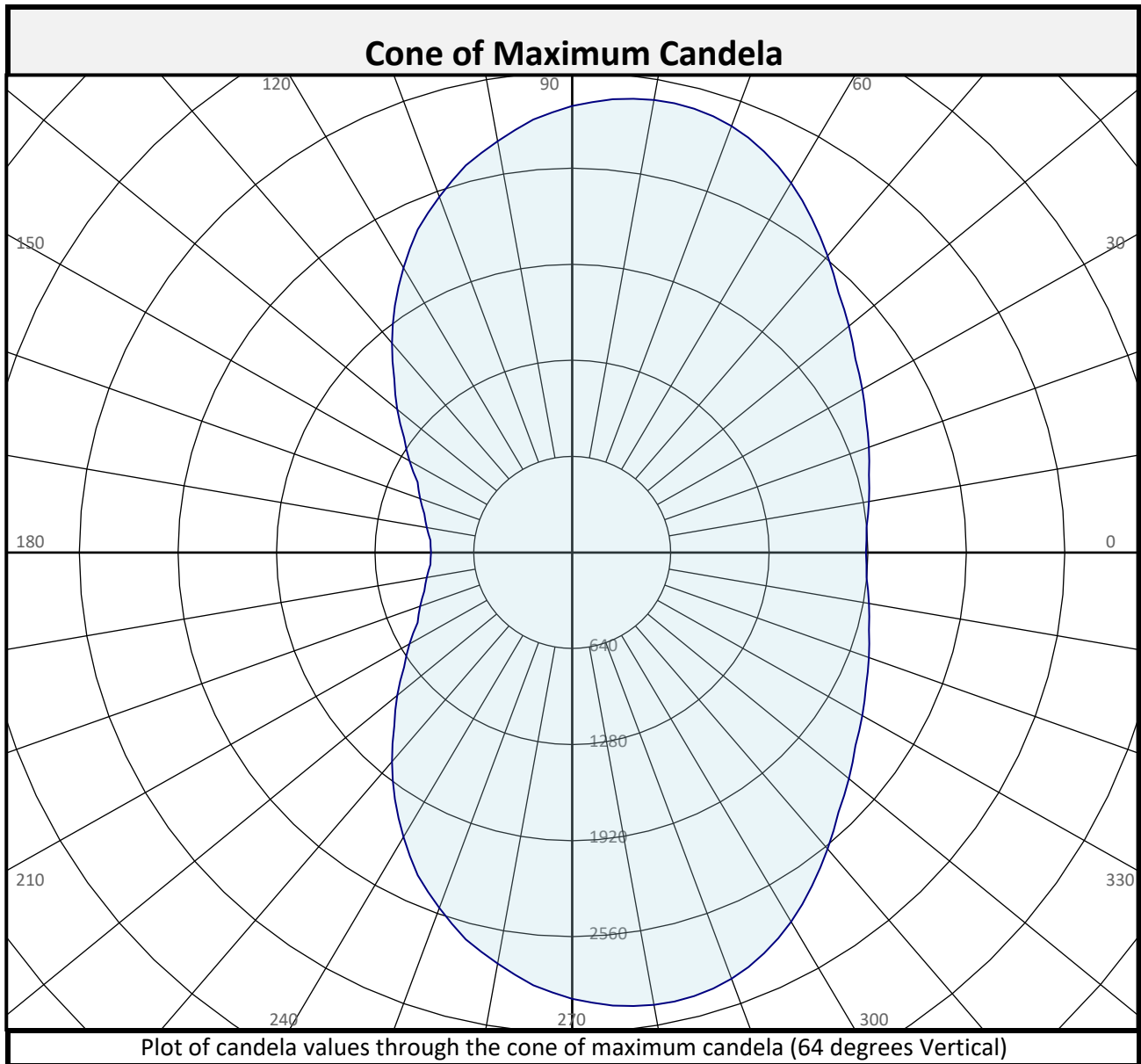
Report of Test
LLIA002251-004



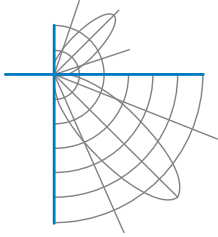
Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	6463.0	57.2%	0.0	0.0%	6463.0	57.2%
House Side	4842.5	42.8%	0.0	0.0%	4842.5	42.8%
Total	11305.6	100.0%	0.0	0.0%	11305.6	100.0%



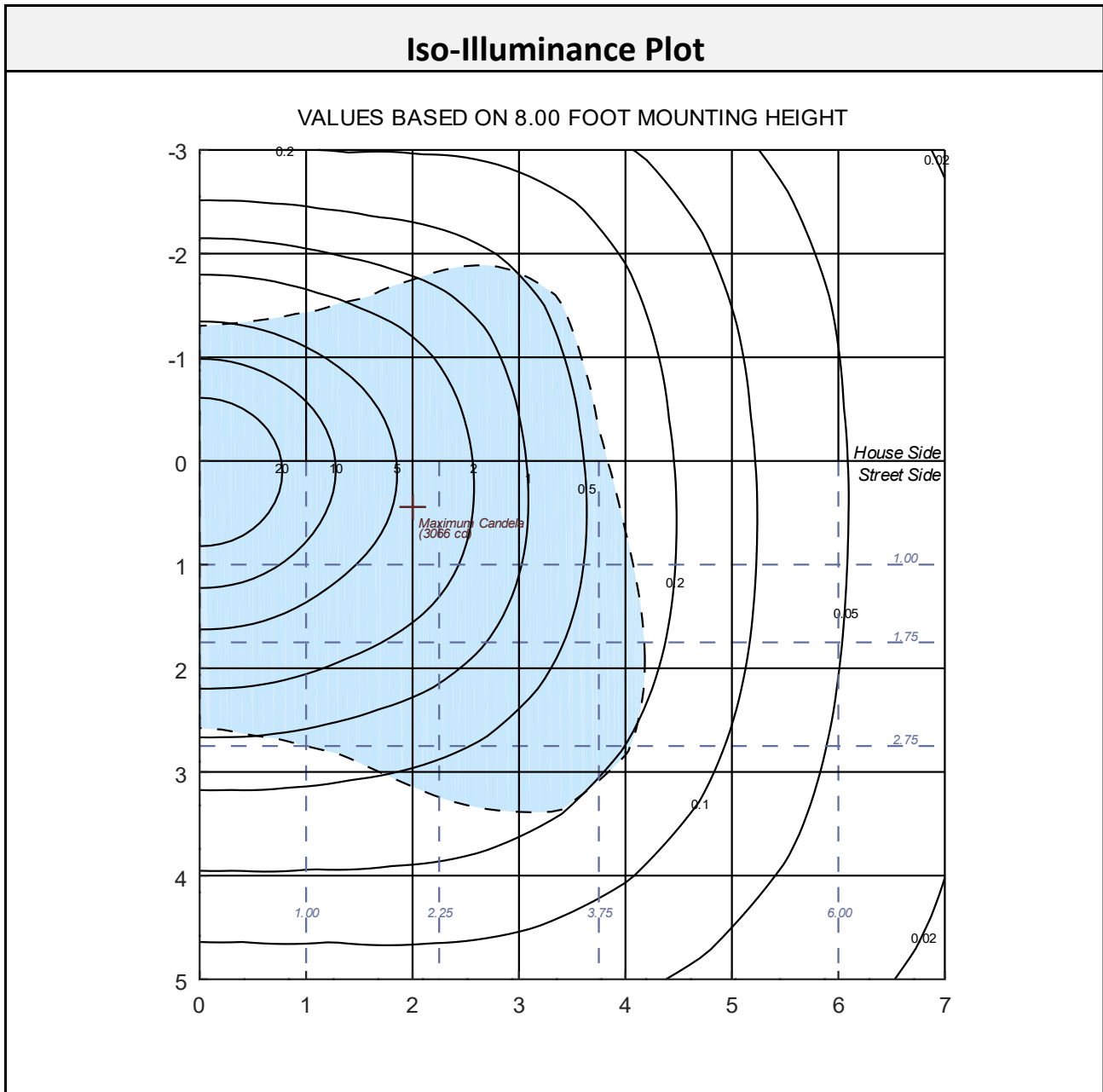
Report of Test
LLIA002251-004



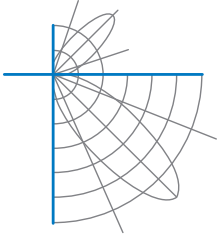
Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	6463.0	57.2%	0.0	0.0%	6463.0	57.2%
House Side	4842.5	42.8%	0.0	0.0%	4842.5	42.8%
Total	11305.6	100.0%	0.0	0.0%	11305.6	100.0%



Report of Test
LLIA002251-004

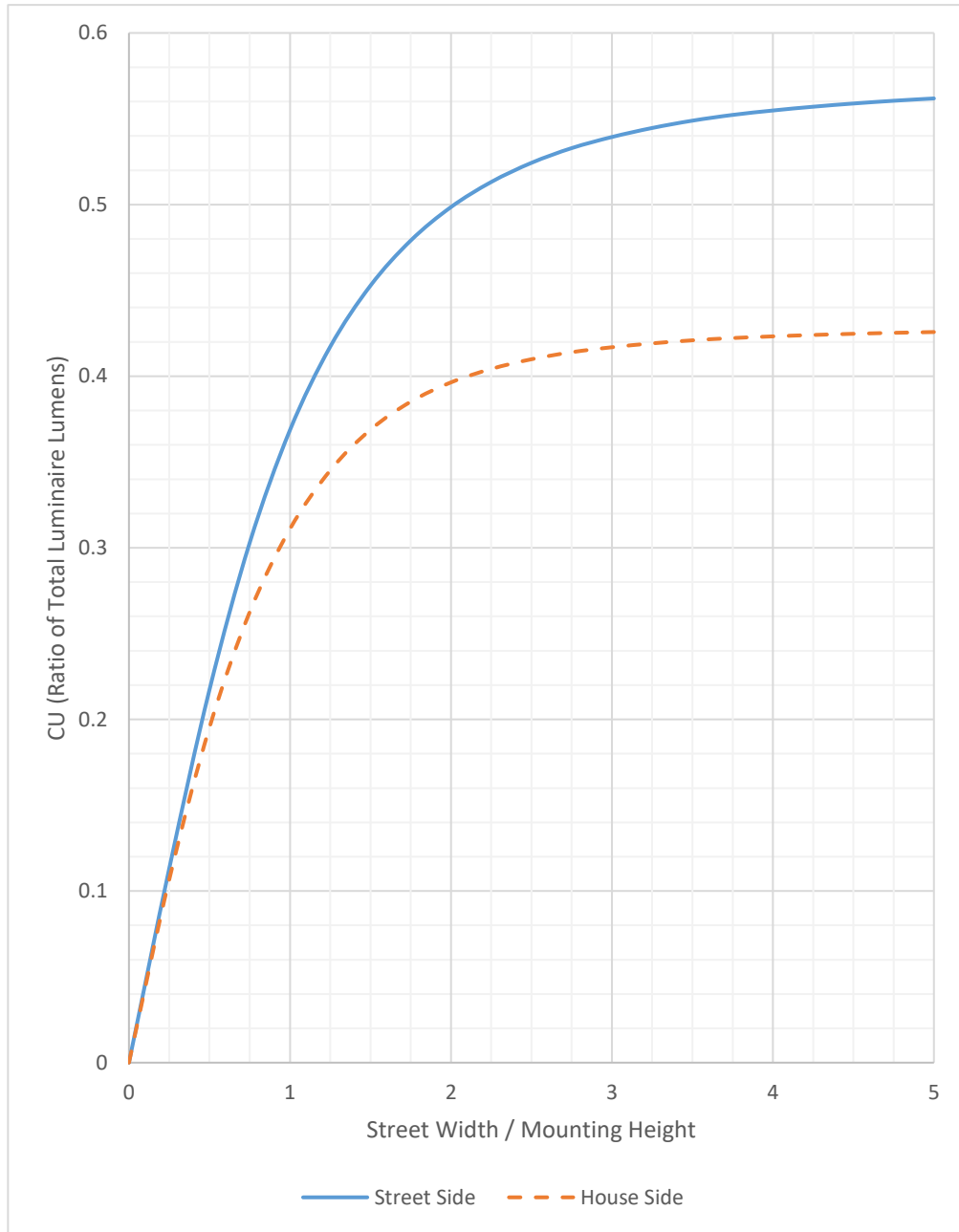


The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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



Report of Test LLIA002251-004

Coefficients of Utilization Plot

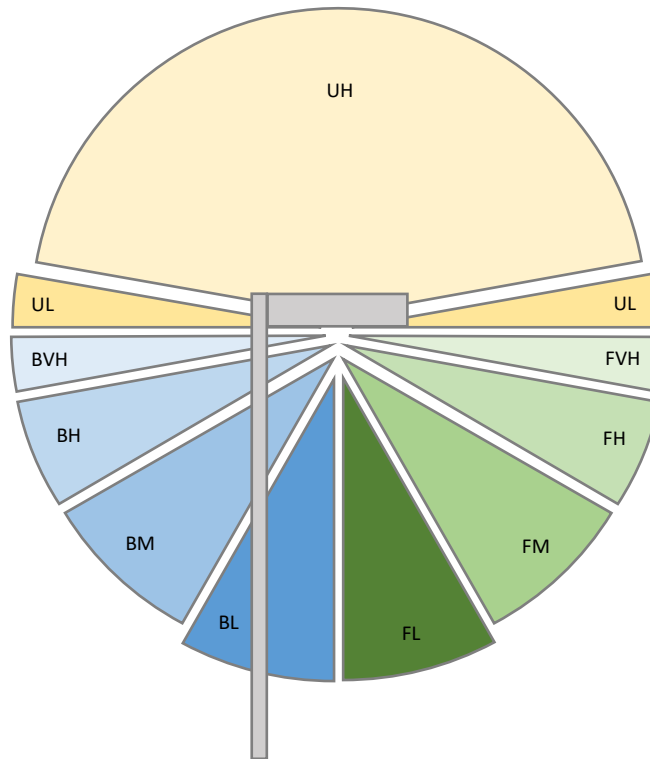




Report of Test

LLIA002251-004

LCS Tables and Bug Classification



Back Light

BL - Back Low (0°-30°)	989.5 Lm
BM - Back Mid (30°-60°)	2406.6 Lm
BH - Back High (60°-80°)	1346.4 Lm
BVH - Back Very High (80°-90°)	100.1 Lm

Forward Light

FL - Forward Low (0°-30°)	1131.6 Lm
FM - Forward Mid (30°-60°)	3084.9 Lm
FH - Forward High (60°-80°)	2052.4 Lm
FVH - Forward Very High (80°-90°)	194.2 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

LLIA002251-004

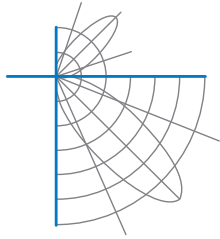
Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles															
	0	5	15	25	35	45	55	57.5	60	62.5	65	67.5	70	72.5	75	
0	2531	2531	2531	2531	2531	2531	2531	2531	2531	2531	2531	2531	2531	2531	2531	
2.5	2563	2564	2565	2564	2561	2557	2552	2551	2549	2548	2546	2545	2544	2543	2539	
5	2597	2599	2599	2595	2588	2581	2571	2570	2567	2564	2561	2557	2555	2553	2548	
7.5	2632	2634	2633	2626	2617	2605	2591	2588	2584	2580	2575	2570	2567	2563	2557	
10	2666	2668	2665	2657	2645	2629	2610	2606	2600	2595	2590	2584	2579	2574	2565	
12.5	2697	2699	2697	2686	2671	2653	2629	2624	2617	2612	2605	2597	2590	2583	2575	
15	2727	2729	2725	2714	2697	2675	2648	2642	2634	2627	2618	2610	2602	2594	2584	
17.5	2753	2756	2752	2741	2721	2698	2666	2660	2650	2642	2632	2623	2614	2604	2593	
20	2776	2779	2774	2763	2744	2718	2684	2676	2665	2656	2646	2635	2625	2615	2602	
22.5	2795	2798	2794	2785	2763	2737	2700	2692	2681	2670	2659	2647	2636	2625	2611	
25	2810	2813	2810	2801	2781	2753	2715	2705	2694	2683	2671	2659	2647	2635	2620	
27.5	2820	2822	2821	2813	2795	2767	2728	2718	2707	2695	2683	2670	2657	2645	2630	
30	2824	2826	2826	2821	2805	2776	2739	2729	2717	2705	2693	2679	2666	2653	2639	
32.5	2822	2824	2826	2824	2809	2782	2746	2737	2726	2713	2701	2689	2674	2661	2646	
35	2812	2815	2819	2819	2808	2784	2752	2743	2732	2720	2709	2696	2682	2669	2655	
37.5	2794	2797	2805	2808	2801	2782	2754	2746	2735	2726	2715	2703	2690	2678	2664	
40	2767	2770	2782	2790	2786	2773	2752	2745	2737	2729	2720	2708	2697	2687	2673	
42.5	2730	2735	2750	2763	2765	2760	2747	2743	2737	2731	2723	2714	2705	2696	2684	
45	2682	2688	2708	2726	2736	2741	2738	2738	2734	2730	2726	2721	2714	2708	2698	
47.5	2622	2629	2654	2679	2699	2716	2728	2731	2732	2732	2732	2730	2727	2722	2715	
50	2552	2558	2588	2623	2654	2686	2716	2723	2729	2735	2740	2742	2744	2744	2742	
52.5	2467	2473	2512	2556	2600	2650	2704	2717	2729	2743	2754	2763	2771	2778	2781	
55	2370	2379	2425	2480	2539	2608	2692	2716	2738	2758	2778	2797	2813	2825	2835	
57.5	2261	2270	2327	2395	2469	2563	2687	2722	2755	2788	2820	2847	2873	2891	2906	
60	2139	2149	2213	2297	2390	2517	2692	2741	2788	2832	2874	2910	2940	2964	2981	
62.5	2004	2013	2081	2182	2303	2473	2706	2767	2825	2878	2926	2968	3001	3026	3043	
65	1838	1850	1931	2051	2204	2430	2717	2786	2849	2907	2955	2997	3027	3047	3059	
67.5	1645	1659	1753	1896	2090	2391	2701	2769	2829	2883	2924	2954	2972	2979	2975	
70	1422	1438	1547	1715	1959	2313	2626	2680	2723	2756	2775	2781	2774	2758	2733	
72.5	1180	1195	1311	1510	1805	2172	2432	2464	2479	2483	2472	2452	2420	2382	2337	
75	940	954	1064	1285	1613	1938	2107	2111	2101	2081	2047	2007	1960	1911	1858	
77.5	714	724	823	1055	1369	1626	1699	1684	1657	1624	1583	1537	1488	1438	1390	
80	504	514	599	818	1075	1262	1277	1248	1212	1174	1133	1090	1046	1005	967	
82.5	328	336	408	580	745	844	830	804	771	733	693	656	622	593	570	
85	177	183	231	318	378	420	395	376	353	333	315	297	278	265	256	
87.5	46	47	52	60	68	77	72	69	66	63	61	59	57	55	55	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

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

North America (issuing laboratory)

Australasia & S.E. Asia



Report of Test

LLIA002251-004

Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles															
	77.5	80	82.5	85	90	95	105	115	125	135	145	155	165	175	180	
0	2531	2531	2531	2531	2531	2531	2531	2531	2531	2531	2531	2531	2531	2531	2531	
2.5	2537	2536	2534	2533	2530	2527	2520	2516	2510	2506	2501	2497	2496	2493	2492	
5	2546	2542	2538	2535	2529	2523	2511	2501	2490	2481	2472	2465	2461	2458	2457	
7.5	2553	2548	2543	2537	2528	2520	2501	2485	2469	2455	2442	2433	2427	2422	2421	
10	2560	2554	2547	2539	2527	2515	2492	2470	2448	2430	2413	2401	2393	2387	2385	
12.5	2567	2560	2550	2542	2527	2513	2483	2455	2428	2405	2384	2369	2359	2352	2351	
15	2575	2566	2555	2545	2527	2510	2474	2440	2409	2381	2356	2337	2325	2317	2315	
17.5	2583	2572	2560	2549	2527	2507	2466	2427	2389	2356	2327	2305	2290	2280	2279	
20	2590	2578	2566	2554	2529	2505	2459	2414	2370	2332	2298	2272	2254	2243	2242	
22.5	2598	2586	2572	2558	2531	2504	2452	2400	2351	2308	2268	2238	2218	2205	2204	
25	2607	2592	2576	2563	2534	2505	2446	2389	2333	2283	2238	2204	2179	2166	2164	
27.5	2615	2599	2583	2568	2537	2506	2441	2378	2315	2259	2208	2168	2141	2125	2123	
30	2623	2606	2589	2574	2540	2506	2437	2368	2298	2233	2176	2131	2098	2082	2079	
32.5	2630	2614	2597	2580	2545	2509	2435	2359	2280	2207	2143	2092	2055	2036	2034	
35	2639	2621	2605	2589	2552	2515	2435	2351	2264	2181	2109	2051	2009	1987	1984	
37.5	2648	2631	2616	2598	2562	2523	2438	2346	2248	2155	2073	2007	1960	1935	1932	
40	2658	2642	2627	2611	2572	2534	2443	2343	2234	2128	2035	1961	1908	1879	1877	
42.5	2671	2656	2640	2625	2587	2547	2453	2342	2219	2100	1995	1912	1853	1821	1817	
45	2687	2674	2659	2643	2609	2566	2466	2344	2206	2071	1952	1859	1794	1759	1754	
47.5	2708	2697	2684	2670	2639	2595	2487	2351	2193	2039	1905	1803	1728	1690	1685	
50	2737	2729	2721	2710	2676	2635	2515	2359	2179	2004	1854	1737	1660	1618	1613	
52.5	2780	2776	2771	2761	2728	2684	2551	2370	2162	1962	1793	1667	1582	1540	1533	
55	2839	2838	2835	2827	2795	2744	2592	2381	2141	1914	1726	1588	1497	1434	1425	
57.5	2912	2913	2910	2902	2867	2810	2636	2391	2113	1855	1648	1481	1364	1304	1298	
60	2990	2992	2988	2977	2938	2875	2674	2396	2079	1786	1543	1344	1243	1175	1166	
62.5	3050	3049	3042	3028	2979	2907	2688	2389	2036	1709	1401	1207	1074	1021	1015	
65	3061	3052	3037	3015	2951	2868	2645	2355	1987	1582	1263	1054	920	854	845	
67.5	2962	2939	2911	2877	2798	2713	2516	2271	1922	1468	1110	880	754	695	686	
70	2700	2660	2616	2571	2480	2398	2266	2115	1775	1325	948	720	587	521	514	
72.5	2287	2234	2183	2136	2048	1981	1915	1873	1594	1174	798	553	419	375	368	
75	1806	1754	1708	1665	1596	1548	1526	1528	1345	999	638	395	295	257	253	
77.5	1346	1305	1271	1241	1194	1164	1167	1170	1067	781	503	295	182	145	141	
80	933	906	884	867	843	829	853	846	771	596	349	148	49	18	17	
82.5	552	539	531	526	523	528	558	541	503	381	181	65	11	0	0	
85	250	249	251	254	265	279	295	275	253	182	98	36	6	0	0	
87.5	55	55	56	57	61	65	72	74	65	41	26	9	1	0	0	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

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

North America (issuing laboratory)

LightLab International Allentown, LLC
905 Harrison Street, Suite 135
Allentown, PA 18103 USA
Ph: +1 484-273-0705
Fx: +1 484-209-5779
www.lightlaballentown.com

Australasia & S.E. Asia

LightLab International
50 Redcliffe Gardens Drive
Clontarf - Queensland, 4019, Australia
Ph : +61 7 3283 7862
Fx : +61 7 3283 8751
www.lightlabint.com

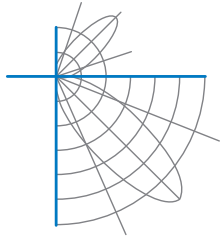


Report of Test

LLIA002251-004

Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles															
	0	5	15	25	35	45	55	57.5	60	62.5	65	67.5	70	72.5	75	
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	0	0	0	0
	92.5	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
	97.5	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
	102.5	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
	107.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	112.5	0	0	0	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
	117.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	122.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	127.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	132.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	137.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	142.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	147.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	152.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	157.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	162.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
167.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
172.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
177.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



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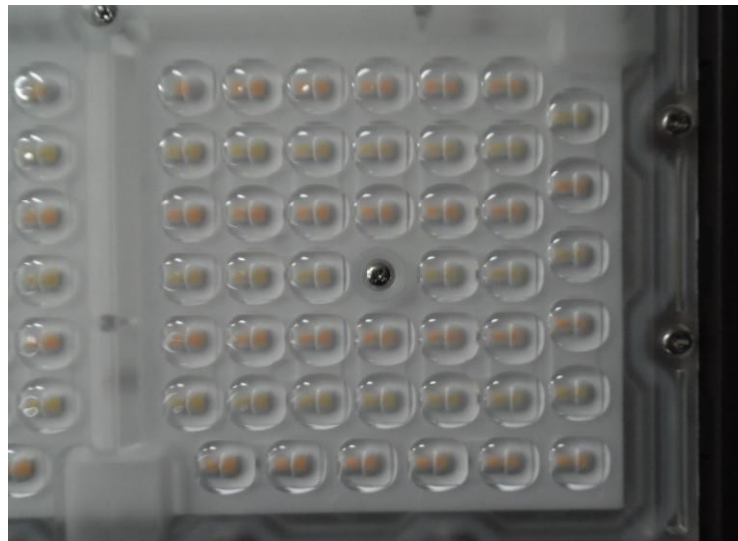
Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles															
	77.5	80	82.5	85	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	0	0	0	0
	92.5	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
	97.5	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
	102.5	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
	107.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	112.5	0	0	0	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
	117.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	122.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	127.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	132.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	137.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	142.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	147.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	152.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	157.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	162.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
167.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
172.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
177.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



Report of Test
LLIA002251-004

Additional Pictures of Test Subject





Report of Test

LLIA002251-004

Test Distance 9.5 m
Ambient Temperature 25.0 °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.