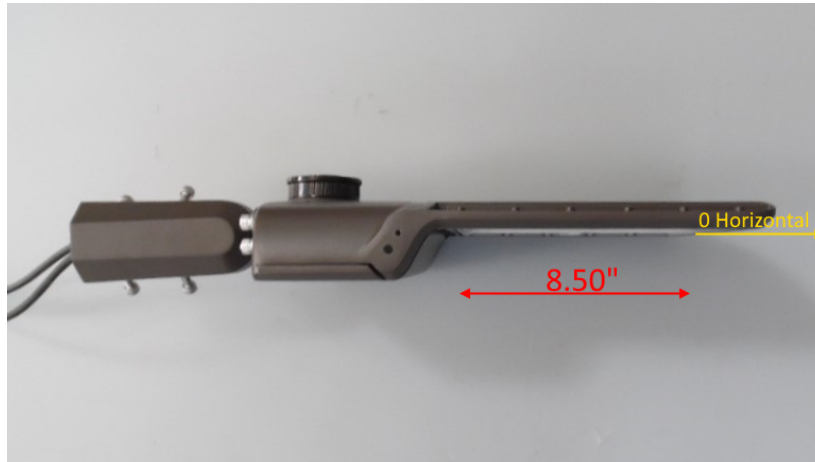


Report of Test

LLIA002251-001

Roadway/Area Light Distribution Photometry Test Report

Catalog Number: ARL-150PCS-T3 - 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



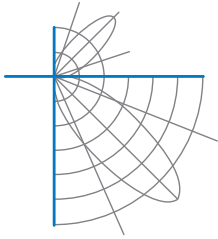
Prepared For:
Topaz Lighting Corp
925 Waverly Avenue
Holtsville, NY 11742, USA

Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	11618.0 Lumens
Input Current	0.5793 A	Total Efficacy	167.6 Lm/W
Input Power	69.32 W		
Frequency	60.00 Hz	Roadway Throw	Medium
Power Factor	0.997	Roadway Type	Type III
Current THD	4.8 %		

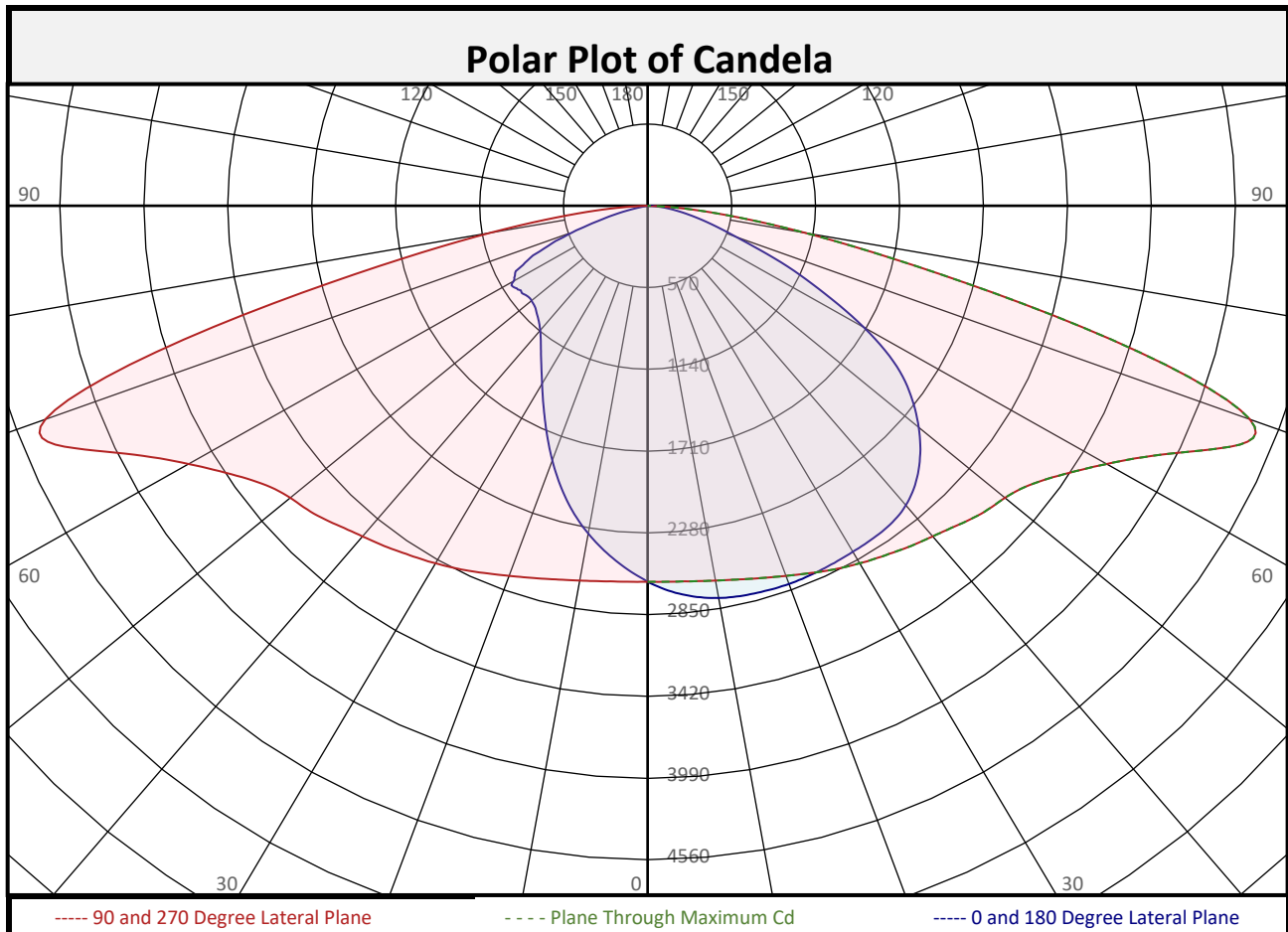
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 11/02/2023
Report date: 11/08/2023

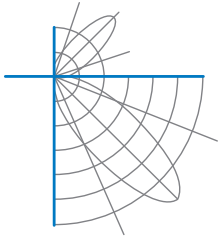
Signed: _____



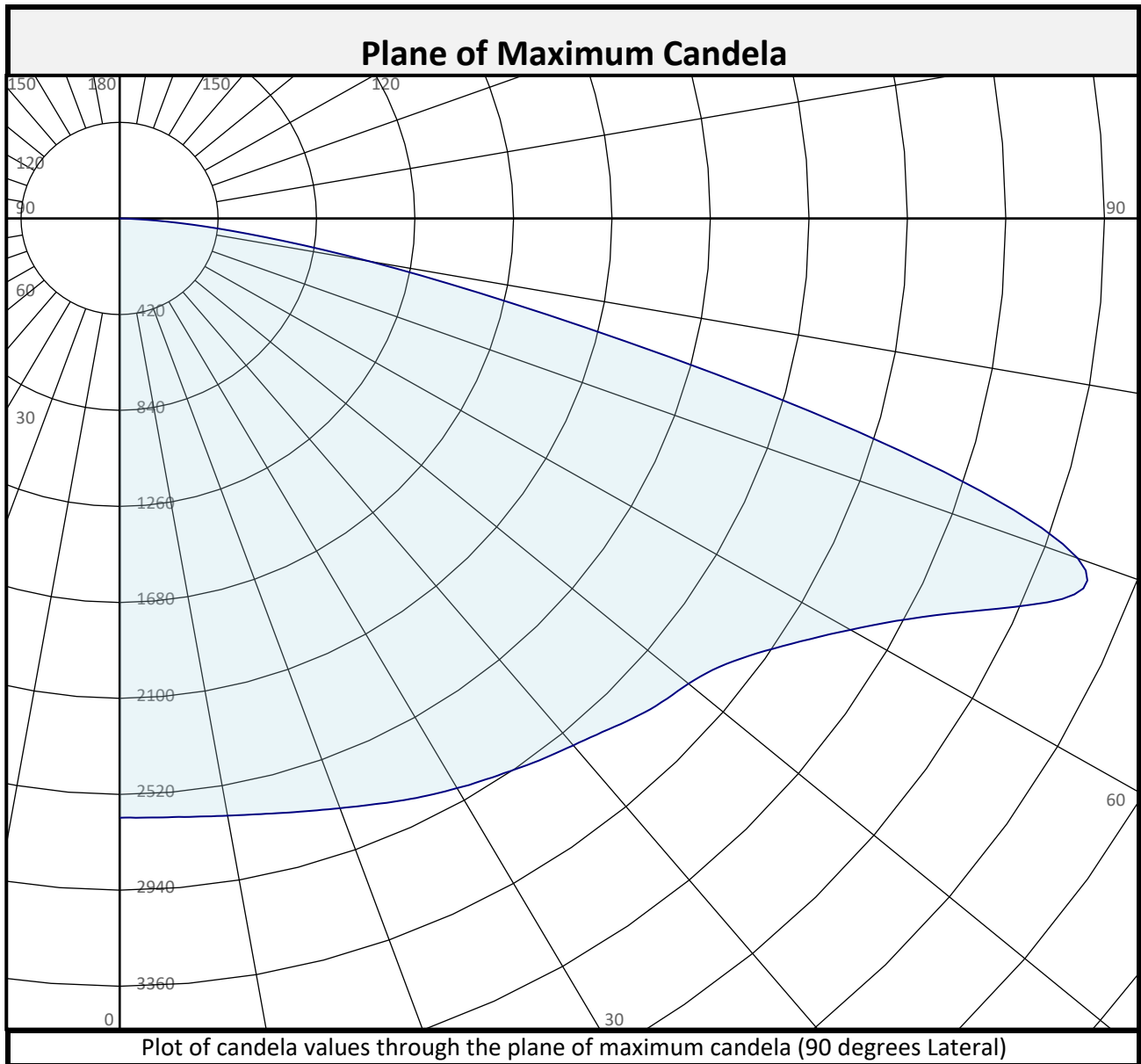
Report of Test
LLIA002251-001



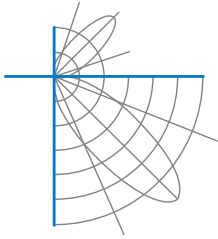
Zonal Flux Summary										
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	249.6	2.1%		90-100	0.0	0.0%		0-20	980.5	8.4%
10-20	730.9	6.3%		100-110	0.0	0.0%		0-30	2150	18.5%
20-30	1169	10.1%		110-120	0.0	0.0%		0-40	3709	31.9%
30-40	1559	13.4%		120-130	0.0	0.0%		0-60	7683	66.1%
40-50	1881	16.2%		130-140	0.0	0.0%		0-80	11322	97.5%
50-60	2092	18.0%		140-150	0.0	0.0%		10-90	11368	97.9%
60-70	2152	18.5%		150-160	0.0	0.0%		20-50	4610	39.7%
70-80	1488	12.8%		160-170	0.0	0.0%		40-90	7909	68.1%
80-90	295.7	2.5%		170-180	0.0	0.0%		60-90	3935	33.9%
0-90	11618	100.0%		90-180	0.0	0.0%		0-180	11618	100.0%



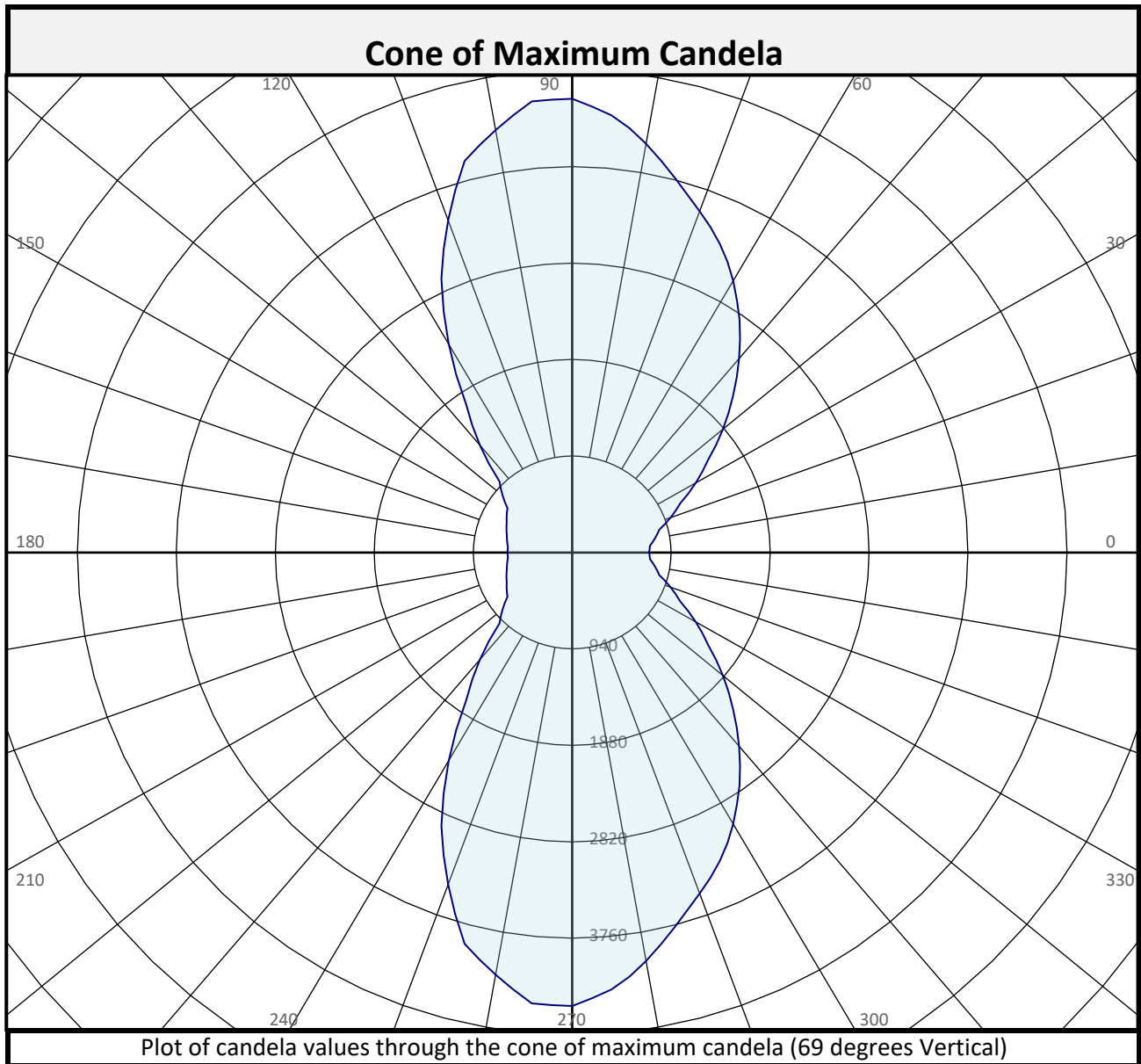
Report of Test
LLIA002251-001



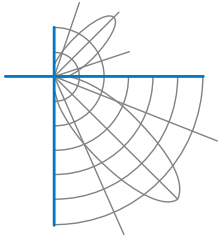
Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	6788.0	58.4%	0.0	0.0%	6788.0	58.4%
House Side	4830.0	41.6%	0.0	0.0%	4830.0	41.6%
Total	11618.0	100.0%	0.0	0.0%	11618.0	100.0%



Report of Test
LLIA002251-001

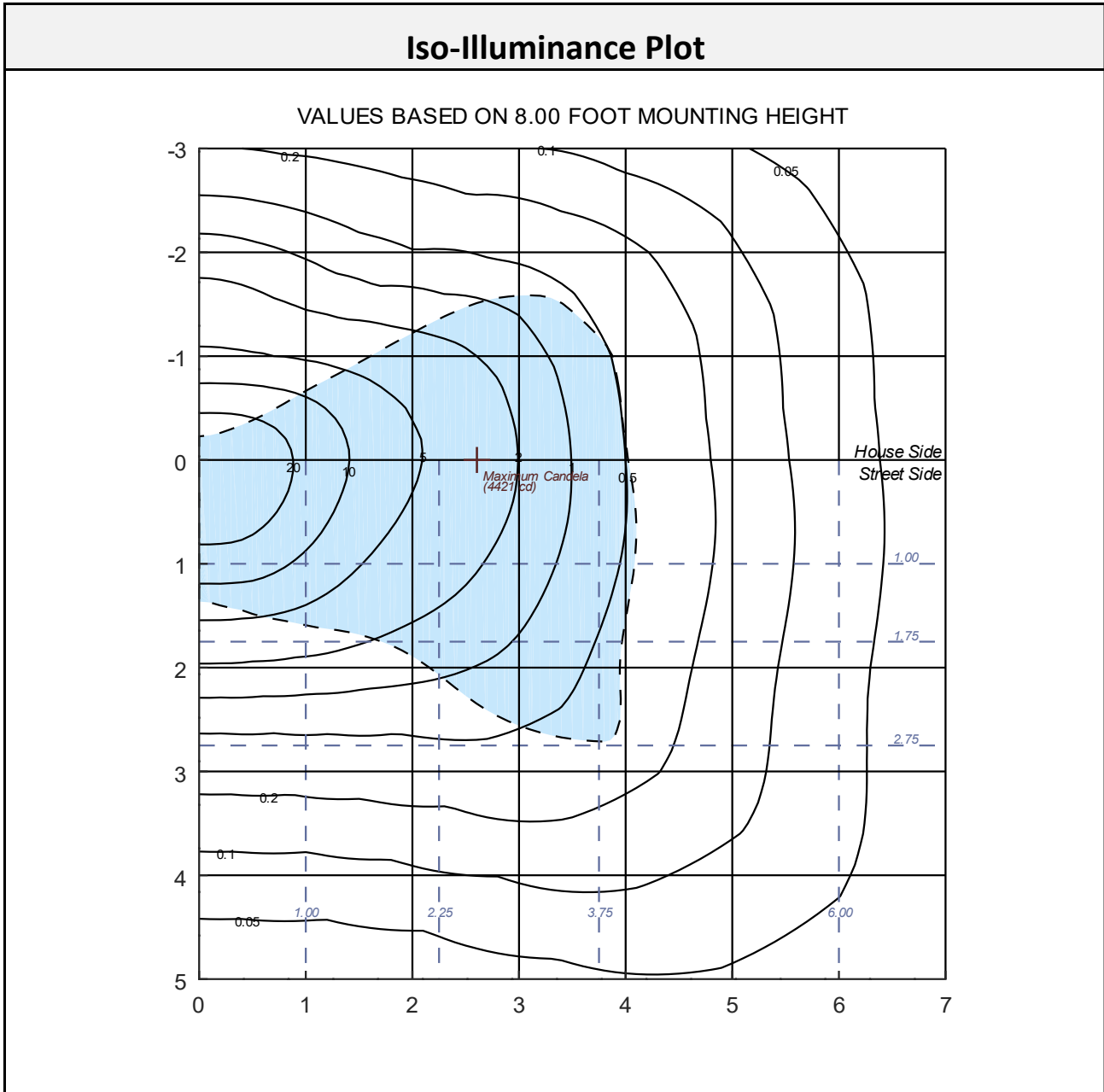


Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	6788.0	58.4%	0.0	0.0%	6788.0	58.4%
House Side	4830.0	41.6%	0.0	0.0%	4830.0	41.6%
Total	11618.0	100.0%	0.0	0.0%	11618.0	100.0%

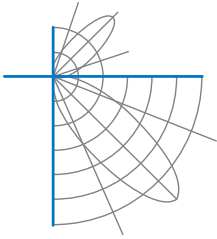


Report of Test

LLIA002251-001

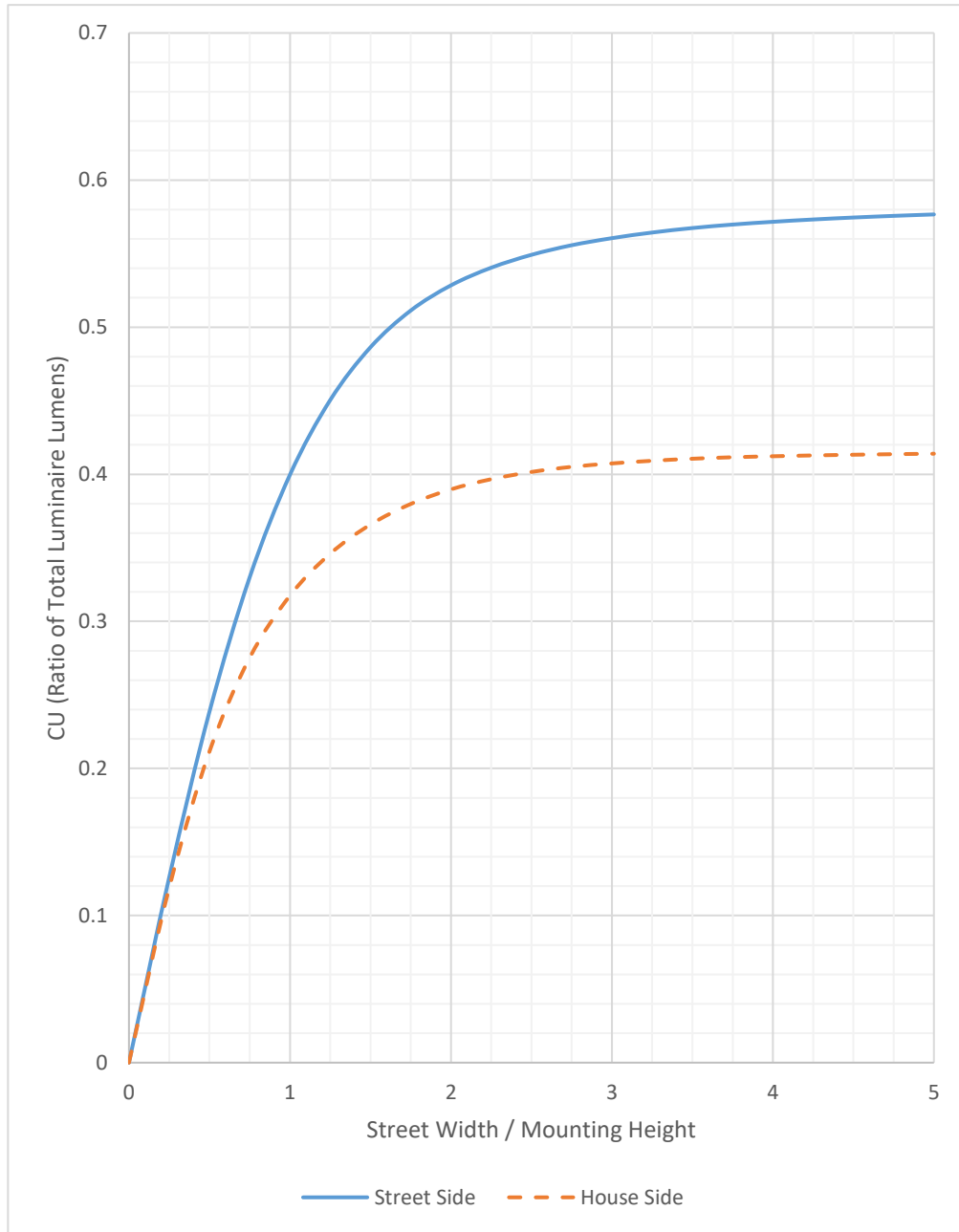


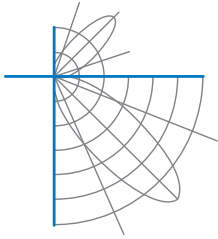
The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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



Report of Test LLIA002251-001

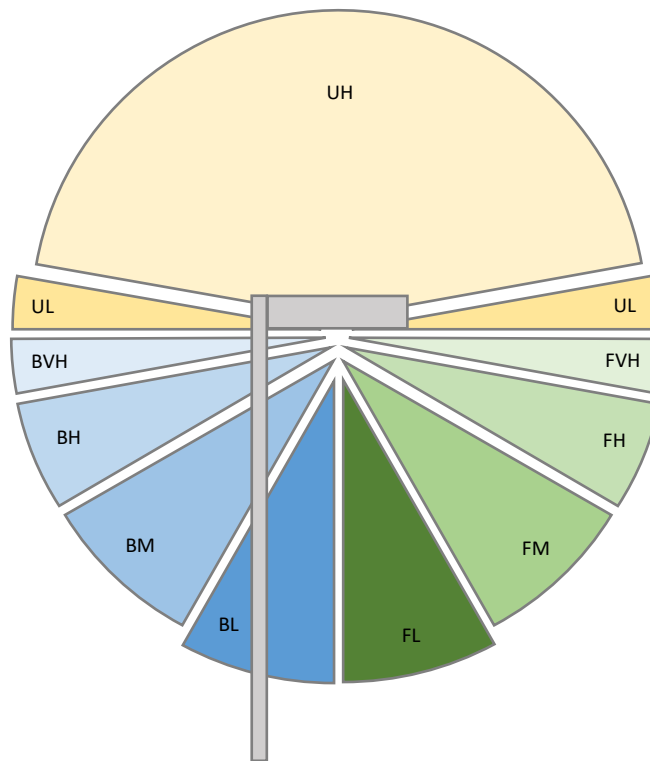
Coefficients of Utilization Plot





Report of Test LLIA002251-001

LCS Tables and Bug Classification



Back Light

BL - Back Low (0°-30°)	959.0 Lm
BM - Back Mid (30°-60°)	2225.7 Lm
BH - Back High (60°-80°)	1550.1 Lm
BVH - Back Very High (80°-90°)	95.2 Lm

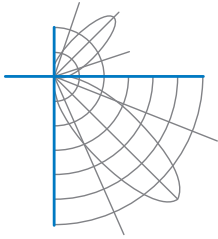
Forward Light

FL - Forward Low (0°-30°)	1190.9 Lm
FM - Forward Mid (30°-60°)	3307.0 Lm
FH - Forward High (60°-80°)	2089.5 Lm
FVH - Forward Very High (80°-90°)	200.5 Lm

Uplight

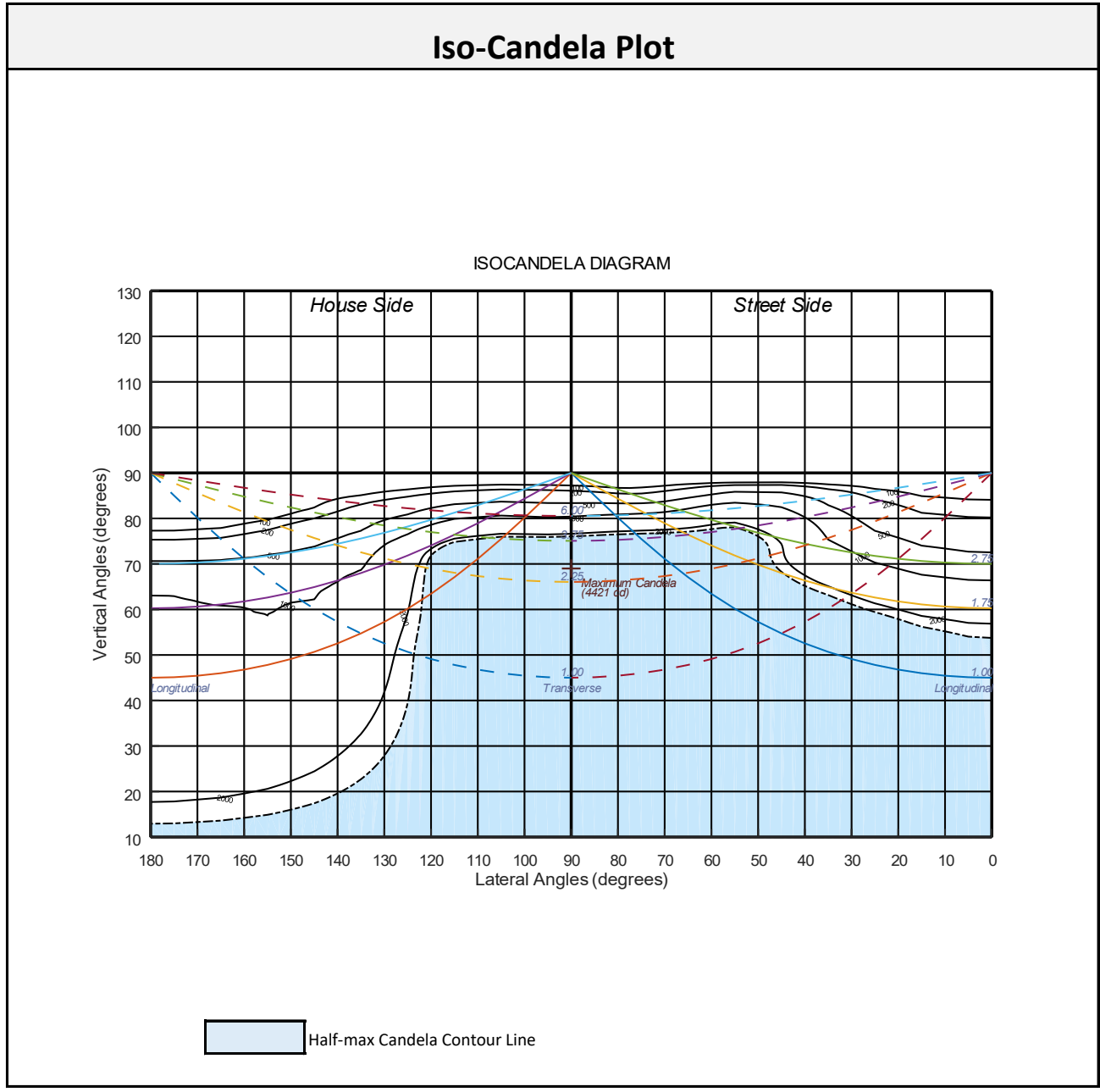
UL - Upward Low (90°-100°)	0.0 Lm
UH - Upward High (100°-180°)	0.0 Lm

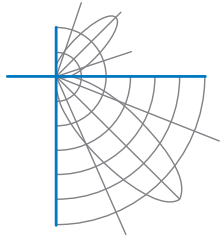
BUG Rating: Asymmetrical Luminaire (Type I, II, III, and IV) B3 - U0 - G3
BUG Rating: Quadrilateral Symmetrical Luminaire (Type V, Type VS) B3 - U0 - G2



Report of Test
LLIA002251-001

Iso-Candela Plot





Report of Test

LLIA002251-001

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	2623	2623	2623	2623	2623	2623	2623	2623	2623	2623	2623	2623	2623	2623	2623	
2.5	2677	2678	2677	2674	2669	2664	2658	2656	2654	2652	2649	2647	2646	2642	2640	
5	2720	2722	2721	2717	2710	2701	2690	2689	2684	2681	2677	2672	2669	2664	2659	
7.5	2752	2756	2755	2752	2743	2734	2722	2719	2715	2710	2704	2699	2695	2688	2681	
10	2776	2779	2780	2777	2773	2763	2752	2749	2744	2739	2733	2729	2722	2715	2706	
12.5	2790	2793	2795	2796	2795	2790	2781	2777	2773	2767	2762	2757	2750	2742	2733	
15	2798	2802	2806	2810	2813	2814	2807	2805	2802	2796	2792	2786	2779	2772	2763	
17.5	2804	2807	2812	2823	2830	2836	2834	2834	2830	2826	2822	2817	2811	2803	2794	
20	2806	2809	2820	2834	2847	2859	2861	2862	2860	2857	2854	2849	2844	2835	2828	
22.5	2803	2808	2823	2845	2866	2878	2889	2891	2890	2888	2886	2881	2877	2870	2861	
25	2798	2803	2824	2857	2886	2908	2918	2920	2919	2918	2917	2914	2910	2904	2896	
27.5	2792	2798	2825	2869	2909	2934	2944	2947	2947	2945	2944	2942	2939	2934	2927	
30	2786	2793	2829	2885	2933	2959	2969	2970	2969	2970	2969	2967	2964	2960	2954	
32.5	2781	2790	2835	2905	2960	2983	2991	2992	2991	2989	2989	2987	2985	2983	2977	
35	2775	2785	2841	2929	2987	3007	3010	3010	3008	3006	3007	3007	3004	3003	3001	
37.5	2758	2769	2840	2948	3009	3025	3026	3026	3025	3024	3025	3023	3023	3023	3024	
40	2727	2740	2824	2953	3019	3033	3038	3039	3038	3039	3040	3041	3041	3044	3046	
42.5	2676	2691	2791	2941	3012	3028	3040	3043	3047	3048	3052	3055	3059	3065	3069	
45	2604	2620	2738	2912	2991	3012	3033	3038	3043	3047	3054	3061	3069	3078	3087	
47.5	2514	2530	2663	2863	2955	2989	3020	3027	3033	3041	3050	3060	3071	3082	3097	
50	2404	2423	2566	2790	2905	2958	3004	3014	3024	3034	3047	3060	3073	3088	3104	
52.5	2280	2296	2443	2690	2836	2919	2985	2999	3013	3027	3041	3057	3076	3097	3120	
55	2136	2151	2295	2555	2748	2868	2953	2973	2994	3013	3034	3059	3087	3117	3151	
57.5	1947	1961	2104	2383	2636	2800	2913	2943	2973	3004	3037	3074	3115	3158	3207	
60	1698	1710	1847	2152	2488	2712	2872	2917	2963	3008	3058	3110	3167	3228	3294	
62.5	1410	1423	1551	1860	2277	2599	2834	2898	2966	3033	3103	3174	3248	3327	3408	
65	1144	1154	1268	1552	2012	2442	2799	2893	2990	3085	3179	3269	3358	3447	3541	
67.5	878	890	1014	1283	1732	2266	2773	2904	3035	3158	3273	3381	3485	3593	3710	
70	651	661	763	1030	1483	2106	2764	2917	3064	3203	3326	3439	3545	3657	3779	
72.5	502	510	584	804	1242	2037	2726	2878	3011	3118	3207	3286	3356	3422	3493	
75	386	392	450	632	1025	1965	2646	2714	2742	2747	2749	2754	2758	2761	2765	
77.5	288	293	337	488	858	1712	2319	2301	2243	2169	2102	2052	2010	1975	1948	
80	206	210	240	363	696	1360	1808	1775	1696	1589	1484	1399	1335	1293	1264	
82.5	138	141	164	264	528	995	1236	1195	1125	1023	918	825	746	693	666	
85	79	81	97	162	334	630	657	605	544	480	421	366	315	275	252	
87.5	31	31	37	55	98	173	168	154	137	119	105	92	79	70	65	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

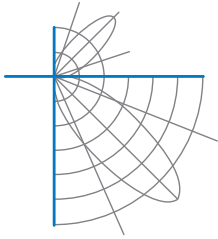
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.

North America (issuing laboratory)

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www.lightlabint.com



Report of Test

LLIA002251-001

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	2623	2623	2623	2623	2623	2623	2623	2623	2623	2623	2623	2623	2623	2623	2623	
2.5	2637	2635	2632	2629	2625	2618	2608	2598	2588	2579	2571	2564	2560	2555	2556	
5	2654	2650	2645	2641	2630	2618	2597	2576	2554	2535	2517	2501	2492	2485	2484	
7.5	2676	2669	2663	2655	2640	2623	2591	2557	2522	2490	2459	2435	2418	2407	2406	
10	2699	2691	2682	2673	2654	2632	2589	2542	2492	2444	2400	2364	2339	2323	2320	
12.5	2725	2716	2705	2694	2671	2645	2591	2530	2465	2401	2339	2289	2253	2231	2227	
15	2753	2742	2731	2719	2693	2662	2598	2522	2441	2358	2277	2207	2155	2128	2123	
17.5	2784	2773	2761	2746	2718	2684	2608	2519	2419	2312	2208	2117	2051	2014	2010	
20	2817	2807	2792	2778	2747	2709	2622	2518	2397	2265	2136	2023	1941	1896	1890	
22.5	2850	2841	2826	2813	2778	2738	2640	2518	2373	2215	2060	1926	1828	1775	1768	
25	2882	2875	2862	2848	2813	2770	2661	2519	2347	2163	1983	1828	1715	1655	1648	
27.5	2912	2908	2894	2880	2847	2802	2685	2522	2323	2110	1905	1731	1609	1543	1536	
30	2937	2937	2924	2911	2879	2835	2710	2526	2297	2057	1828	1639	1508	1440	1432	
32.5	2963	2965	2953	2941	2910	2866	2738	2534	2273	2003	1753	1551	1416	1349	1341	
35	2994	2991	2983	2972	2943	2901	2766	2543	2250	1950	1680	1468	1333	1269	1261	
37.5	3012	3018	3012	3004	2977	2937	2795	2556	2227	1896	1608	1390	1257	1197	1190	
40	3035	3044	3041	3034	3011	2974	2828	2570	2207	1843	1538	1315	1190	1139	1134	
42.5	3058	3073	3072	3069	3048	3014	2860	2585	2189	1792	1469	1247	1138	1097	1092	
45	3090	3103	3104	3104	3094	3060	2901	2604	2174	1742	1402	1189	1098	1067	1063	
47.5	3107	3122	3128	3133	3134	3107	2949	2629	2160	1691	1336	1144	1066	1041	1039	
50	3112	3135	3150	3160	3167	3150	2996	2657	2142	1637	1275	1104	1046	1030	1028	
52.5	3129	3164	3185	3203	3224	3216	3052	2679	2115	1574	1213	1073	1031	1031	1032	
55	3176	3220	3251	3280	3318	3313	3126	2700	2076	1505	1161	1047	1031	1044	1046	
57.5	3244	3306	3351	3392	3444	3441	3221	2727	2031	1429	1112	1019	1022	1057	1065	
60	3360	3424	3482	3532	3601	3599	3341	2760	1987	1356	1063	984	1027	1046	1049	
62.5	3489	3566	3639	3704	3796	3806	3497	2801	1941	1283	994	944	969	1006	1013	
65	3641	3742	3840	3928	4058	4066	3661	2842	1892	1182	919	887	876	892	896	
67.5	3835	3962	4087	4197	4352	4357	3865	2888	1827	1065	828	772	735	727	729	
70	3906	4032	4147	4237	4349	4326	3916	2963	1681	923	707	630	559	542	544	
72.5	3557	3616	3658	3681	3686	3631	3399	2758	1501	780	573	457	378	351	351	
75	2759	2750	2732	2702	2631	2582	2546	2158	1195	640	434	303	233	215	215	
77.5	1917	1889	1854	1809	1711	1666	1735	1510	872	488	321	198	118	92	91	
80	1236	1212	1186	1154	1083	1052	1123	980	583	358	200	86	24	4	4	
82.5	652	647	644	639	623	620	675	587	364	228	98	38	6	0	0	
85	247	257	274	288	308	319	344	284	185	104	51	19	4	0	0	
87.5	62	61	65	70	79	86	93	75	43	21	13	4	1	0	0	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

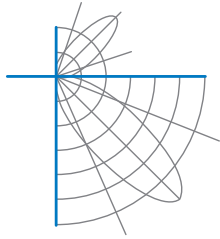
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.

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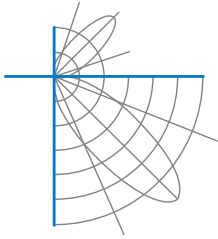


Report of Test

LLIA002251-001

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	

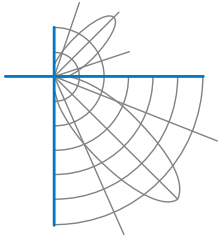


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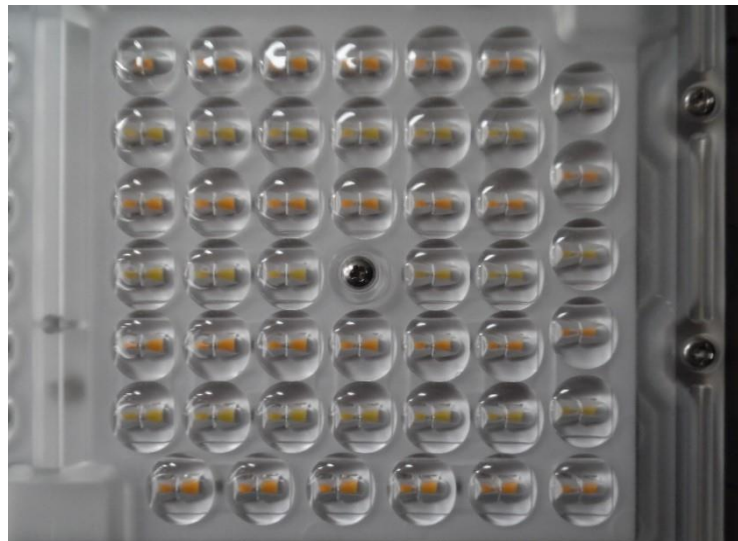
Luminous Intensity (Candela) Table

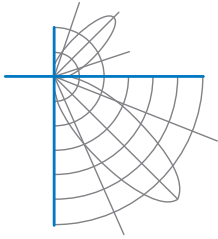
	Lateral (C-Plane) Angles															
	77.5	80	82.5	85	90	95	105	115	125	135	145	155	165	175	180	
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	92.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	97.5	0	0	0	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	



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Additional Pictures of Test Subject





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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.