

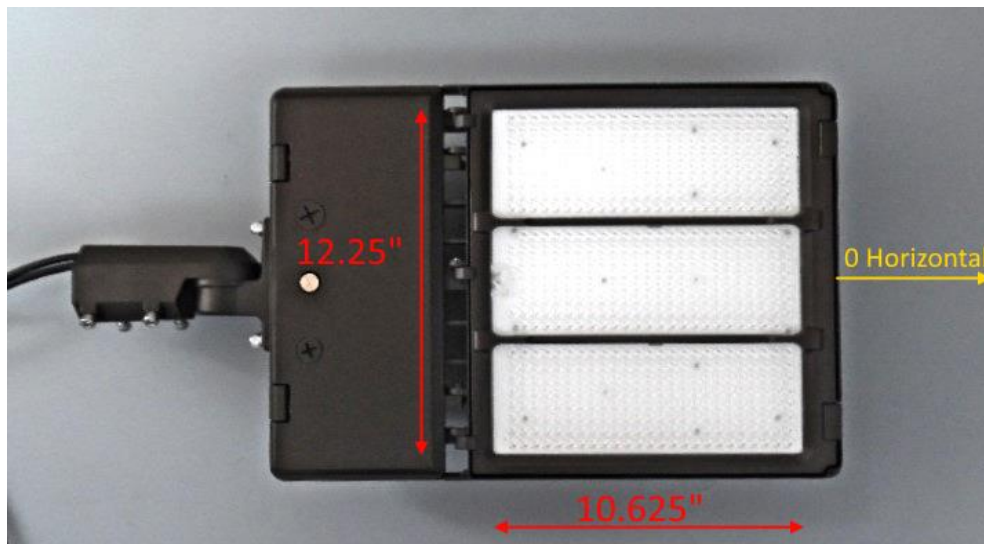


## Report of Test

LLIA002251-045

Roadway/Area Light Distribution Photometry Test Report

Catalog Number: ARL-300PCS-SWO - T2 Optics - 300W - 4000K Setting  
Pole mounted, cast aluminum housing, white LED board with  
frosted plastic enclosure with clear optic sections below each LED.  
576 white LEDs, 288 CW LEDs and 288 WW LEDs  
One Sosen SS-320NH-E260BH LED driver



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

Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	42317.3 Lumens
Input Current	2.400 A	Total Efficacy	147.9 Lm/W
Input Power	286.1 W		
Frequency	60.00 Hz	Roadway Throw	Short
Power Factor	0.993	Roadway Type	Type II
Current THD	9.3 %		

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

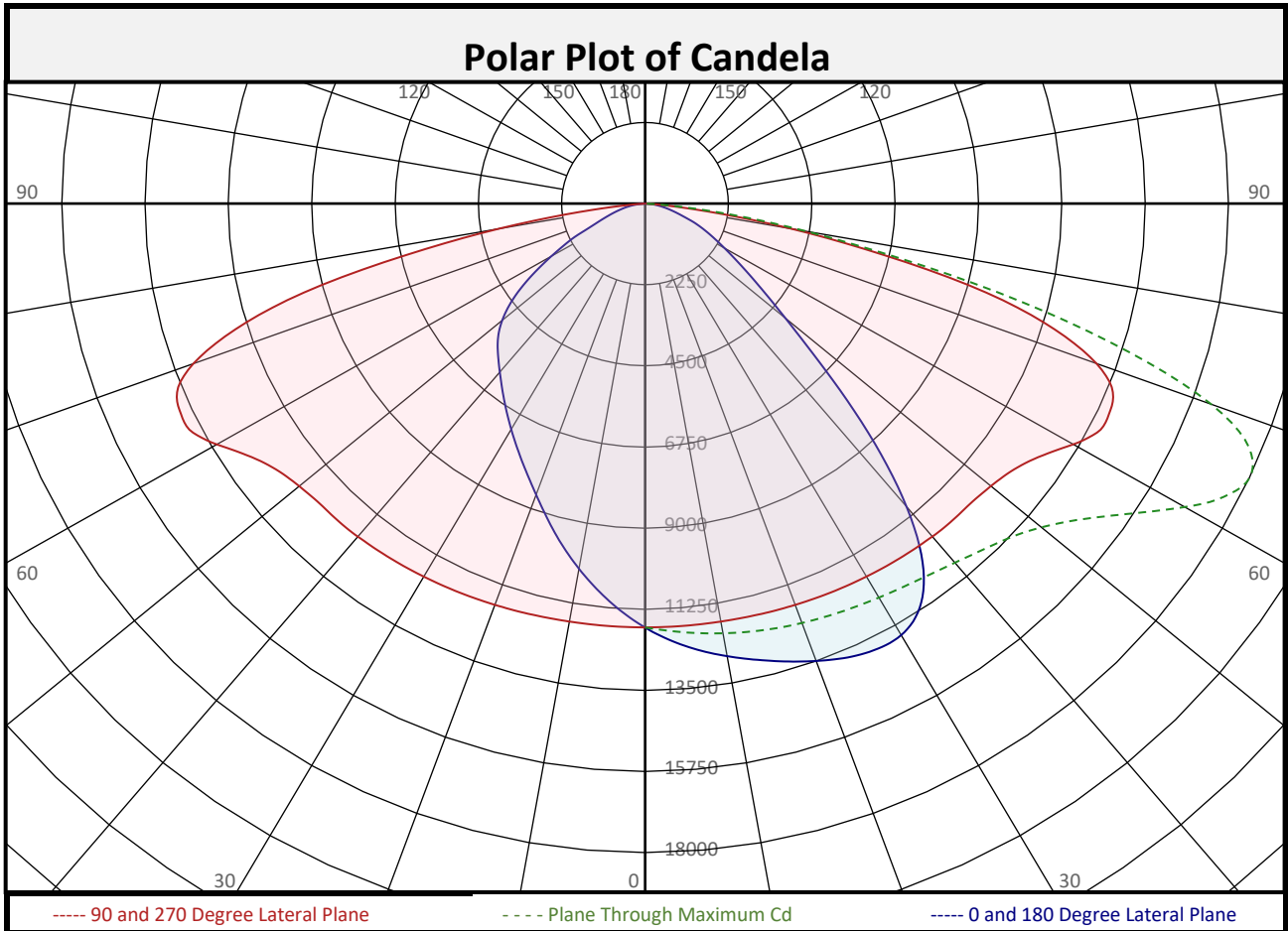
Test date: 10/27/2023  
Report date: 10/31/2023

Signed: \_\_\_\_\_



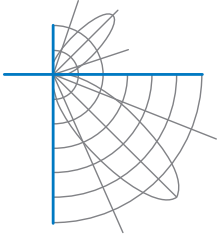
## Report of Test

LLIA002251-045

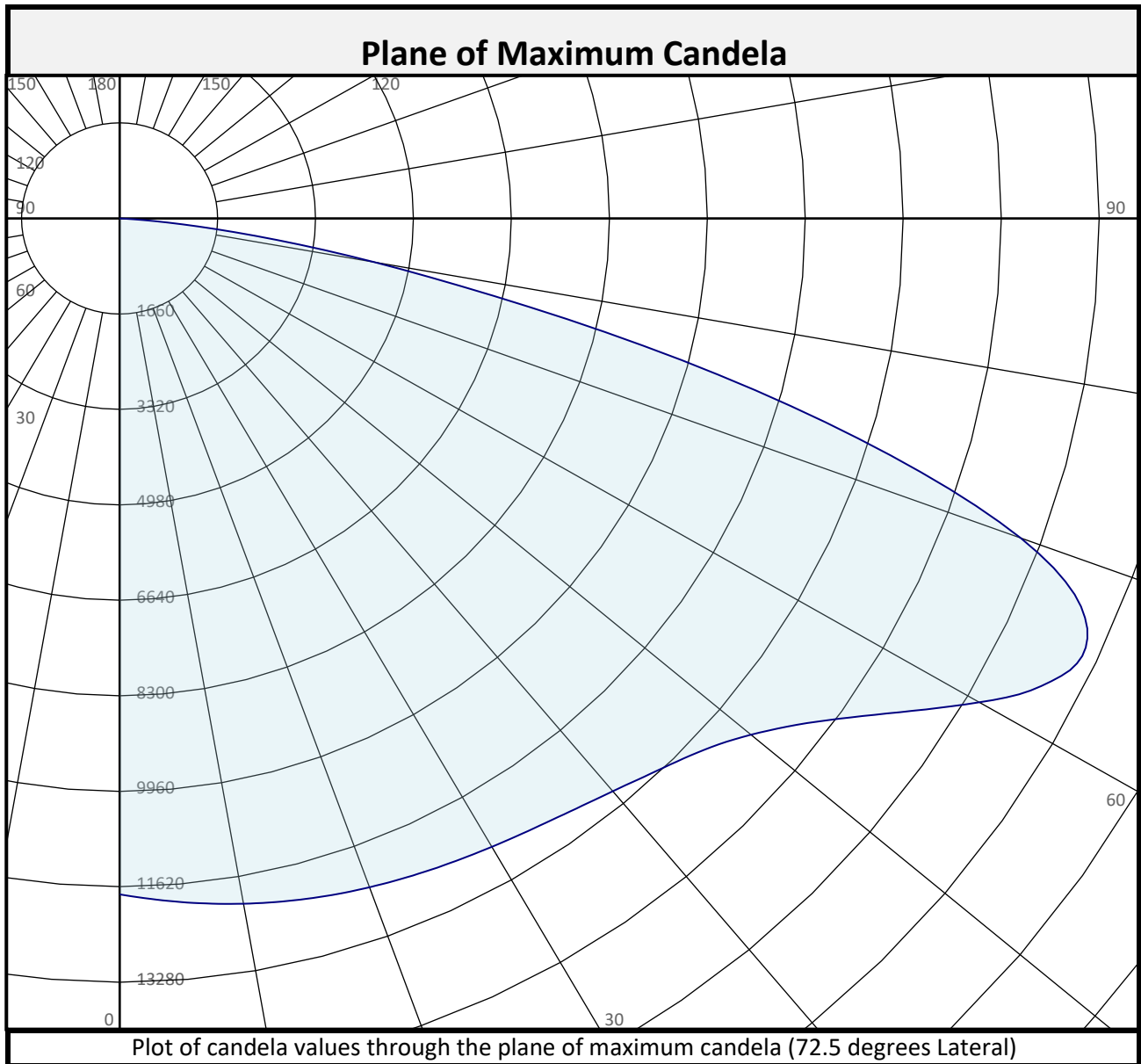


### Zonal Flux Summary

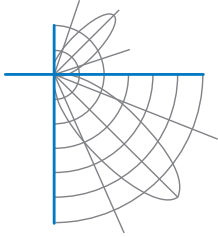
Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	1117	2.6%	90-100	0.0	0.0%	0-20	4382	10.4%
10-20	3265	7.7%	100-110	0.0	0.0%	0-30	9621	22.7%
20-30	5239	12.4%	110-120	0.0	0.0%	0-40	16524	39.0%
30-40	6903	16.3%	120-130	0.0	0.0%	0-60	31626	74.7%
40-50	7651	18.1%	130-140	0.0	0.0%	0-80	41839	98.9%
50-60	7450	17.6%	140-150	0.0	0.0%	10-90	41200	97.4%
60-70	6616	15.6%	150-160	0.0	0.0%	20-50	19793	46.8%
70-80	3597	8.5%	160-170	0.0	0.0%	40-90	25793	61.0%
80-90	478.6	1.1%	170-180	0.0	0.0%	60-90	10692	25.3%
0-90	42317	100.0%	90-180	0.0	0.0%	0-180	42317	100.0%



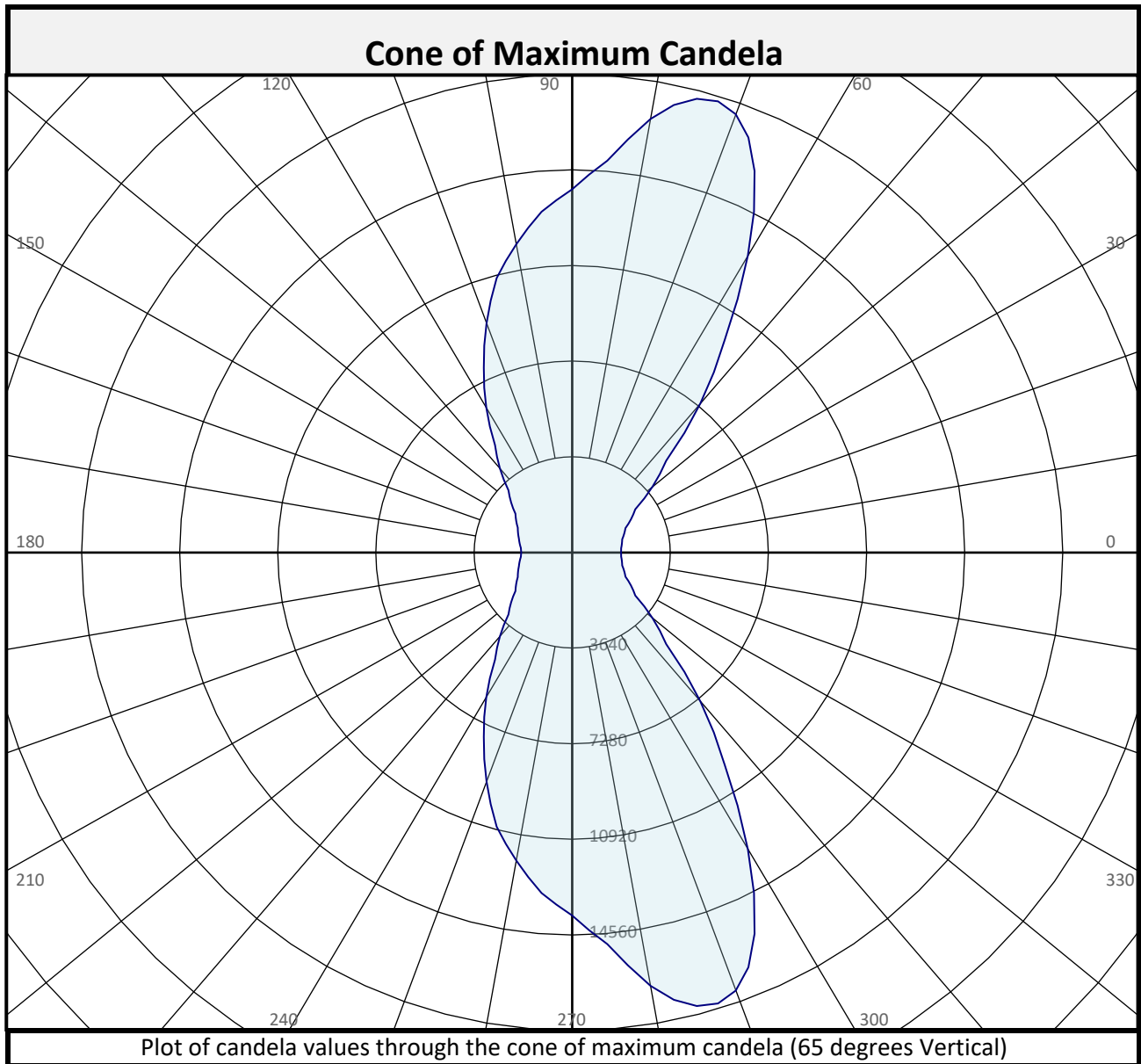
Report of Test  
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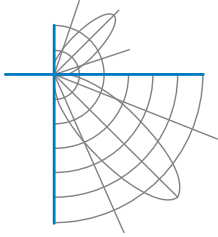
Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	24998.7	59.1%	0.0	0.0%	24998.7	59.1%
House Side	17318.6	40.9%	0.0	0.0%	17318.6	40.9%
<b>Total</b>	<b>42317.3</b>	<b>100.0%</b>	<b>0.0</b>	<b>0.0%</b>	<b>42317.3</b>	<b>100.0%</b>



Report of Test  
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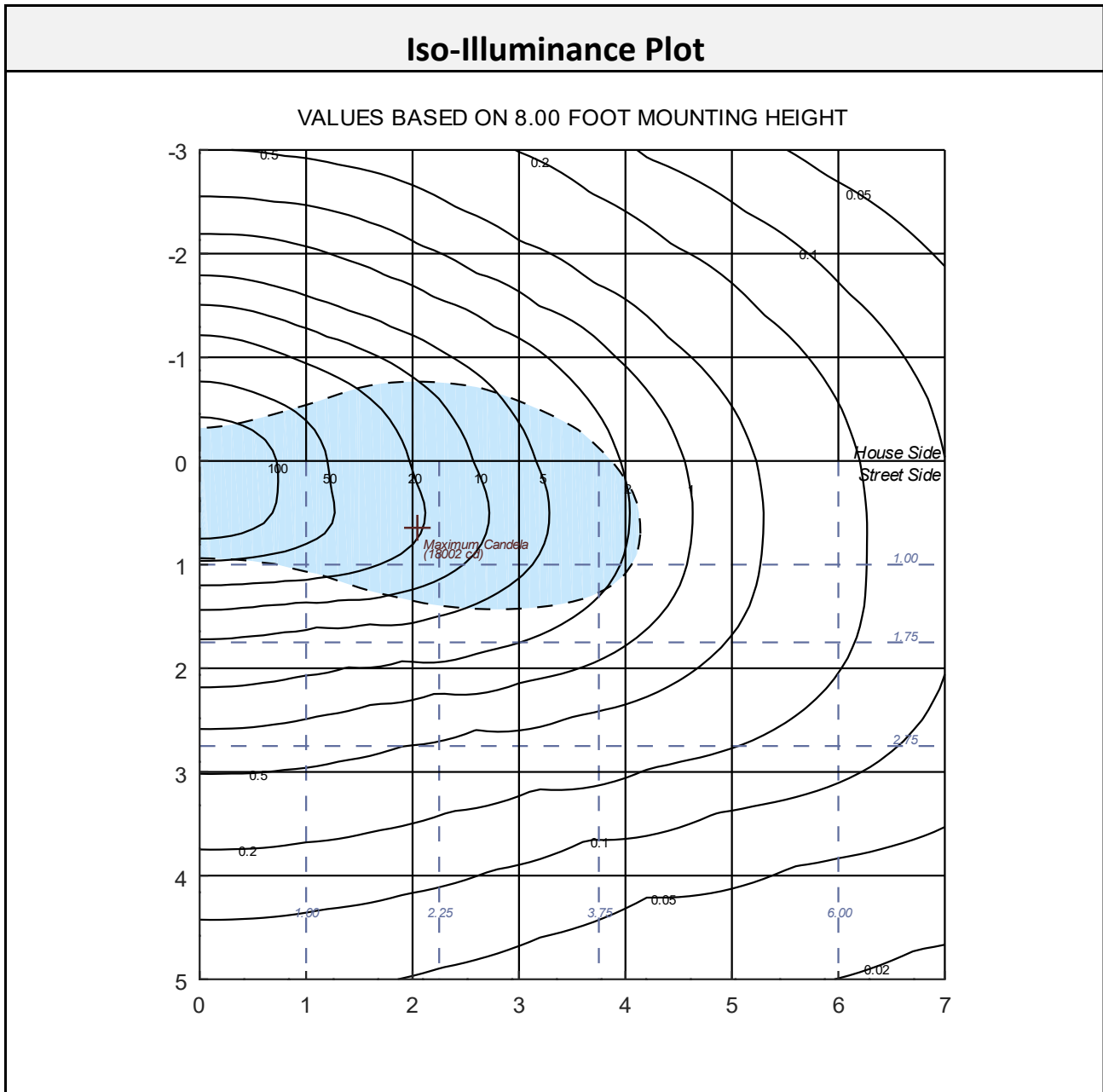


Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	24998.7	59.1%	0.0	0.0%	24998.7	59.1%
House Side	17318.6	40.9%	0.0	0.0%	17318.6	40.9%
<b>Total</b>	<b>42317.3</b>	<b>100.0%</b>	<b>0.0</b>	<b>0.0%</b>	<b>42317.3</b>	<b>100.0%</b>

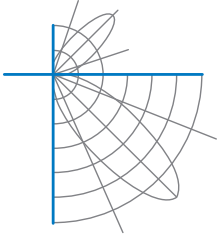


## Report of Test

LLIA002251-045

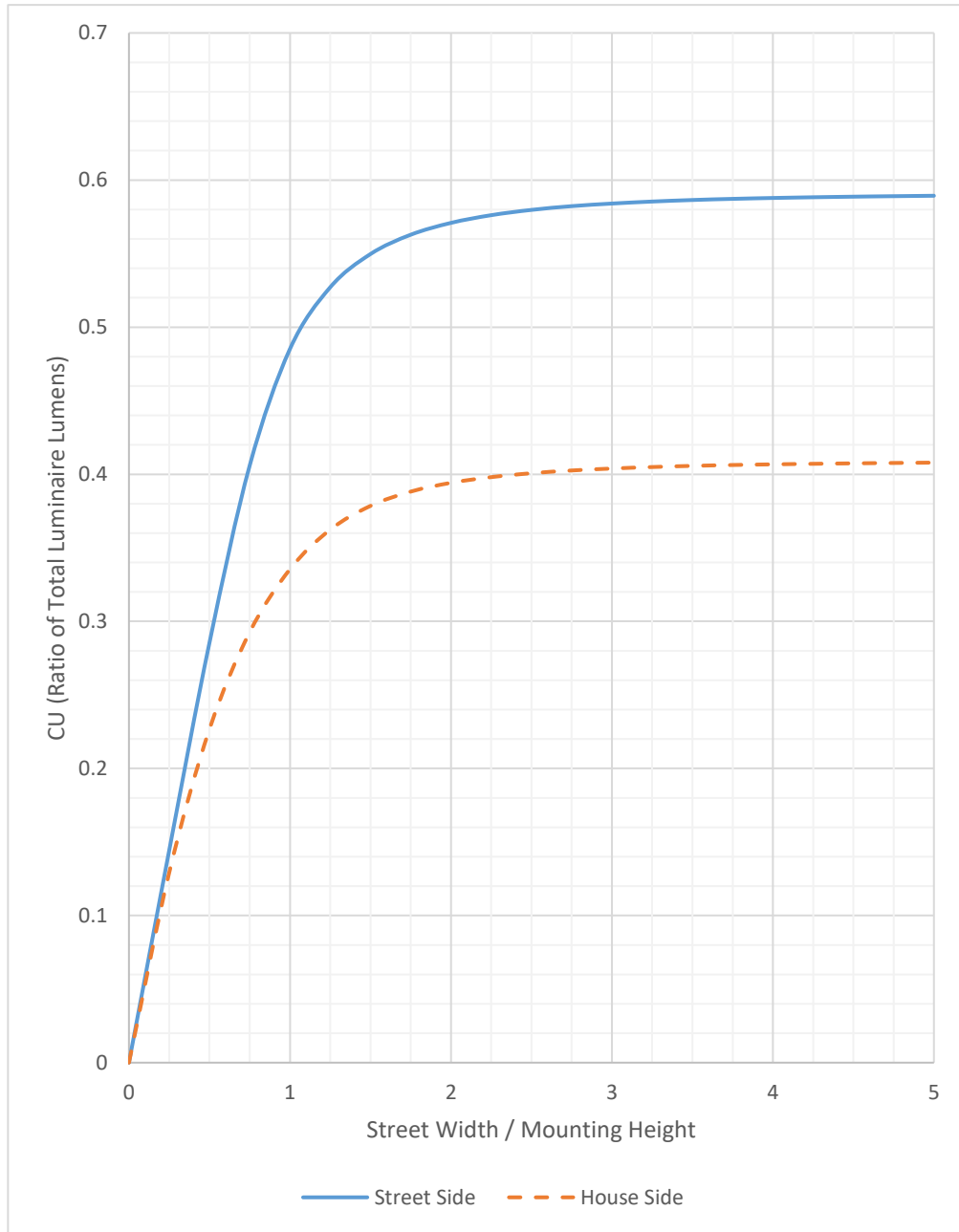


The isofootcandle values shown in the plot above are based on a mounting height of  $h = 8.0$  feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the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



## Report of Test LLIA002251-045

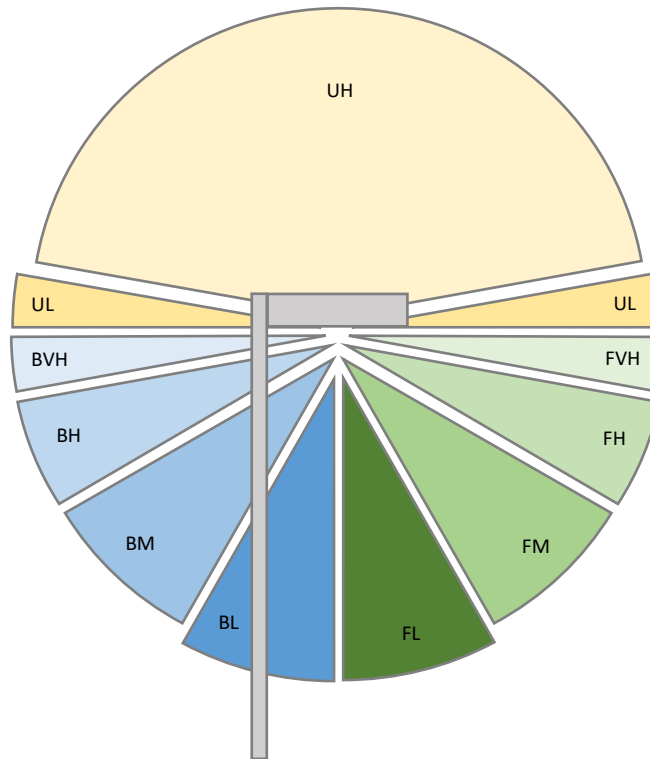
### Coefficients of Utilization Plot





Report of Test  
LLIA002251-045

LCS Tables and Bug Classification



**Back Light**

BL - Back Low (0°-30°)	4189.3 Lm
BM - Back Mid (30°-60°)	8930.9 Lm
BH - Back High (60°-80°)	4017.5 Lm
BVH - Back Very High (80°-90°)	180.9 Lm

**Forward Light**

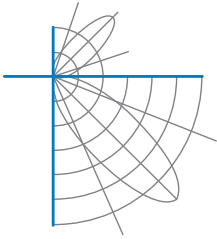
FL - Forward Low (0°-30°)	5432.1 Lm
FM - Forward Mid (30°-60°)	13073.4 Lm
FH - Forward High (60°-80°)	6195.5 Lm
FVH - Forward Very High (80°-90°)	297.7 Lm

**Uplight**

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

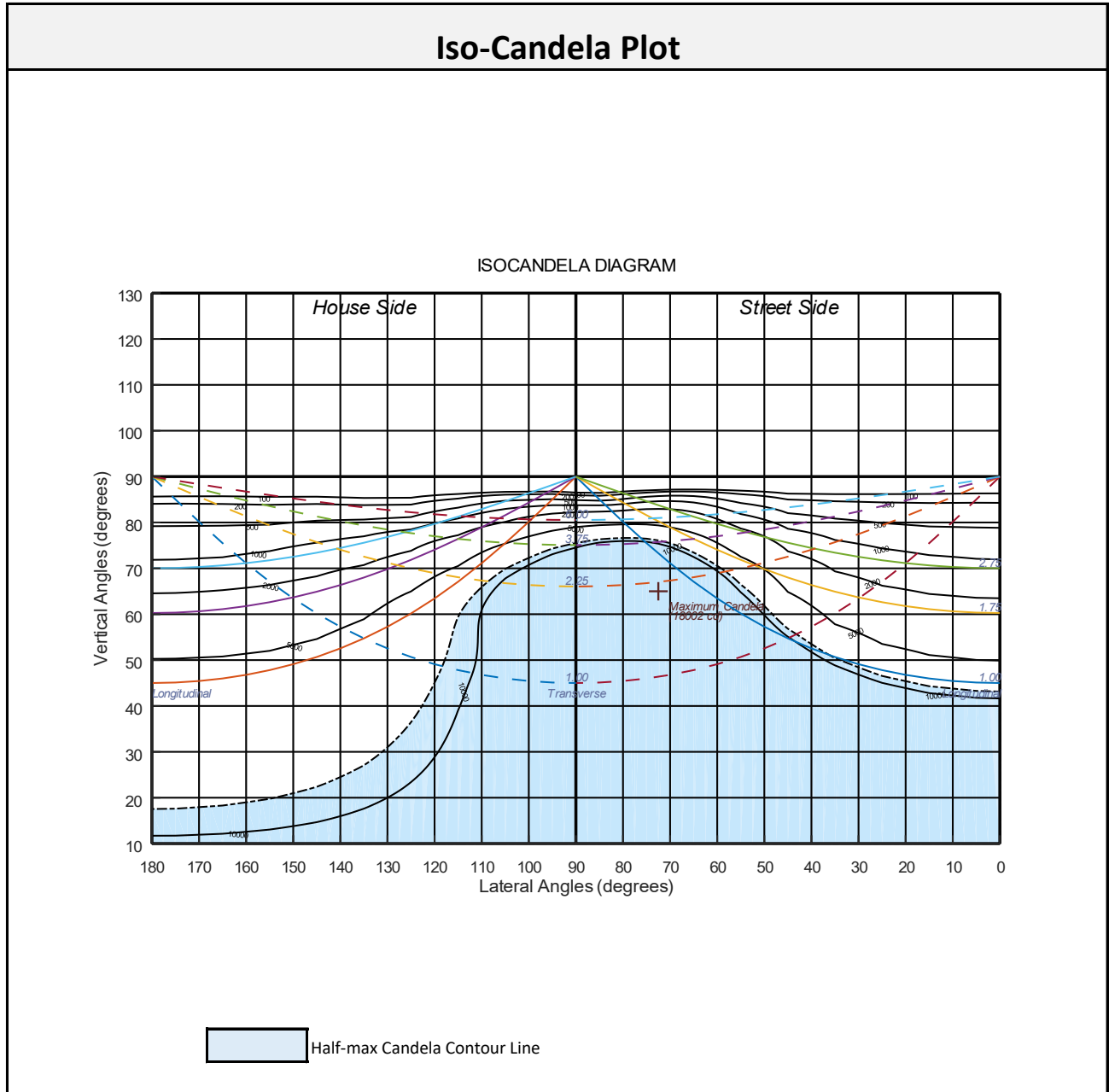
BUG Rating: Asymmetrical Luminaire (Type I, II, III, and IV) B5 - U0 - G4

BUG Rating: Quadrilateral Symmetrical Luminaire (Type V, Type VS) B5 - U0 - G3



Report of Test  
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**Iso-Candela Plot**





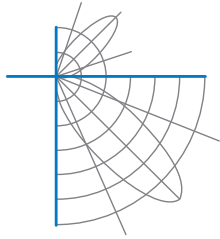


## Report of Test

LLIA002251-045

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.	0	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	
	2.5	12046	12053	12044	12033	12007	11972	11928	11916	11905	11891	11882	11869	11856	11843	11829
	5	12305	12310	12296	12271	12225	12164	12089	12065	12046	12022	12003	11980	11957	11933	11907
	7.5	12535	12537	12519	12483	12421	12338	12237	12202	12178	12148	12116	12087	12053	12019	11984
	10	12738	12740	12719	12672	12594	12495	12371	12333	12299	12261	12223	12184	12142	12101	12057
	12.5	12931	12930	12905	12850	12758	12640	12492	12450	12410	12363	12321	12274	12225	12177	12128
	15	13121	13121	13088	13024	12915	12776	12605	12558	12510	12461	12407	12357	12303	12248	12192
	17.5	13313	13309	13275	13201	13074	12913	12714	12659	12605	12548	12492	12433	12376	12316	12252
	20	13493	13489	13456	13375	13243	13055	12825	12761	12697	12632	12572	12509	12442	12377	12307
	22.5	13658	13656	13629	13553	13415	13206	12943	12869	12798	12724	12651	12582	12510	12435	12361
	25	13789	13786	13773	13723	13599	13373	13071	12988	12904	12817	12736	12659	12575	12494	12413
	27.5	13855	13861	13871	13865	13781	13558	13219	13122	13024	12923	12830	12734	12643	12553	12465
	30	13818	13829	13892	13964	13952	13761	13387	13274	13159	13046	12934	12823	12718	12617	12521
	32.5	13594	13623	13764	13976	14090	13967	13582	13455	13322	13190	13057	12926	12804	12687	12579
	35	13102	13147	13404	13825	14162	14180	13813	13669	13519	13366	13206	13055	12907	12769	12643
	37.5	12252	12311	12714	13422	14095	14367	14077	13925	13758	13577	13394	13211	13035	12873	12723
	40	10997	11077	11634	12662	13792	14483	14363	14219	14043	13842	13624	13409	13200	13002	12824
	42.5	9436	9528	10194	11514	13170	14450	14662	14540	14368	14155	13911	13656	13402	13165	12951
	45	7719	7818	8523	10023	12168	14187	14929	14867	14727	14515	14248	13954	13647	13356	13091
	47.5	6132	6213	6838	8353	10821	13607	15098	15142	15068	14893	14631	14312	13960	13605	13278
50	4956	5013	5474	6729	9274	12678	15086	15304	15361	15279	15068	14758	14376	13967	13570	
52.5	4093	4137	4485	5423	7695	11445	14846	15312	15581	15658	15555	15303	14922	14465	13986	
55	3438	3470	3741	4468	6275	10049	14348	15115	15653	15951	16017	15885	15577	15128	14593	
57.5	2912	2937	3149	3724	5127	8630	13557	14640	15507	16106	16425	16481	16304	15934	15418	
60	2485	2502	2667	3117	4220	7279	12514	13859	15063	16017	16664	16995	17038	16826	16409	
62.5	2124	2139	2264	2609	3479	6043	11261	12762	14228	15542	16583	17283	17616	17610	17329	
65	1815	1826	1924	2184	2860	4936	9871	11424	13040	14615	16018	17092	17749	18002	17875	
67.5	1527	1538	1623	1822	2336	3931	8363	9885	11498	13147	14733	16087	17079	17636	17762	
70	1208	1224	1332	1501	1888	3050	6703	8035	9480	11000	12577	14100	15382	16254	16665	
72.5	950	962	1040	1204	1495	2308	5018	6124	7342	8627	9976	11355	12670	13699	14326	
75	750	759	805	930	1147	1707	3578	4423	5384	6405	7463	8548	9605	10505	11134	
77.5	582	588	612	692	846	1213	2467	3047	3725	4444	5170	5881	6551	7108	7496	
80	431	435	444	490	579	772	1515	1884	2346	2832	3287	3713	4102	4395	4570	
82.5	292	295	296	315	358	447	845	1046	1310	1603	1879	2107	2262	2322	2324	
85	164	164	159	164	175	200	369	447	548	658	752	814	842	814	750	
87.5	46	46	41	35	32	28	40	42	44	45	44	44	42	38	35	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



## Report of Test

LLIA002251-045

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	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	
2.5	11819	11803	11794	11782	11749	11718	11669	11614	11566	11523	11484	11458	11436	11426	11425	
5	11885	11857	11835	11810	11754	11694	11591	11480	11377	11283	11200	11138	11090	11069	11069	
7.5	11950	11911	11876	11840	11759	11673	11513	11345	11184	11033	10899	10796	10721	10684	10683	
10	12013	11962	11918	11871	11768	11659	11444	11214	10991	10780	10590	10445	10339	10285	10283	
12.5	12074	12015	11961	11904	11779	11650	11382	11089	10800	10524	10277	10084	9941	9871	9867	
15	12131	12066	12004	11938	11797	11647	11328	10975	10614	10269	9958	9715	9538	9448	9441	
17.5	12186	12115	12046	11970	11819	11652	11280	10862	10429	10012	9634	9338	9126	9019	9007	
20	12238	12163	12088	12005	11841	11659	11239	10757	10248	9752	9309	8963	8730	8613	8599	
22.5	12288	12209	12127	12042	11864	11668	11203	10655	10065	9488	8986	8603	8355	8239	8221	
25	12333	12248	12164	12074	11892	11675	11170	10558	9881	9223	8663	8256	8007	7890	7875	
27.5	12378	12290	12200	12115	11917	11693	11144	10459	9695	8954	8347	7927	7675	7560	7547	
30	12423	12330	12239	12148	11943	11707	11118	10361	9505	8683	8034	7605	7357	7244	7232	
32.5	12471	12372	12277	12174	11972	11729	11098	10266	9312	8410	7729	7298	7052	6945	6931	
35	12525	12418	12315	12209	12000	11750	11081	10168	9115	8141	7431	6996	6757	6654	6642	
37.5	12590	12467	12355	12245	12028	11768	11060	10066	8917	7870	7136	6704	6475	6378	6365	
40	12667	12529	12398	12285	12057	11791	11038	9957	8710	7601	6846	6422	6206	6119	6107	
42.5	12761	12595	12455	12329	12081	11797	11005	9844	8503	7333	6568	6155	5955	5876	5866	
45	12861	12667	12499	12353	12088	11796	10952	9719	8292	7071	6302	5898	5712	5641	5635	
47.5	12996	12758	12561	12398	12111	11801	10902	9579	8080	6811	6033	5631	5447	5382	5375	
50	13217	12925	12694	12503	12186	11860	10889	9457	7857	6543	5735	5314	5121	5049	5041	
52.5	13546	13174	12886	12667	12316	11967	10927	9357	7621	6224	5372	4917	4703	4629	4621	
55	14048	13585	13219	12945	12541	12163	11013	9266	7355	5820	4919	4427	4194	4113	4104	
57.5	14804	14208	13740	13388	12892	12449	11123	9153	7014	5328	4361	3852	3611	3526	3519	
60	15813	15112	14486	14012	13351	12785	11193	8934	6541	4728	3734	3246	3017	2940	2934	
62.5	16805	16088	15288	14636	13755	13041	11125	8500	5873	4040	3109	2688	2490	2421	2415	
65	17443	16753	15852	14965	13819	13015	10812	7753	4988	3339	2567	2225	2045	1908	1886	
67.5	17537	17000	16184	15169	13672	12702	10108	6652	3970	2697	2121	1826	1572	1454	1443	
70	16656	16292	15655	14751	12975	11858	8931	5290	3045	2144	1741	1452	1238	1174	1168	
72.5	14513	14336	13910	13284	11592	10413	7284	3931	2311	1681	1395	1134	993	953	948	
75	11424	11405	11176	10805	9536	8346	5323	2808	1745	1288	1071	879	790	761	758	
77.5	7668	7652	7527	7336	6628	5670	3361	1907	1240	924	784	655	612	600	598	
80	4604	4538	4443	4346	3993	3425	2056	1219	688	583	535	465	454	452	450	
82.5	2226	2081	1950	1882	1791	1652	1139	638	332	305	316	286	295	299	297	
85	646	538	452	406	454	525	432	224	122	118	137	132	142	144	141	
87.5	33	30	27	26	25	27	26	19	15	14	15	14	8	2	2	
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

LLIA002251-045

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	



## Report of Test

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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  
LLIA002251-045

**Additional Pictures of Test Subject**





## Report of Test

### LLIA002251-045

Test Distance                    9.5 m  
Ambient Temperature        25.3 °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.