

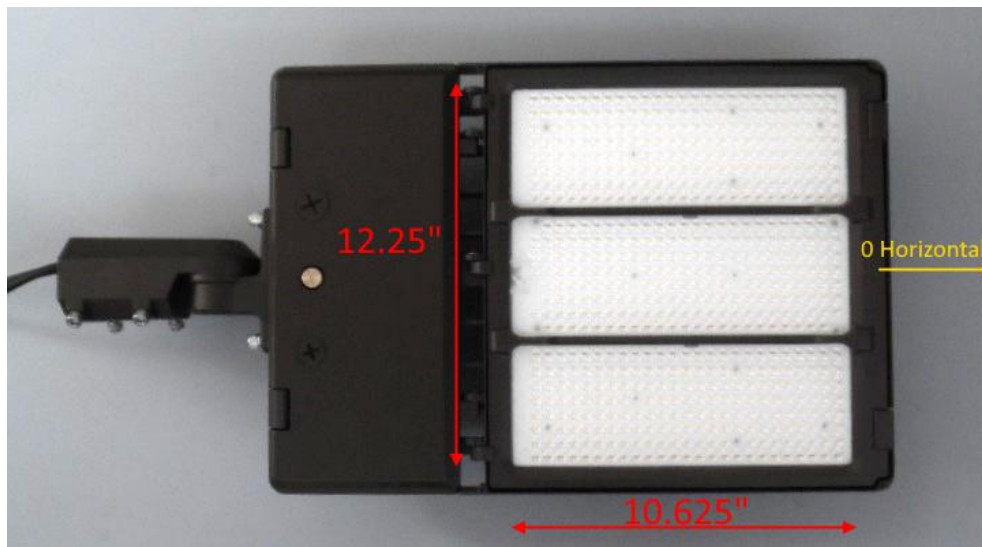


## Report of Test

LLIA002251-046

Roadway/Area Light Distribution Photometry Test Report

Catalog Number: ARL-300PCS-SWO - T3 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	42392.5 Lumens
Input Current	2.400 A	Total Efficacy	148.2 Lm/W
Input Power	286.1 W		
Frequency	60.00 Hz	Roadway Throw	Medium
Power Factor	0.993	Roadway Type	Type III
Current THD	9.4 %		

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

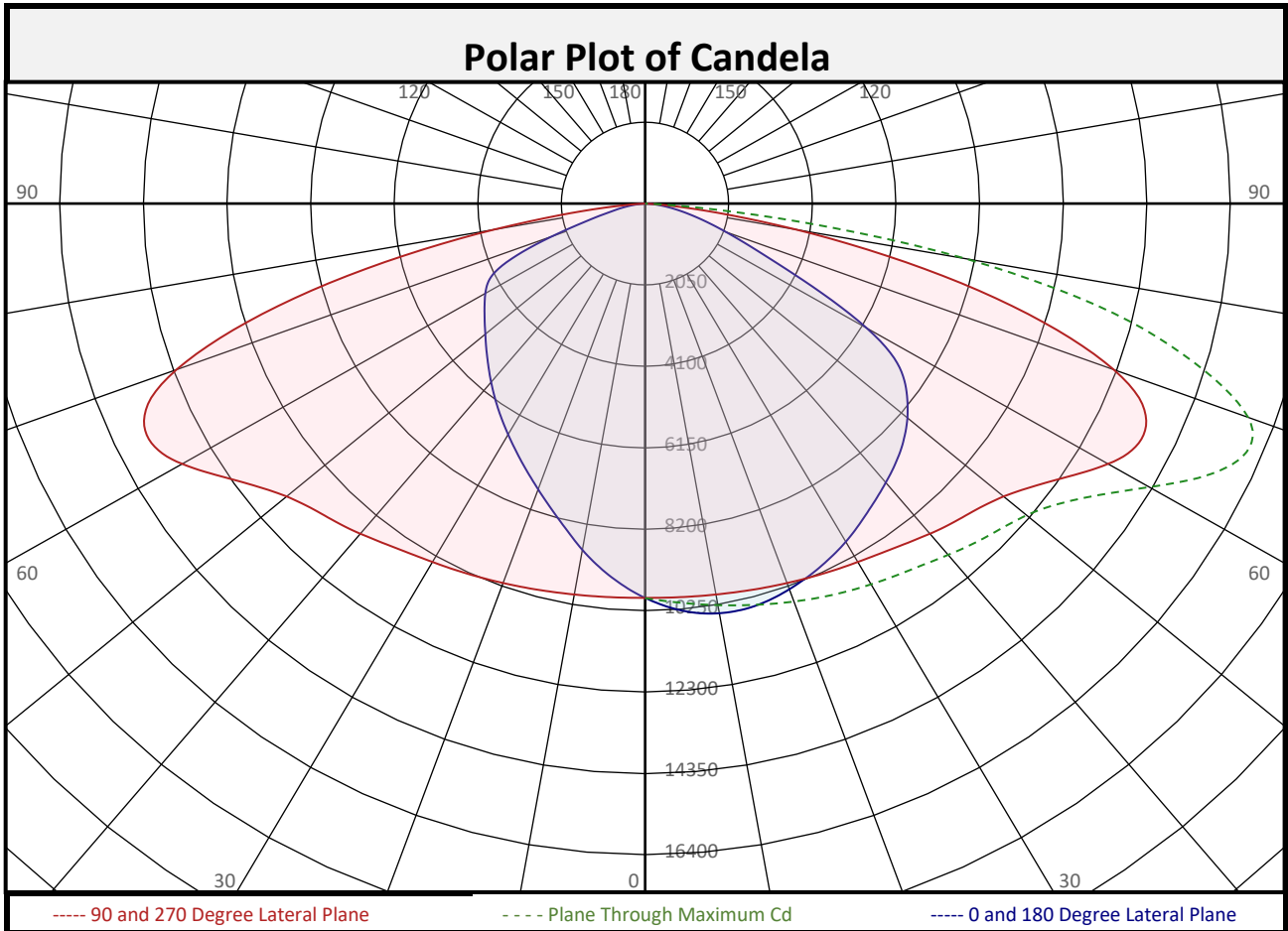
Test date: 10/27/2023  
Report date: 10/31/2023

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



# Report of Test

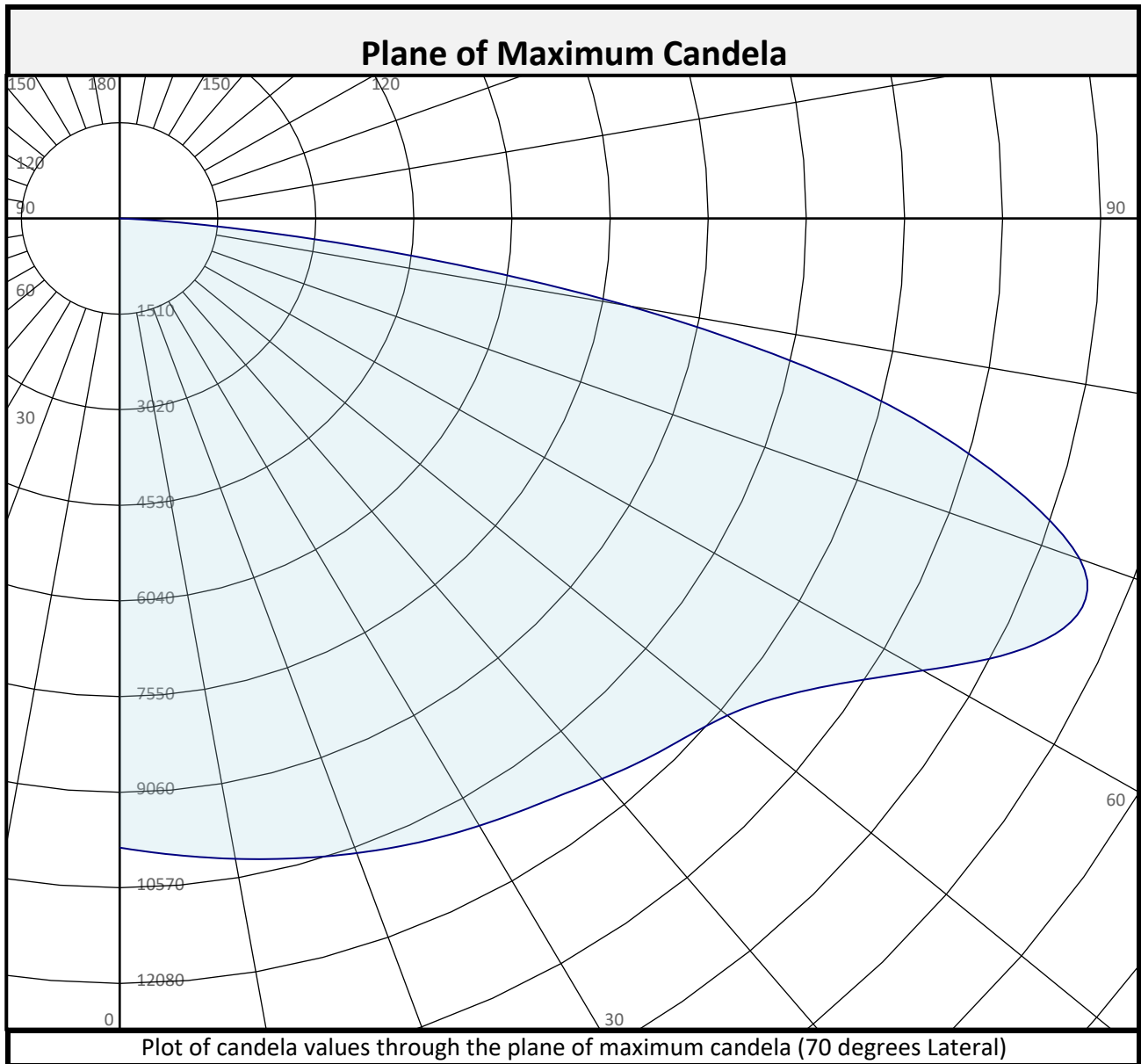
LLIA002251-046



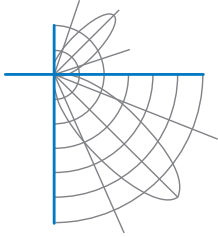
Zonal Flux Summary								
Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	944.4	2.2%	90-100	0.0	0.0%	0-20	3693	8.7%
10-20	2748	6.5%	100-110	0.0	0.0%	0-30	8046	19.0%
20-30	4353	10.3%	110-120	0.0	0.0%	0-40	13776	32.5%
30-40	5730	13.5%	120-130	0.0	0.0%	0-60	28520	67.3%
40-50	6885	16.2%	130-140	0.0	0.0%	0-80	41590	98.1%
50-60	7859	18.5%	140-150	0.0	0.0%	10-90	41448	97.8%
60-70	8043	19.0%	150-160	0.0	0.0%	20-50	16968	40.0%
70-80	5027	11.9%	160-170	0.0	0.0%	40-90	28617	67.5%
80-90	803.0	1.9%	170-180	0.0	0.0%	60-90	13873	32.7%
0-90	42393	100.0%	90-180	0.0	0.0%	0-180	42393	100.0%



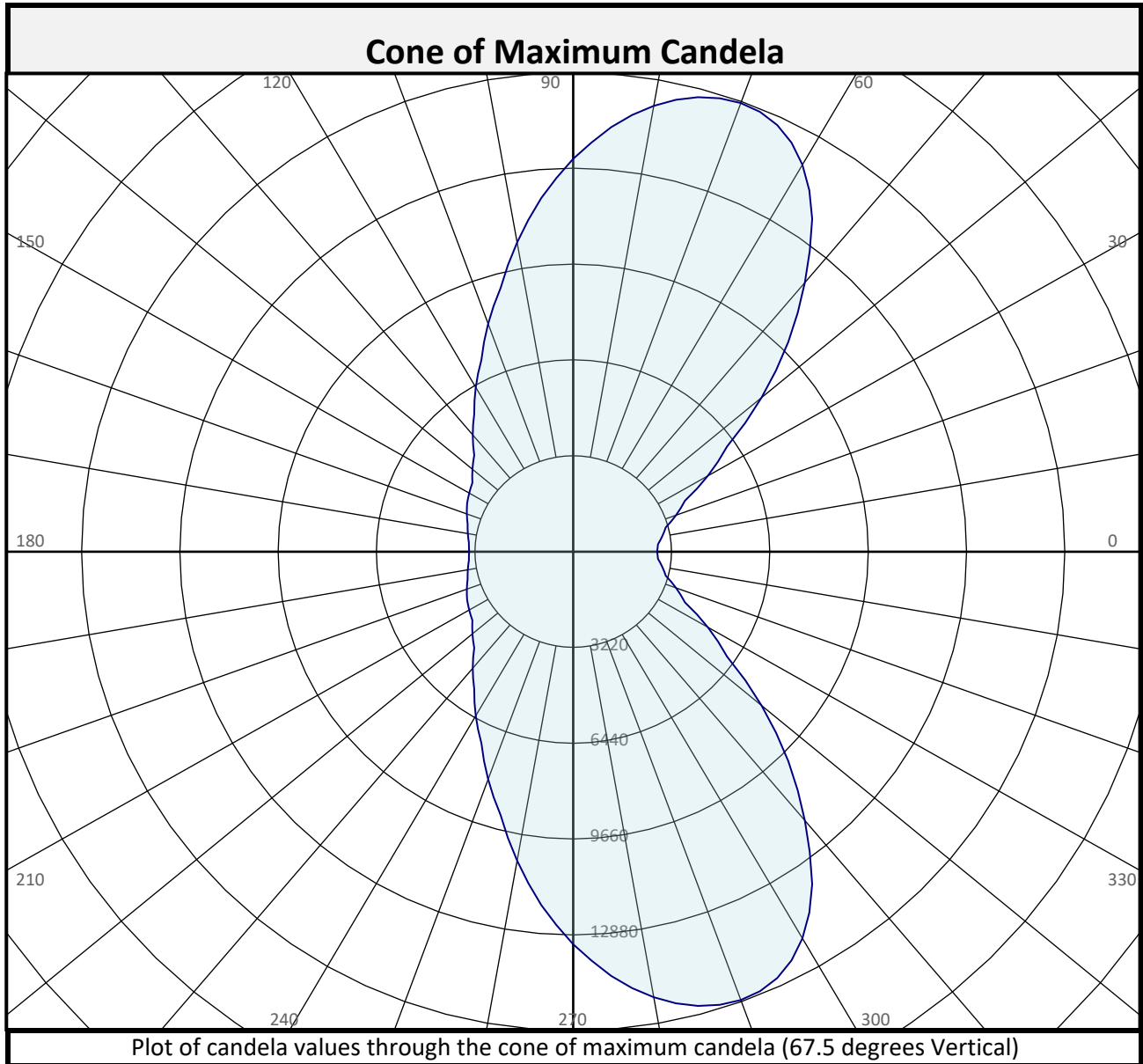
Report of Test  
LLIA002251-046



Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	25319.4	59.7%	0.0	0.0%	25319.4	59.7%
House Side	17073.1	40.3%	0.0	0.0%	17073.1	40.3%
<b>Total</b>	<b>42392.5</b>	<b>100.0%</b>	<b>0.0</b>	<b>0.0%</b>	<b>42392.5</b>	<b>100.0%</b>



Report of Test  
LLIA002251-046

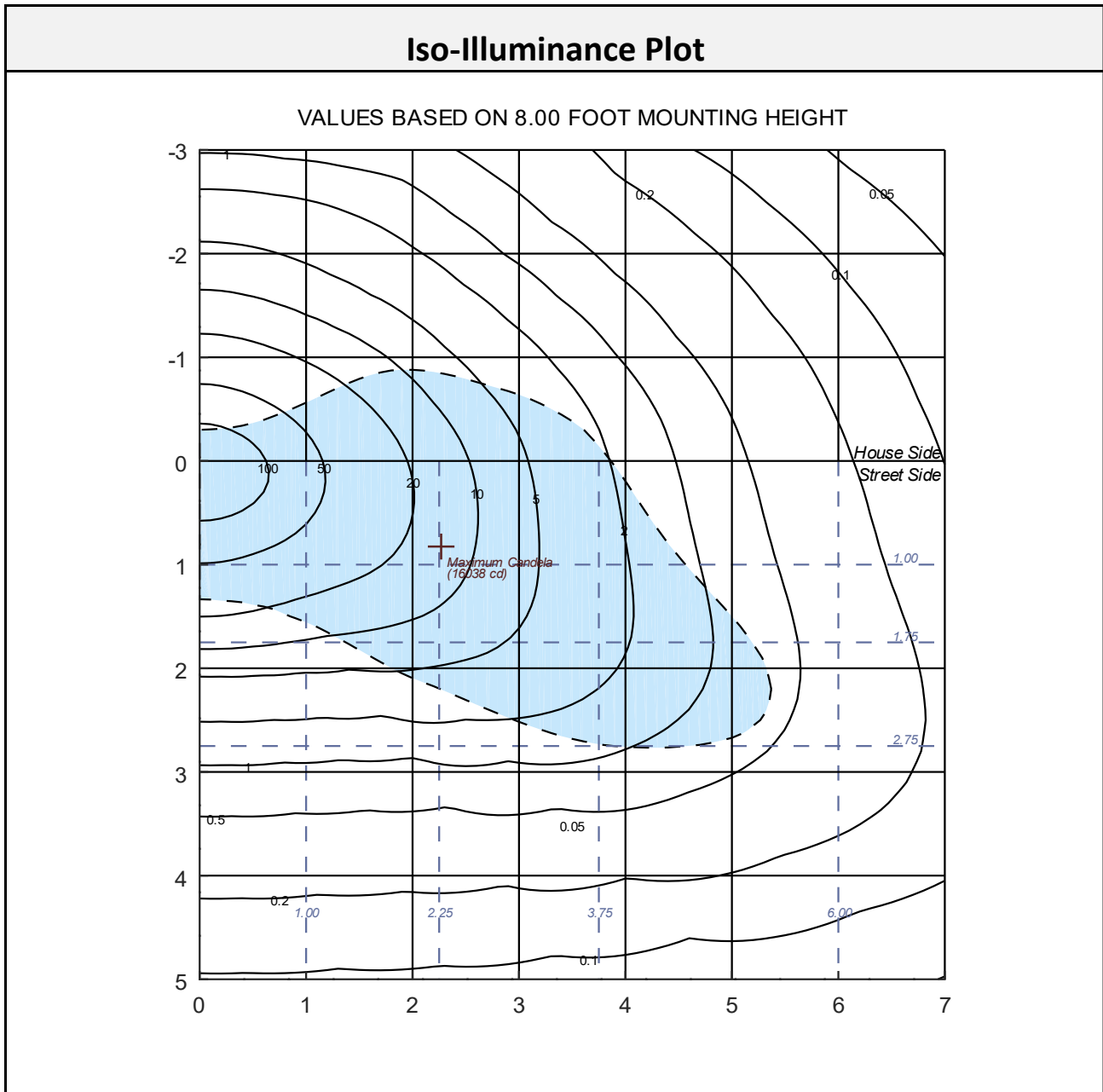


Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	25319.4	59.7%	0.0	0.0%	25319.4	59.7%
House Side	17073.1	40.3%	0.0	0.0%	17073.1	40.3%
<b>Total</b>	<b>42392.5</b>	<b>100.0%</b>	<b>0.0</b>	<b>0.0%</b>	<b>42392.5</b>	<b>100.0%</b>



## Report of Test

LLIA002251-046

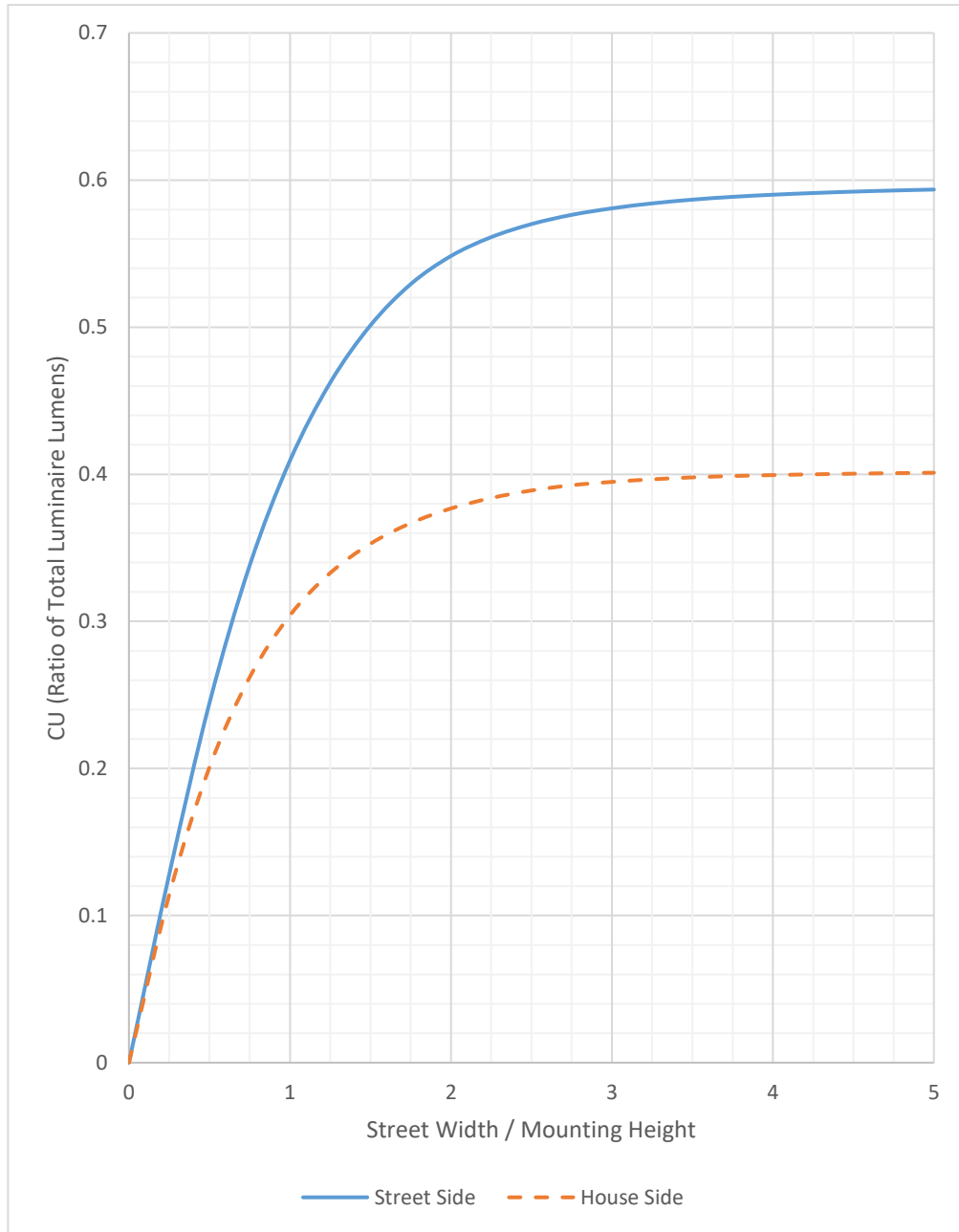


The isofootcandle values shown in the plot above are based on a mounting height of  $h = 8.0$  feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the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



## Report of Test LLIA002251-046

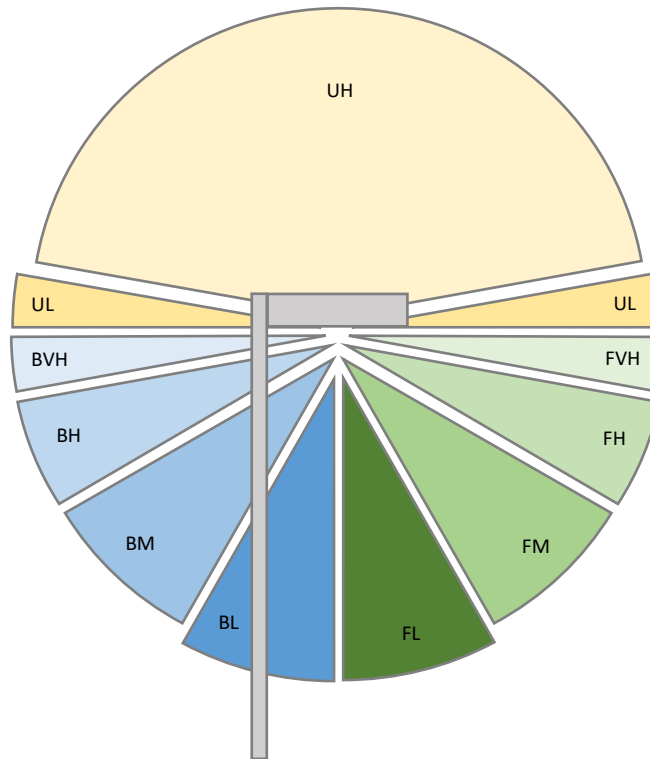
### Coefficients of Utilization Plot





Report of Test  
LLIA002251-046

LCS Tables and Bug Classification



**Back Light**

BL - Back Low (0°-30°)	3630.8 Lm
BM - Back Mid (30°-60°)	8462.9 Lm
BH - Back High (60°-80°)	4773.3 Lm
BVH - Back Very High (80°-90°)	206.2 Lm

**Forward Light**

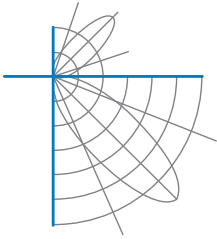
FL - Forward Low (0°-30°)	4415.2 Lm
FM - Forward Mid (30°-60°)	12010.6 Lm
FH - Forward High (60°-80°)	8296.7 Lm
FVH - Forward Very High (80°-90°)	596.8 Lm

**Uplight**

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

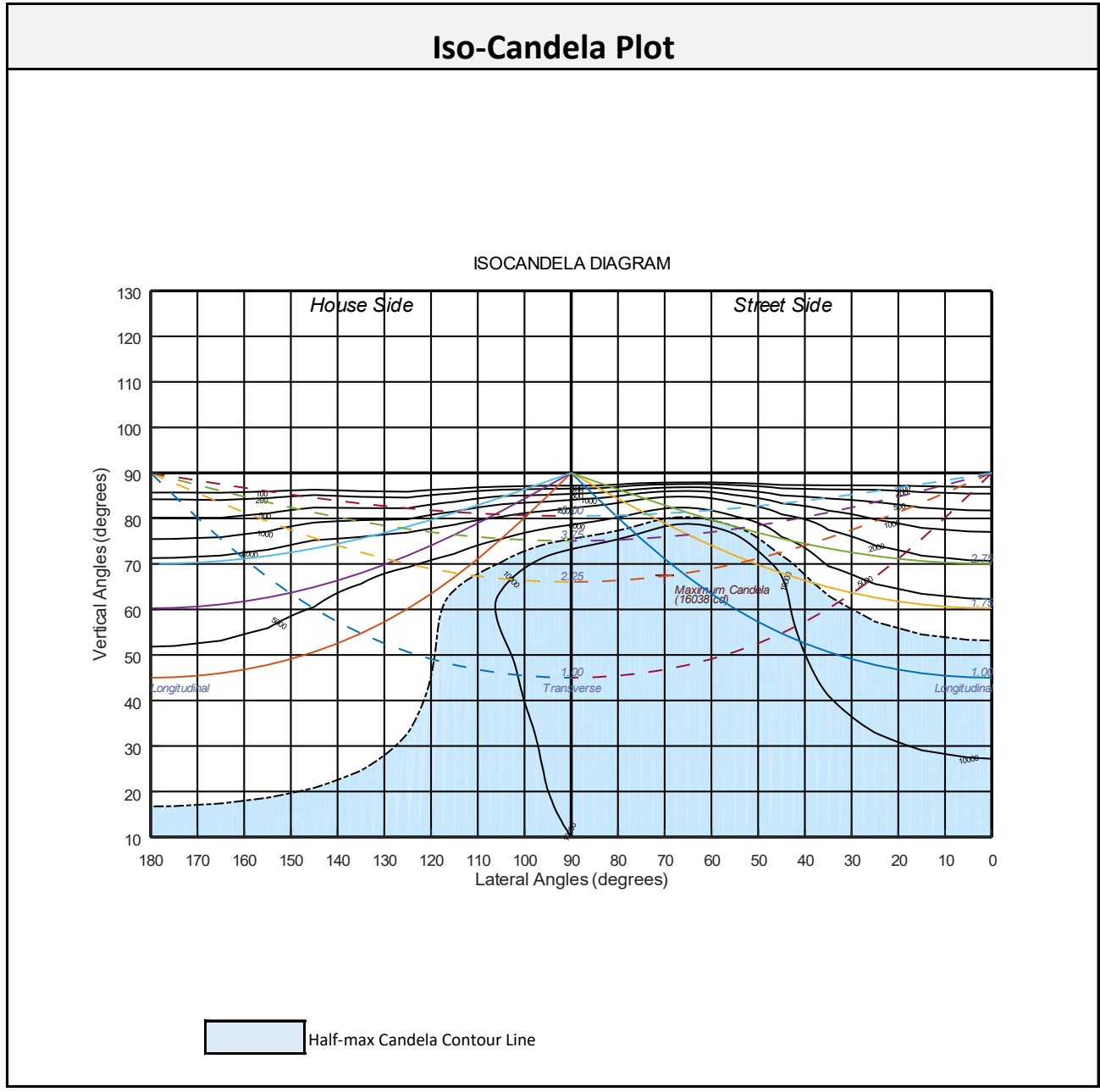
BUG Rating: Asymmetrical Luminaire (Type I, II, III, and IV) B4 - U0 - G4

BUG Rating: Quadrilateral Symmetrical Luminaire (Type V, Type VS) B4 - U0 - G4



Report of Test  
LLIA002251-046

**Iso-Candela Plot**







## Report of Test

LLIA002251-046

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	9934	9934	9934	9934	9934	9934	9934	9934	9934	9934	9934	9934	9934	9934	9934	
2.5	10127	10134	10130	10122	10107	10084	10054	10045	10039	10031	10024	10015	10008	9999	9991	
5	10289	10295	10289	10276	10252	10218	10171	10157	10145	10132	10118	10104	10089	10073	10056	
7.5	10408	10414	10410	10399	10376	10339	10284	10266	10253	10234	10214	10197	10174	10153	10129	
10	10478	10485	10488	10486	10474	10445	10394	10375	10359	10338	10315	10293	10266	10239	10210	
12.5	10502	10510	10523	10539	10545	10535	10494	10478	10461	10437	10418	10390	10360	10329	10295	
15	10485	10494	10516	10554	10589	10607	10586	10573	10557	10538	10514	10488	10458	10423	10385	
17.5	10425	10436	10472	10533	10604	10661	10671	10663	10653	10635	10617	10588	10560	10524	10480	
20	10338	10350	10397	10483	10592	10692	10749	10748	10743	10732	10716	10692	10662	10625	10578	
22.5	10233	10244	10304	10413	10558	10708	10813	10823	10828	10824	10813	10795	10767	10726	10680	
25	10116	10126	10199	10330	10512	10708	10866	10889	10906	10912	10908	10897	10872	10832	10786	
27.5	9983	9999	10082	10236	10454	10698	10910	10946	10977	10992	10999	10991	10972	10936	10891	
30	9838	9854	9949	10133	10389	10683	10946	10997	11034	11067	11083	11084	11071	11040	10995	
32.5	9672	9694	9804	10021	10318	10661	10978	11042	11095	11138	11165	11174	11171	11146	11105	
35	9500	9519	9642	9891	10238	10644	11013	11090	11156	11212	11252	11273	11277	11260	11223	
37.5	9337	9353	9473	9746	10152	10626	11063	11151	11234	11299	11353	11387	11401	11395	11365	
40	9177	9195	9312	9591	10048	10610	11123	11232	11329	11412	11474	11524	11548	11551	11526	
42.5	9019	9035	9156	9438	9932	10592	11205	11327	11437	11532	11611	11670	11704	11713	11696	
45	8844	8863	8988	9281	9807	10571	11282	11426	11551	11657	11743	11811	11853	11866	11855	
47.5	8637	8658	8795	9109	9675	10536	11363	11525	11664	11783	11879	11956	12006	12029	12020	
50	8398	8415	8561	8906	9532	10494	11454	11642	11803	11939	12053	12143	12208	12248	12253	
52.5	8104	8125	8280	8651	9356	10455	11580	11804	12003	12172	12317	12435	12521	12580	12598	
55	7759	7779	7948	8349	9146	10420	11766	12051	12305	12521	12707	12859	12971	13049	13078	
57.5	7239	7272	7512	7993	8894	10380	12055	12418	12739	13011	13242	13423	13558	13649	13684	
60	6278	6335	6759	7500	8586	10351	12441	12896	13294	13628	13909	14124	14273	14371	14400	
62.5	4888	4961	5521	6621	8156	10330	12882	13449	13940	14351	14679	14915	15066	15141	15138	
65	3606	3667	4167	5328	7393	10260	13314	13997	14579	15039	15385	15607	15722	15743	15674	
67.5	2749	2788	3141	4040	6153	9964	13645	14391	15011	15487	15812	15990	16038	15969	15806	
70	2141	2171	2416	3082	4743	9124	13547	14361	15021	15499	15771	15844	15729	15477	15144	
72.5	1661	1684	1864	2372	3591	7552	12845	13807	14505	14910	15037	14924	14606	14147	13632	
75	1266	1283	1417	1804	2715	5696	11375	12471	13257	13675	13721	13471	12993	12368	11689	
77.5	943	955	1054	1346	1997	3989	8939	10030	10895	11435	11588	11369	10817	10059	9260	
80	665	673	745	964	1375	2476	5632	6609	7515	8178	8443	8363	7963	7317	6580	
82.5	432	436	486	632	835	1298	2821	3418	4028	4512	4792	4817	4586	4143	3657	
85	231	233	262	338	397	515	1061	1292	1534	1718	1786	1783	1712	1556	1349	
87.5	65	64	72	77	78	82	155	182	206	217	212	207	193	171	146	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

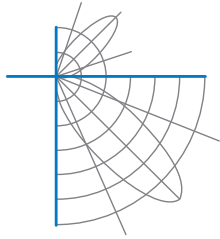
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.

**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

LLIA002251-046

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	9934	9934	9934	9934	9934	9934	9934	9934	9934	9934	9934	9934	9934	9934	9934	
2.5	9982	9973	9967	9959	9937	9913	9878	9840	9806	9774	9749	9729	9713	9706	9707	
5	10041	10022	10009	9991	9951	9906	9833	9751	9677	9606	9546	9500	9466	9448	9448	
7.5	10106	10081	10055	10032	9973	9908	9791	9661	9542	9428	9329	9250	9195	9167	9166	
10	10180	10146	10112	10077	9999	9917	9751	9570	9400	9240	9096	8984	8903	8861	8858	
12.5	10259	10215	10174	10130	10034	9927	9711	9477	9249	9036	8845	8693	8587	8533	8529	
15	10341	10292	10243	10190	10074	9945	9673	9381	9090	8819	8581	8405	8284	8224	8220	
17.5	10432	10377	10321	10253	10122	9968	9637	9280	8921	8597	8327	8135	8005	7939	7932	
20	10528	10466	10403	10326	10172	9997	9604	9177	8754	8382	8091	7882	7746	7674	7663	
22.5	10628	10561	10488	10406	10228	10027	9567	9070	8589	8179	7870	7645	7497	7424	7411	
25	10728	10658	10577	10487	10289	10056	9533	8970	8432	7990	7658	7415	7258	7182	7172	
27.5	10830	10756	10670	10578	10356	10096	9504	8874	8286	7812	7454	7194	7031	6951	6938	
30	10935	10859	10771	10669	10424	10136	9484	8790	8152	7643	7255	6981	6809	6727	6718	
32.5	11046	10969	10875	10763	10506	10195	9480	8722	8034	7483	7065	6776	6597	6515	6503	
35	11167	11095	10996	10880	10605	10267	9495	8666	7925	7333	6881	6576	6390	6304	6293	
37.5	11313	11237	11139	11019	10725	10362	9518	8617	7825	7182	6698	6376	6186	6097	6082	
40	11478	11401	11299	11172	10859	10468	9549	8575	7725	7035	6514	6176	5982	5889	5875	
42.5	11652	11569	11465	11332	10990	10566	9581	8537	7633	6885	6331	5979	5779	5684	5671	
45	11810	11731	11619	11476	11113	10668	9613	8510	7547	6742	6152	5784	5581	5487	5476	
47.5	11981	11903	11787	11639	11263	10785	9655	8486	7470	6605	5979	5593	5393	5304	5293	
50	12218	12145	12037	11880	11475	10965	9727	8475	7389	6471	5805	5409	5211	5128	5115	
52.5	12580	12507	12391	12235	11789	11215	9846	8478	7301	6328	5632	5230	5041	4967	4958	
55	13063	12996	12868	12681	12182	11546	9992	8482	7205	6167	5458	5060	4882	4816	4808	
57.5	13668	13589	13444	13234	12644	11899	10130	8468	7099	5987	5271	4888	4727	4674	4667	
60	14363	14255	14077	13813	13110	12242	10224	8411	6953	5784	5055	4704	4568	4531	4526	
62.5	15057	14889	14642	14314	13455	12434	10178	8256	6713	5509	4791	4489	4387	4358	4353	
65	15515	15271	14949	14537	13524	12357	9844	7862	6311	5119	4458	4221	4118	4057	4045	
67.5	15549	15207	14796	14315	13193	11928	9168	7104	5643	4577	4024	3828	3574	3424	3401	
70	14740	14286	13807	13309	12227	11013	8189	6051	4684	3892	3498	3145	2695	2505	2478	
72.5	13101	12550	12038	11555	10588	9539	6909	4872	3621	3075	2857	2216	1780	1635	1615	
75	11019	10390	9843	9362	8470	7603	5324	3637	2653	2267	2069	1436	1166	1090	1080	
77.5	8507	7832	7268	6809	6047	5323	3608	2464	1765	1557	1343	937	770	747	744	
80	5873	5241	4753	4365	3741	3189	2169	1485	953	908	844	621	513	513	514	
82.5	3164	2719	2403	2192	1842	1556	1189	750	456	469	485	360	305	317	319	
85	1128	942	802	718	622	548	474	266	160	177	212	160	138	144	143	
87.5	119	91	75	66	66	64	50	33	23	22	23	16	8	3	3	
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

LLIA002251-046

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

LLIA002251-046

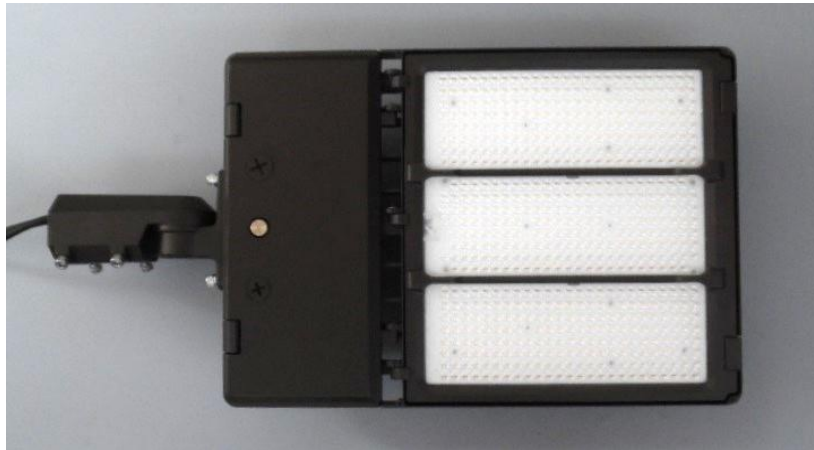
Luminous Intensity (Candela) Table

	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  
LLIA002251-046

**Additional Pictures of Test Subject**





## Report of Test

### LLIA002251-046

Test Distance                    9.5 m  
Ambient Temperature        25.6 °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.