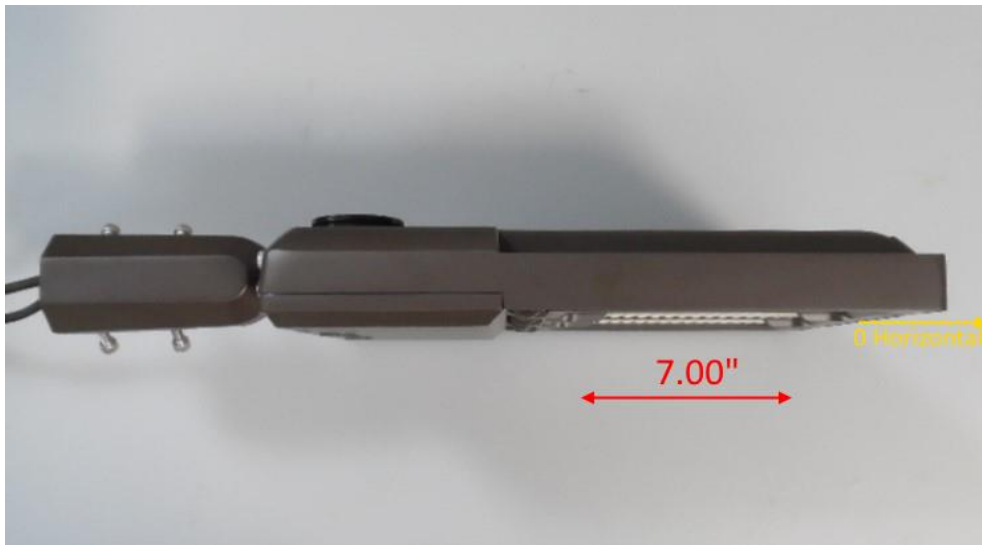


## Report of Test

LLIA002251-036

Roadway/Area Light Distribution Photometry Test Report

Catalog Number: ARL-150PCS-SWO - T5 Optics - 150W - 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	21271.0 Lumens
Input Current	1.208 A	Total Efficacy	147.1 Lm/W
Input Power	144.6 W		
Frequency	60.00 Hz		
Power Factor	0.998	Roadway Type	Area Light
Current THD	4.1 %		

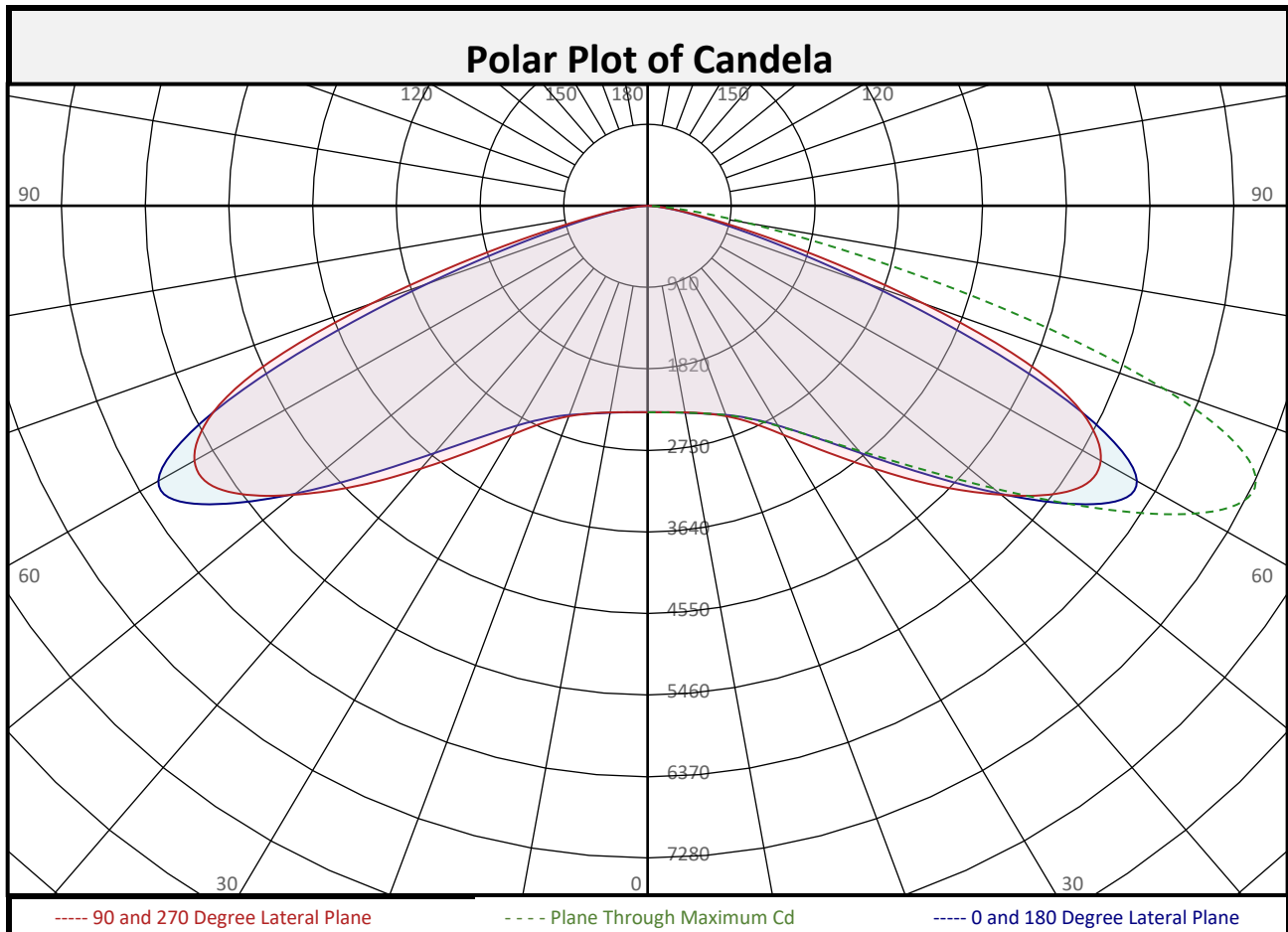
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 11/01/2023  
Report date: 11/06/2023

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

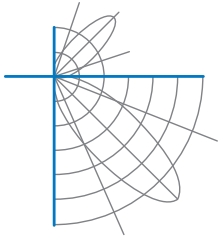


## Report of Test LLIA002251-036

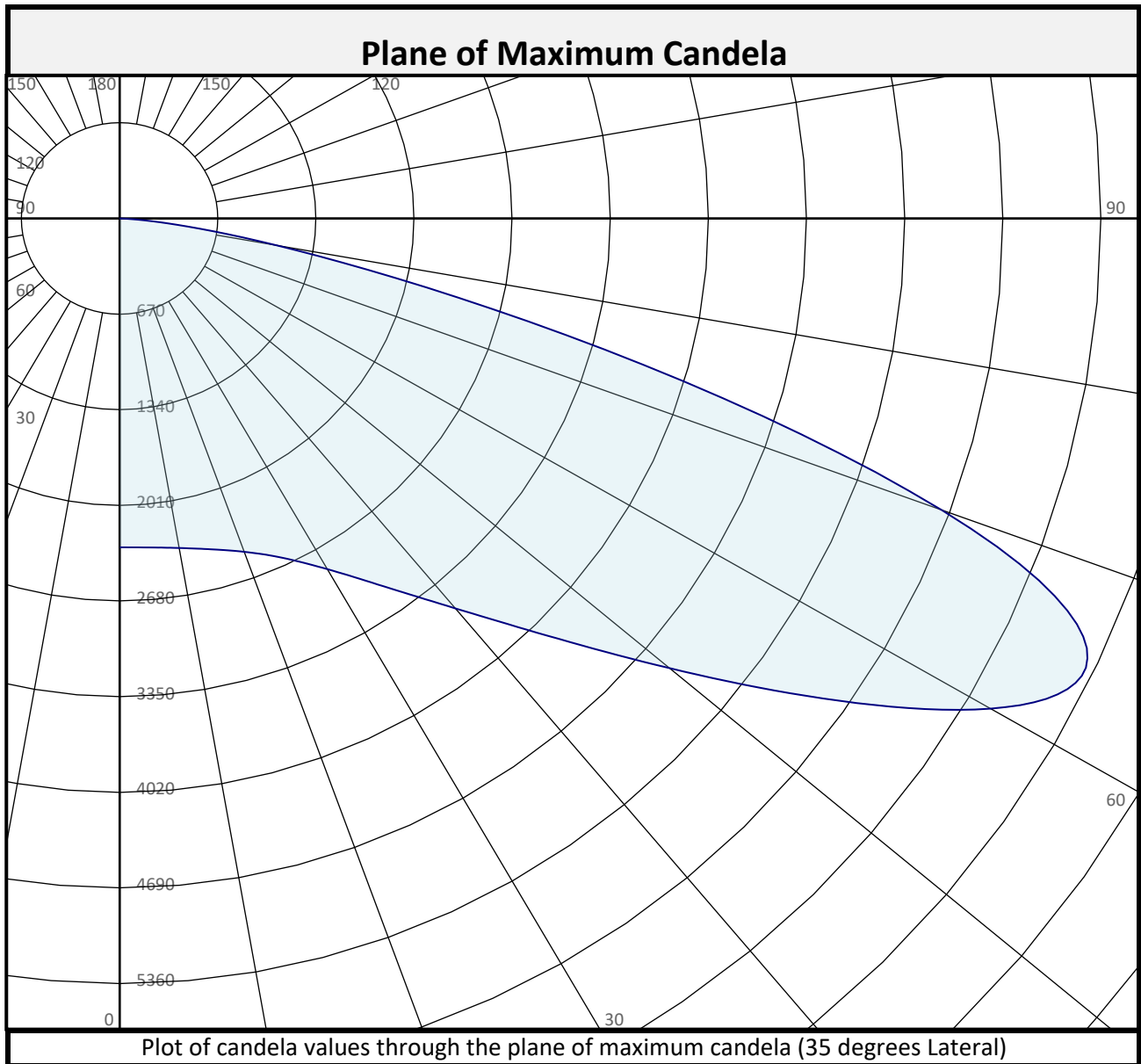


### Zonal Flux Summary

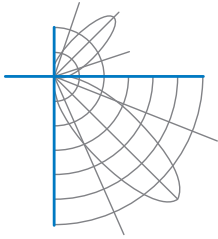
Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	221.9	1.0%	90-100	0.0	0.0%	0-20	906.2	4.3%
10-20	684.2	3.2%	100-110	0.0	0.0%	0-30	2140	10.1%
20-30	1234	5.8%	110-120	0.0	0.0%	0-40	4178	19.6%
30-40	2038	9.6%	120-130	0.0	0.0%	0-60	12675	59.6%
40-50	3322	15.6%	130-140	0.0	0.0%	0-80	21022	98.8%
50-60	5175	24.3%	140-150	0.0	0.0%	10-90	21049	99.0%
60-70	5846	27.5%	150-160	0.0	0.0%	20-50	6594	31.0%
70-80	2500	11.8%	160-170	0.0	0.0%	40-90	17093	80.4%
80-90	249.2	1.2%	170-180	0.0	0.0%	60-90	8596	40.4%
0-90	21271	100.0%	90-180	0.0	0.0%	0-180	21271	100.0%



Report of Test  
LLIA002251-036

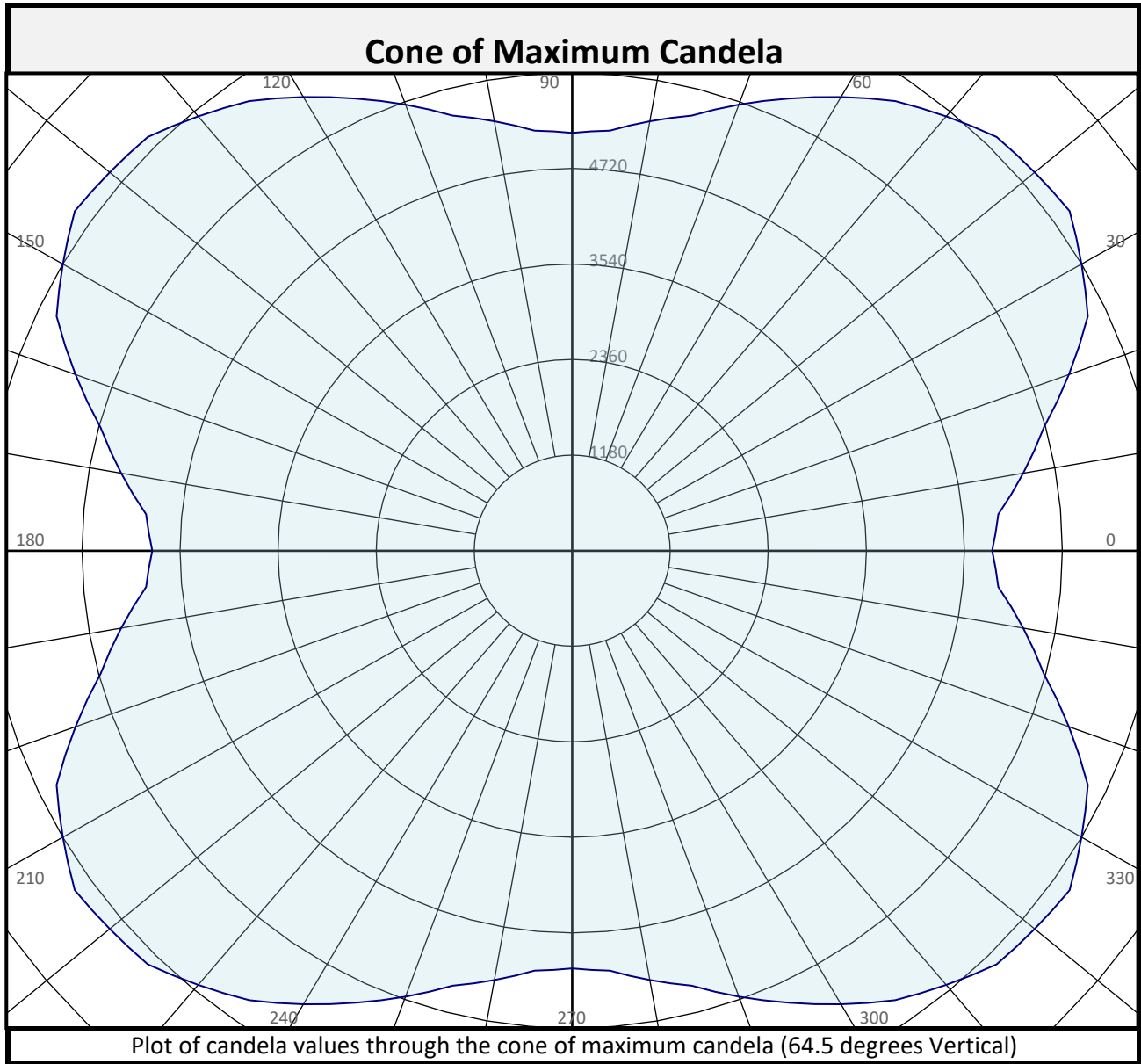


Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	10635.5	50.0%	0.0	0.0%	10635.5	50.0%
House Side	10635.5	50.0%	0.0	0.0%	10635.5	50.0%
<b>Total</b>	<b>21271.0</b>	<b>100.0%</b>	<b>0.0</b>	<b>0.0%</b>	<b>21271.0</b>	<b>100.0%</b>

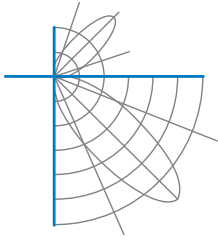


Report of Test

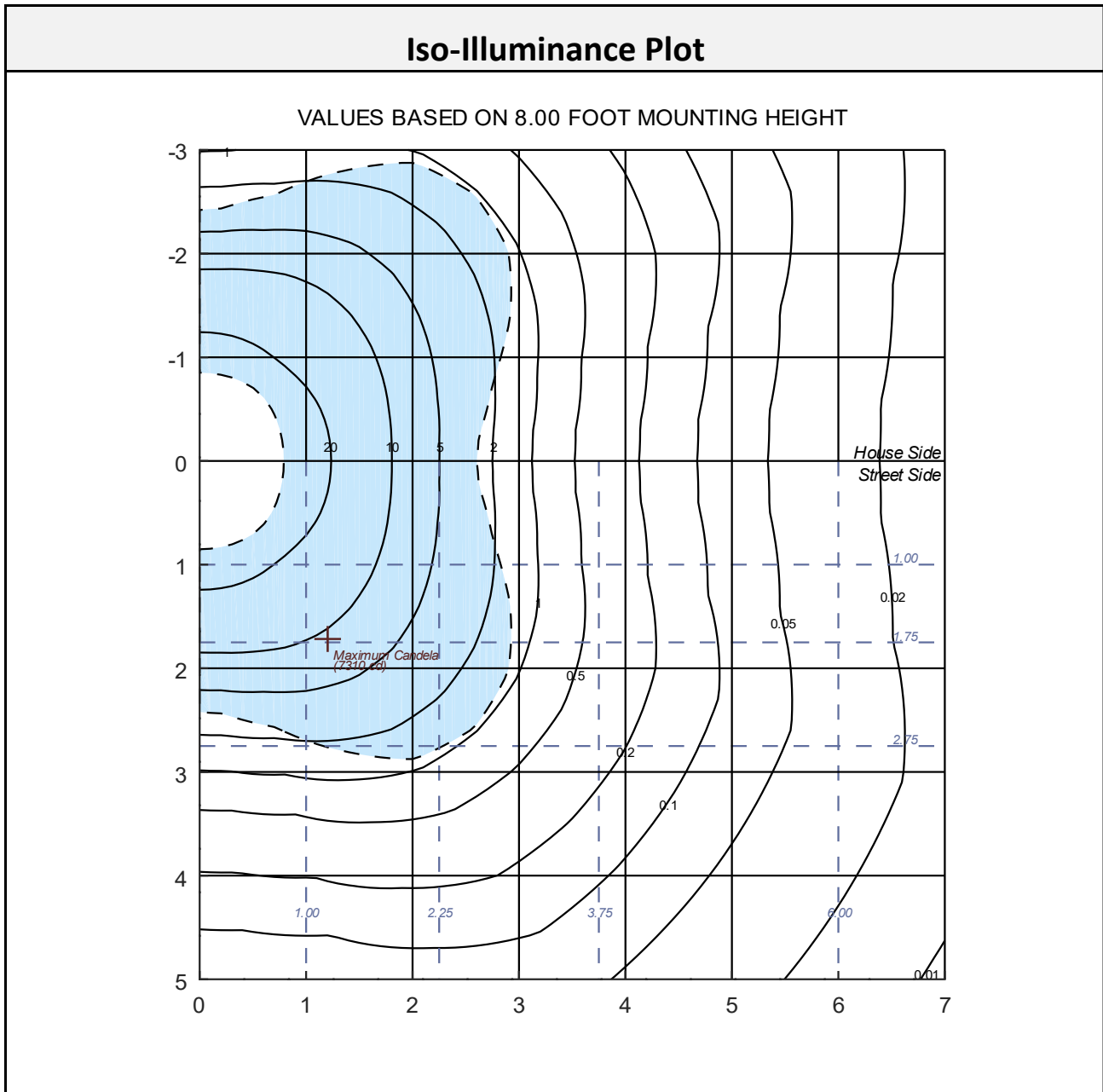
LLIA002251-036



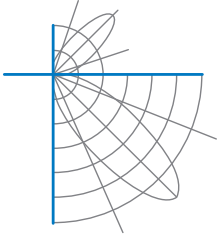
Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	10635.5	50.0%	0.0	0.0%	10635.5	50.0%
House Side	10635.5	50.0%	0.0	0.0%	10635.5	50.0%
<b>Total</b>	<b>21271.0</b>	<b>100.0%</b>	<b>0.0</b>	<b>0.0%</b>	<b>21271.0</b>	<b>100.0%</b>



Report of Test  
LLIA002251-036

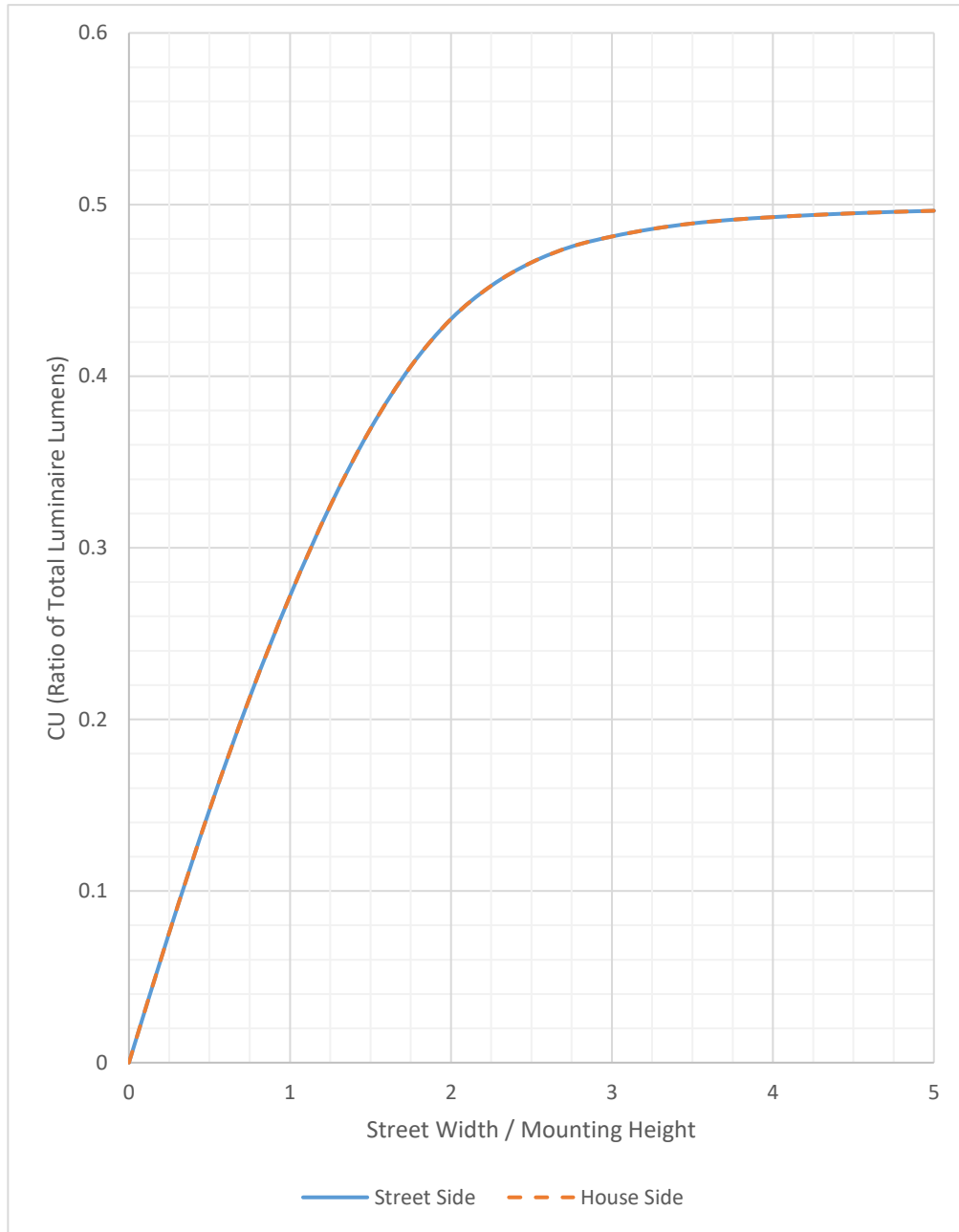


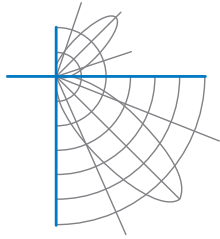
The isofootcandle values shown in the plot above are based on a mounting height of  $h = 8.0$  feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the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



## Report of Test LLIA002251-036

### Coefficients of Utilization Plot

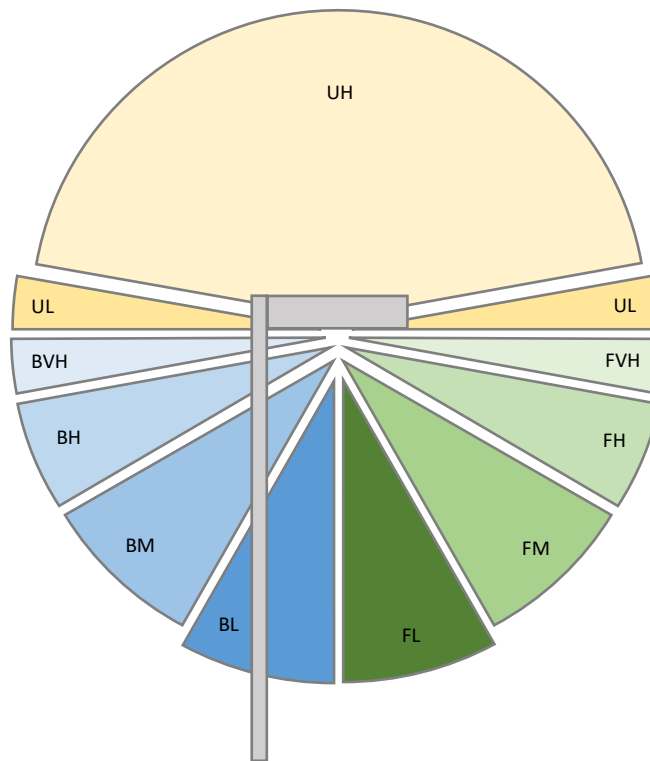




## Report of Test

LLIA002251-036

### LCS Tables and Bug Classification



#### Back Light

BL - Back Low (0°-30°)	1069.9 Lm
BM - Back Mid (30°-60°)	5267.8 Lm
BH - Back High (60°-80°)	4173.2 Lm
BVH - Back Very High (80°-90°)	124.6 Lm

#### Forward Light

FL - Forward Low (0°-30°)	1069.9 Lm
FM - Forward Mid (30°-60°)	5267.8 Lm
FH - Forward High (60°-80°)	4173.2 Lm
FVH - Forward Very High (80°-90°)	124.6 Lm

#### Uplight

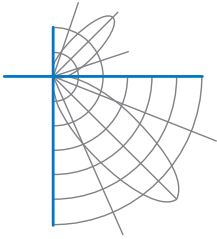
UL - Upward Low (90°-100°)	0.0 Lm
UH - Upward High (100°-180°)	0.0 Lm

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

B4 - U0 - G4

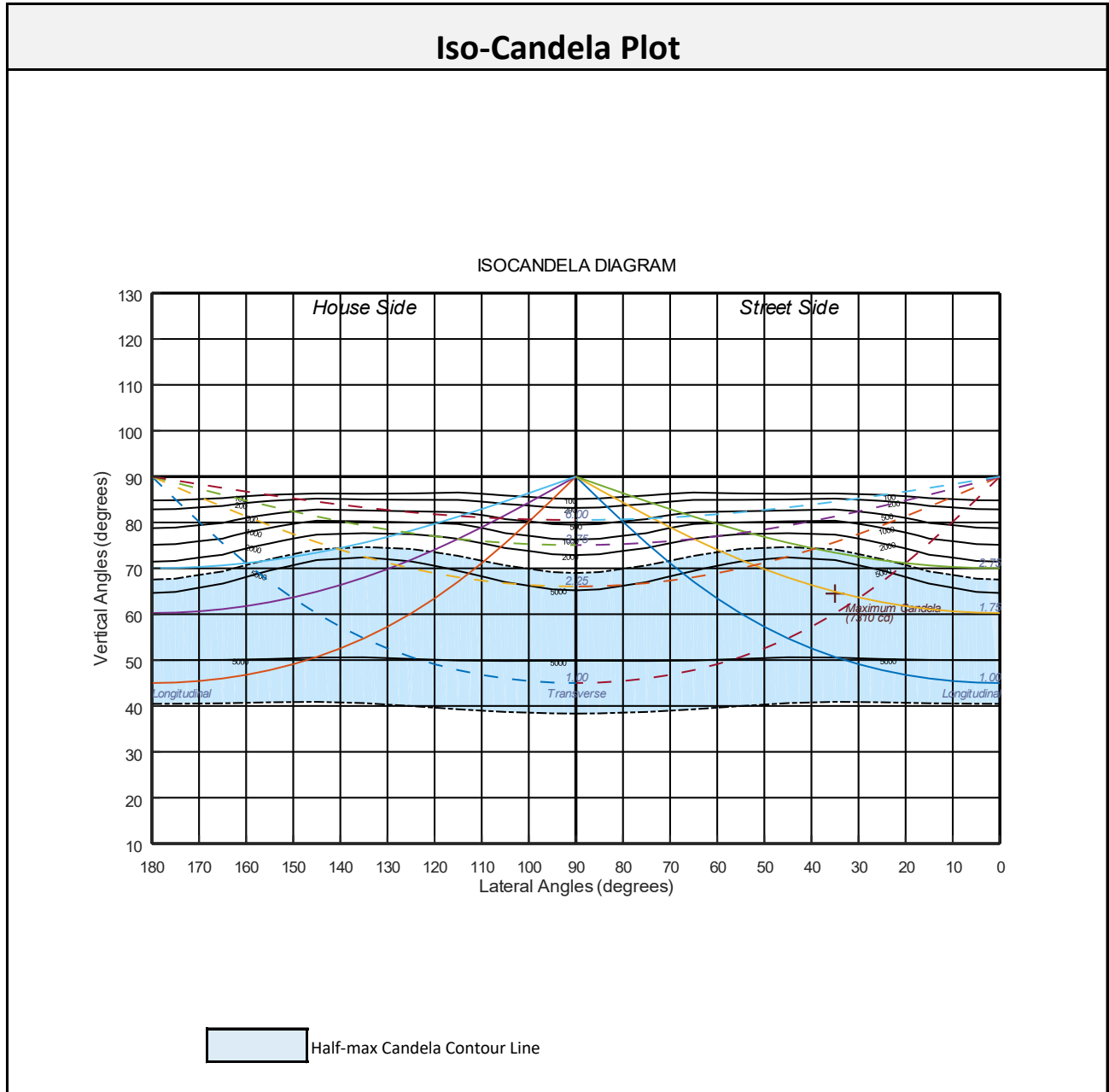
BUG Rating: Quadrilateral Symmetrical Luminaire (Type V, Type VS)

B4 - U0 - G2

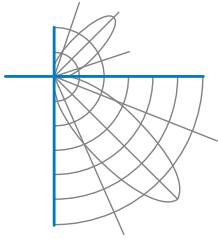


Report of Test  
LLIA002251-036

**Iso-Candela Plot**







## Report of Test

LLIA002251-036

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	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304
	2.5	2307	2307	2307	2307	2306	2306	2306	2306	2305	2305	2306
	5	2314	2315	2315	2315	2314	2313	2313	2313	2312	2312	2313
	7.5	2327	2328	2328	2327	2326	2326	2326	2324	2324	2324	2324
	10	2346	2347	2347	2345	2344	2344	2344	2342	2342	2341	2342
	12.5	2371	2372	2372	2370	2369	2369	2368	2367	2367	2366	2366
	15	2402	2403	2403	2401	2400	2400	2399	2400	2399	2399	2399
	17.5	2440	2440	2441	2439	2437	2439	2440	2442	2443	2443	2443
	20	2486	2486	2487	2486	2486	2488	2491	2495	2498	2500	2499
	22.5	2543	2545	2545	2544	2546	2551	2558	2565	2571	2574	2574
	25	2619	2620	2619	2619	2622	2630	2642	2655	2666	2671	2672
	27.5	2714	2715	2715	2714	2719	2730	2749	2769	2786	2795	2797
	30	2833	2834	2834	2832	2837	2852	2879	2909	2935	2949	2952
	32.5	2978	2978	2978	2974	2979	2999	3033	3074	3108	3130	3133
	35	3152	3153	3150	3143	3147	3170	3214	3266	3310	3336	3341
	37.5	3360	3359	3353	3341	3341	3366	3420	3483	3537	3567	3572
	40	3605	3603	3594	3574	3566	3594	3657	3730	3791	3823	3829
	42.5	3892	3890	3876	3846	3827	3853	3926	4008	4071	4105	4110
	45	4221	4222	4205	4167	4135	4155	4232	4319	4377	4404	4409
	47.5	4594	4595	4579	4537	4492	4501	4578	4656	4696	4709	4713
	50	5000	5001	4994	4958	4900	4895	4960	5013	5024	5019	5017
	52.5	5419	5424	5442	5426	5362	5336	5366	5383	5353	5318	5315
	55	5812	5822	5885	5919	5862	5805	5788	5748	5651	5573	5564
	57.5	6107	6130	6276	6401	6383	6285	6200	6070	5871	5730	5709
	60	6141	6190	6497	6803	6868	6737	6560	6283	5936	5717	5689
	62.5	5716	5795	6349	6989	7220	7095	6781	6303	5812	5515	5475
	65	4843	4942	5706	6762	7291	7225	6748	6097	5474	5098	5048
	67.5	3678	3772	4591	5991	6911	6959	6395	5607	4854	4358	4280
	70	2558	2632	3311	4751	5975	6195	5645	4799	3940	3294	3201
	72.5	1656	1705	2180	3379	4605	4937	4530	3753	2821	2215	2145
75	1023	1054	1340	2170	3154	3451	3257	2607	1779	1363	1316	
77.5	636	653	814	1311	1936	2076	1975	1614	1037	791	765	
80	391	400	487	768	1097	1072	1005	922	594	463	450	
82.5	219	223	272	412	555	520	490	462	317	250	243	
85	91	93	116	175	219	202	194	193	140	109	105	
87.5	8	8	12	18	27	33	43	51	39	29	28	
90	0	0	0	0	0	0	0	0	0	0	0	

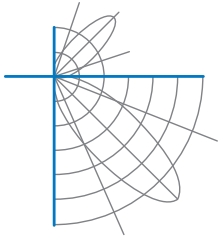


## Report of Test

LLIA002251-036

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	

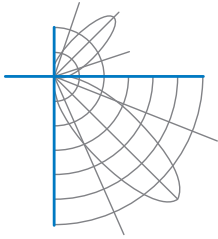


## Report of Test

LLIA002251-036

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	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304
	2.5	2306	2305	2305	2306	2306	2306	2306	2307	2307	2307	2307
	5	2313	2312	2312	2313	2313	2313	2314	2315	2315	2315	2314
	7.5	2324	2324	2324	2324	2326	2326	2326	2327	2328	2328	2327
	10	2342	2341	2342	2342	2344	2344	2344	2345	2347	2347	2346
	12.5	2366	2366	2367	2367	2368	2369	2369	2370	2372	2372	2371
	15	2399	2399	2399	2400	2399	2400	2400	2401	2403	2403	2402
	17.5	2443	2443	2443	2442	2440	2439	2437	2439	2441	2440	2440
	20	2499	2500	2498	2495	2491	2488	2486	2486	2487	2486	2486
	22.5	2574	2574	2571	2565	2558	2551	2546	2544	2545	2545	2543
	25	2672	2671	2666	2655	2642	2630	2622	2619	2619	2620	2619
	27.5	2797	2795	2786	2769	2749	2730	2719	2714	2715	2715	2714
	30	2952	2949	2935	2909	2879	2852	2837	2832	2834	2834	2833
	32.5	3133	3130	3108	3074	3033	2999	2979	2974	2978	2978	2978
	35	3341	3336	3310	3266	3214	3170	3147	3143	3150	3153	3152
	37.5	3572	3567	3537	3483	3420	3366	3341	3341	3353	3359	3360
	40	3829	3823	3791	3730	3657	3594	3566	3574	3594	3603	3605
	42.5	4110	4105	4071	4008	3926	3853	3827	3846	3876	3890	3892
	45	4409	4404	4377	4319	4232	4155	4135	4167	4205	4222	4221
	47.5	4713	4709	4696	4656	4578	4501	4492	4537	4579	4595	4594
	50	5017	5019	5024	5013	4960	4895	4900	4958	4994	5001	5000
	52.5	5315	5318	5353	5383	5366	5336	5362	5426	5442	5424	5419
	55	5564	5573	5651	5748	5788	5805	5862	5919	5885	5822	5812
	57.5	5709	5730	5871	6070	6200	6285	6383	6401	6276	6130	6107
	60	5689	5717	5936	6283	6560	6737	6868	6803	6497	6190	6141
	62.5	5475	5515	5812	6303	6781	7095	7220	6989	6349	5795	5716
	65	5048	5098	5474	6097	6748	7225	7291	6762	5706	4942	4843
	67.5	4280	4358	4854	5607	6395	6959	6911	5991	4591	3772	3678
70	3201	3294	3940	4799	5645	6195	5975	4751	3311	2632	2558	
72.5	2145	2215	2821	3753	4530	4937	4605	3379	2180	1705	1656	
75	1316	1363	1779	2607	3257	3451	3154	2170	1340	1054	1023	
77.5	765	791	1037	1614	1975	2076	1936	1311	814	653	636	
80	450	463	594	922	1005	1072	1097	768	487	400	391	
82.5	243	250	317	462	490	520	555	412	272	223	219	
85	105	109	140	193	194	202	219	175	116	93	91	
87.5	28	29	39	51	43	33	27	18	12	8	8	
90	0	0	0	0	0	0	0	0	0	0	0	

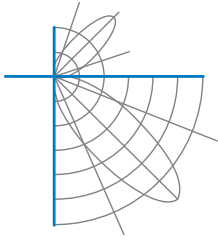


## Report of Test

LLIA002251-036

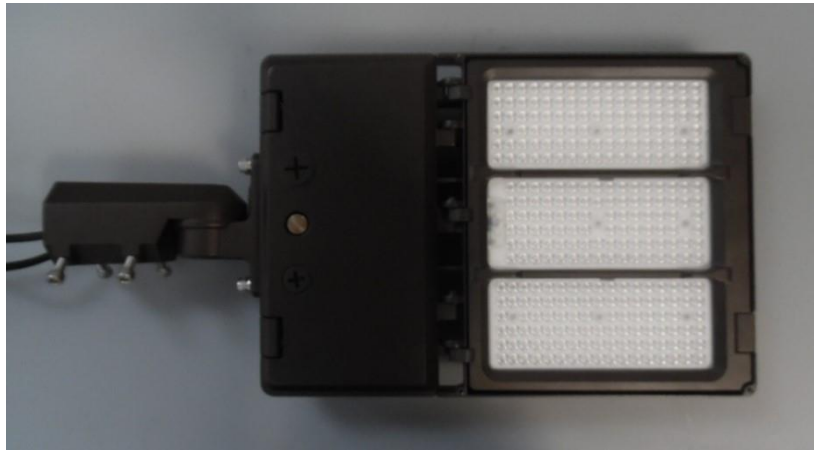
Luminous Intensity (Candela) Table

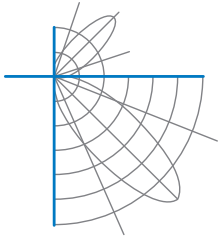
	Lateral (C-Plane) Angles											
	90	95	105	115	125	135	145	155	165	175	180	
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	0	0	0	0	0	0	0	0	0	0	0
	92.5	0	0	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0	0	0
	97.5	0	0	0	0	0	0	0	0	0	0	0
	100	0	0	0	0	0	0	0	0	0	0	0
	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  
LLIA002251-036

**Additional Pictures of Test Subject**





## Report of Test

### LLIA002251-036

Test Distance                    9.5 m  
Ambient Temperature        24.9 °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.