

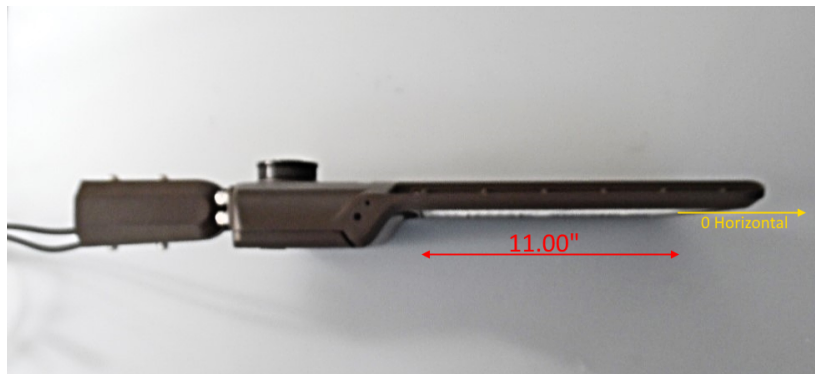


## Report of Test

**LLIA002251-013**

Roadway/Area Light Distribution Photometry Test Report

Catalog Number: ARL-300PCS-T4 -200W Setting - 4000K Setting  
Pole mounted, cast aluminum housing, white LED board with  
frosted plastic enclosure with clear optic sections below LEDs.  
728 white LEDs, 364 CW LEDs and 364 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	32436.4 Lumens
Input Current	1.664 A	Total Efficacy	163.8 Lm/W
Input Power	198.0 W		
Frequency	60.00 Hz	Roadway Throw	Short
Power Factor	0.992	Roadway Type	Type IV
Current THD	10.3 %		

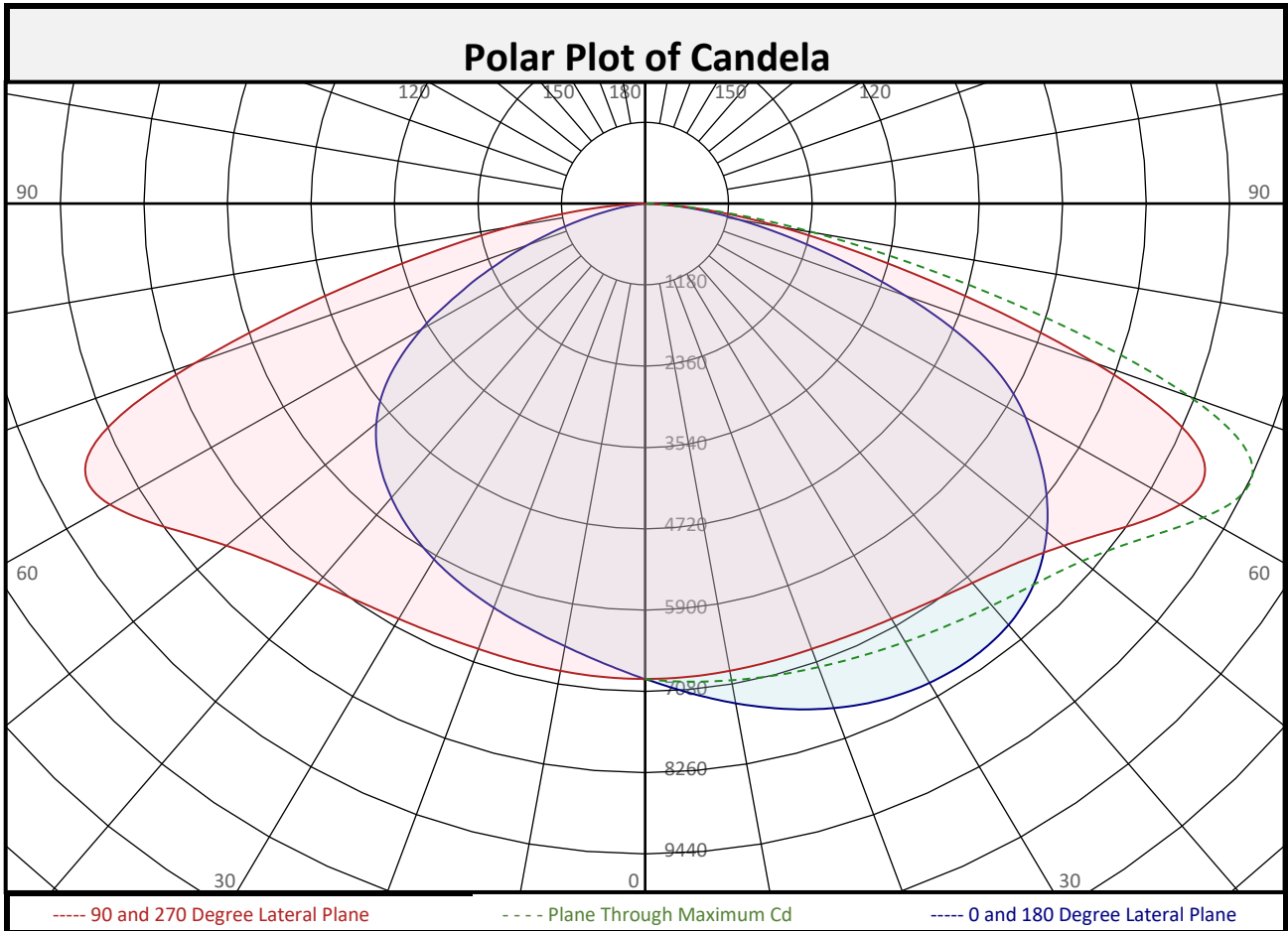
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 11/30/2023  
Report date: 12/05/2023

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



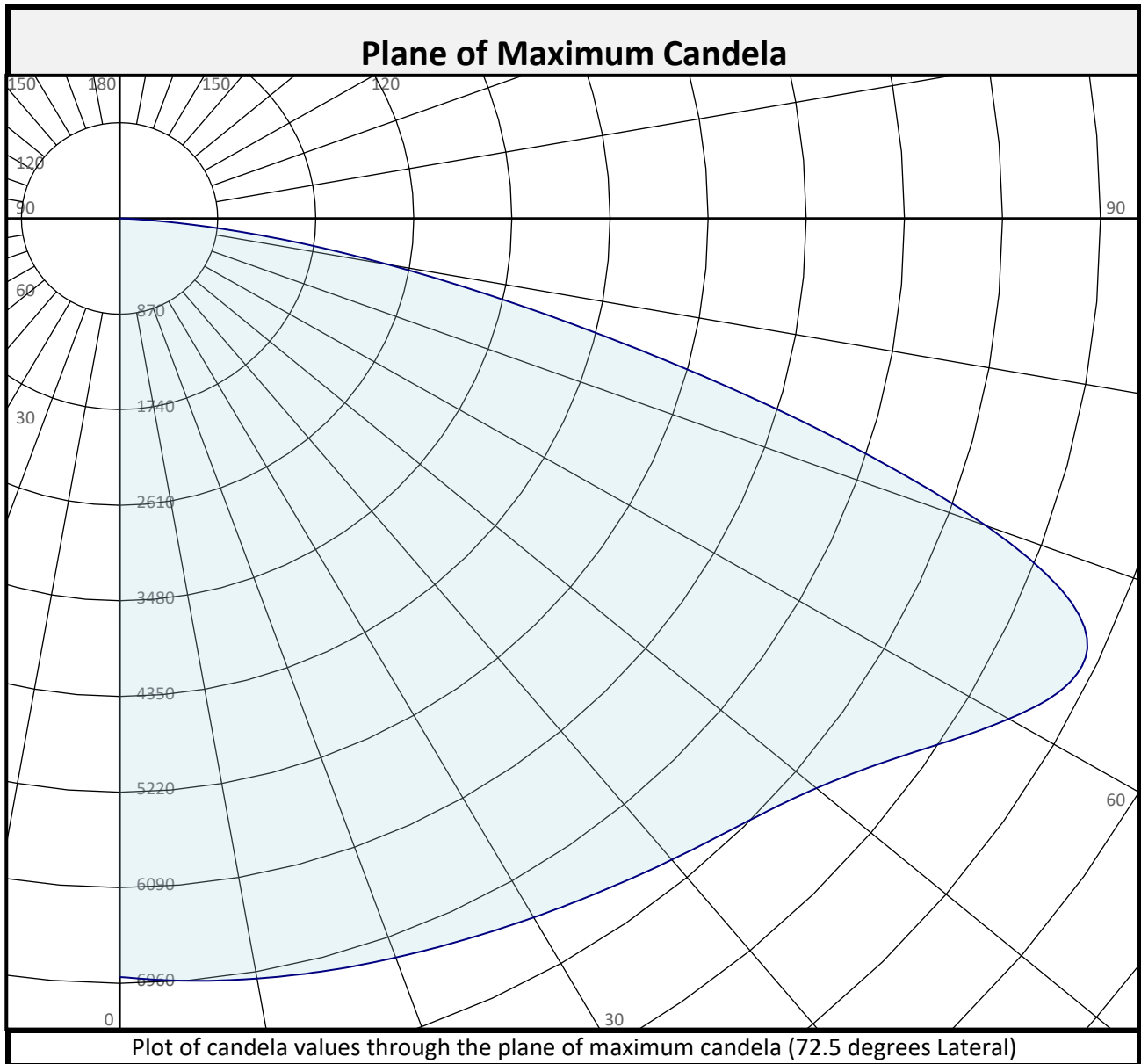
Report of Test  
LLIA002251-013



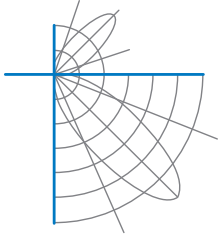
Zonal Flux Summary								
Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	660.0	2.0%	90-100	0.0	0.0%	0-20	2626	8.1%
10-20	1966	6.1%	100-110	0.0	0.0%	0-30	5854	18.0%
20-30	3228	10.0%	110-120	0.0	0.0%	0-40	10247	31.6%
30-40	4392	13.5%	120-130	0.0	0.0%	0-60	21709	66.9%
40-50	5381	16.6%	130-140	0.0	0.0%	0-80	31622	97.5%
50-60	6082	18.7%	140-150	0.0	0.0%	10-90	31776	98.0%
60-70	6092	18.8%	150-160	0.0	0.0%	20-50	13001	40.1%
70-80	3821	11.8%	160-170	0.0	0.0%	40-90	22190	68.4%
80-90	814.7	2.5%	170-180	0.0	0.0%	60-90	10728	33.1%
0-90	32436	100.0%	90-180	0.0	0.0%	0-180	32436	100.0%



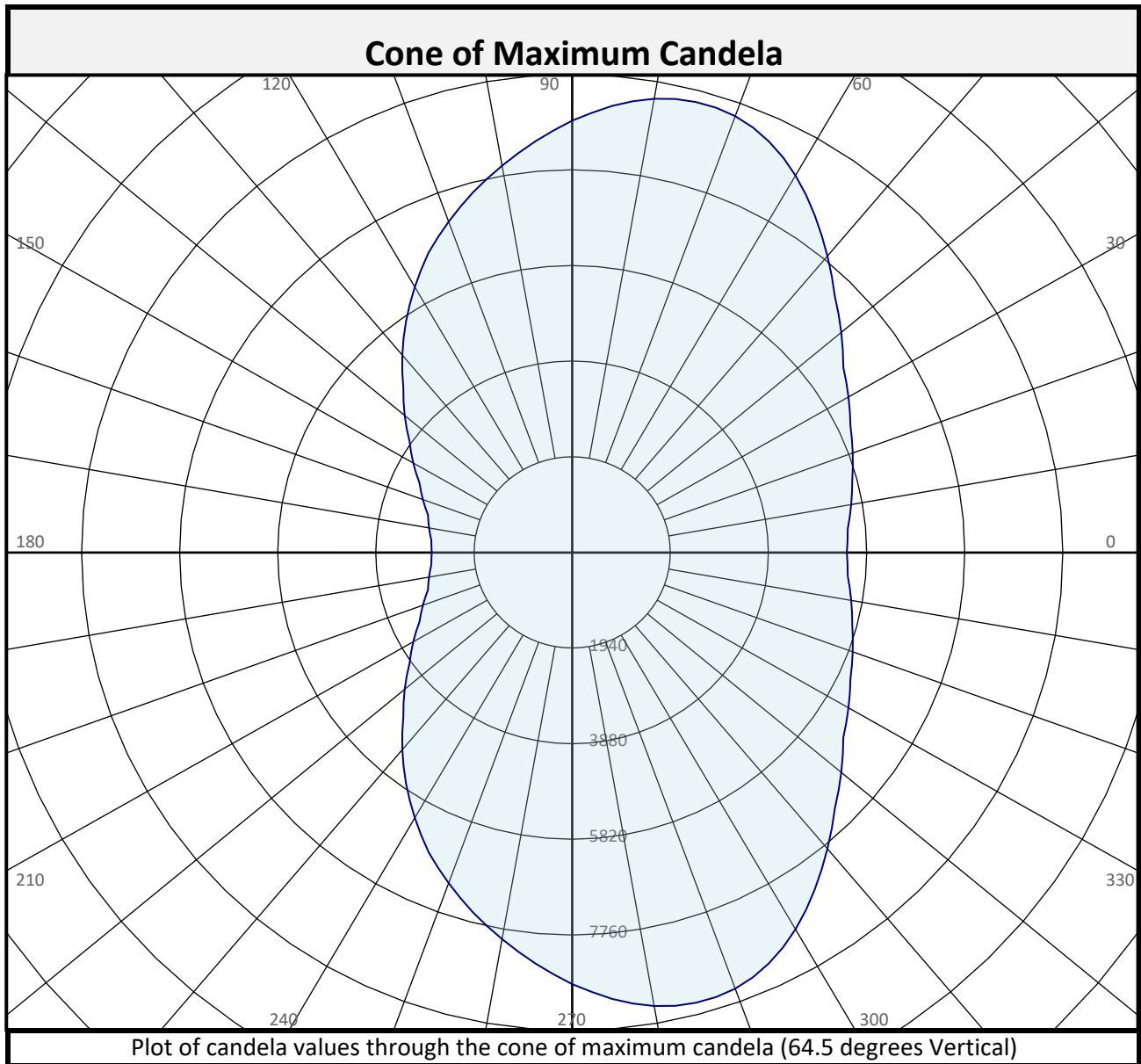
Report of Test  
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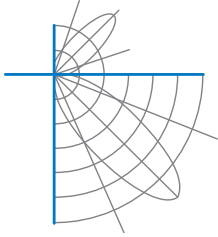
Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	18575.4	57.3%	0.0	0.0%	18575.4	57.3%
House Side	13861.1	42.7%	0.0	0.0%	13861.1	42.7%
<b>Total</b>	<b>32436.4</b>	<b>100.0%</b>	<b>0.0</b>	<b>0.0%</b>	<b>32436.4</b>	<b>100.0%</b>



Report of Test  
LLIA002251-013

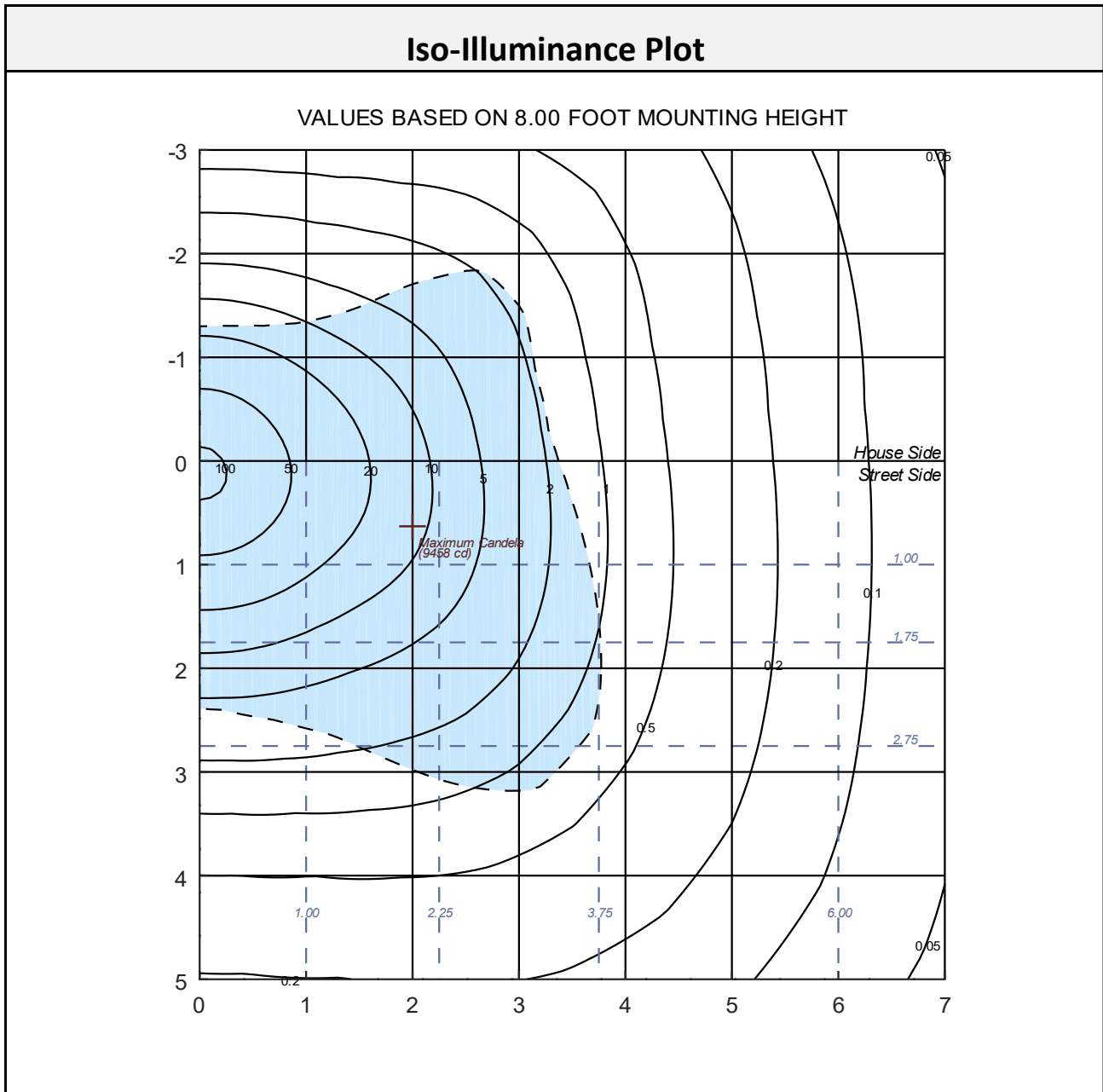


Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	18575.4	57.3%	0.0	0.0%	18575.4	57.3%
House Side	13861.1	42.7%	0.0	0.0%	13861.1	42.7%
<b>Total</b>	<b>32436.4</b>	<b>100.0%</b>	<b>0.0</b>	<b>0.0%</b>	<b>32436.4</b>	<b>100.0%</b>

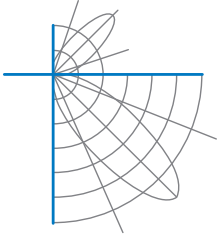


## Report of Test

LLIA002251-013

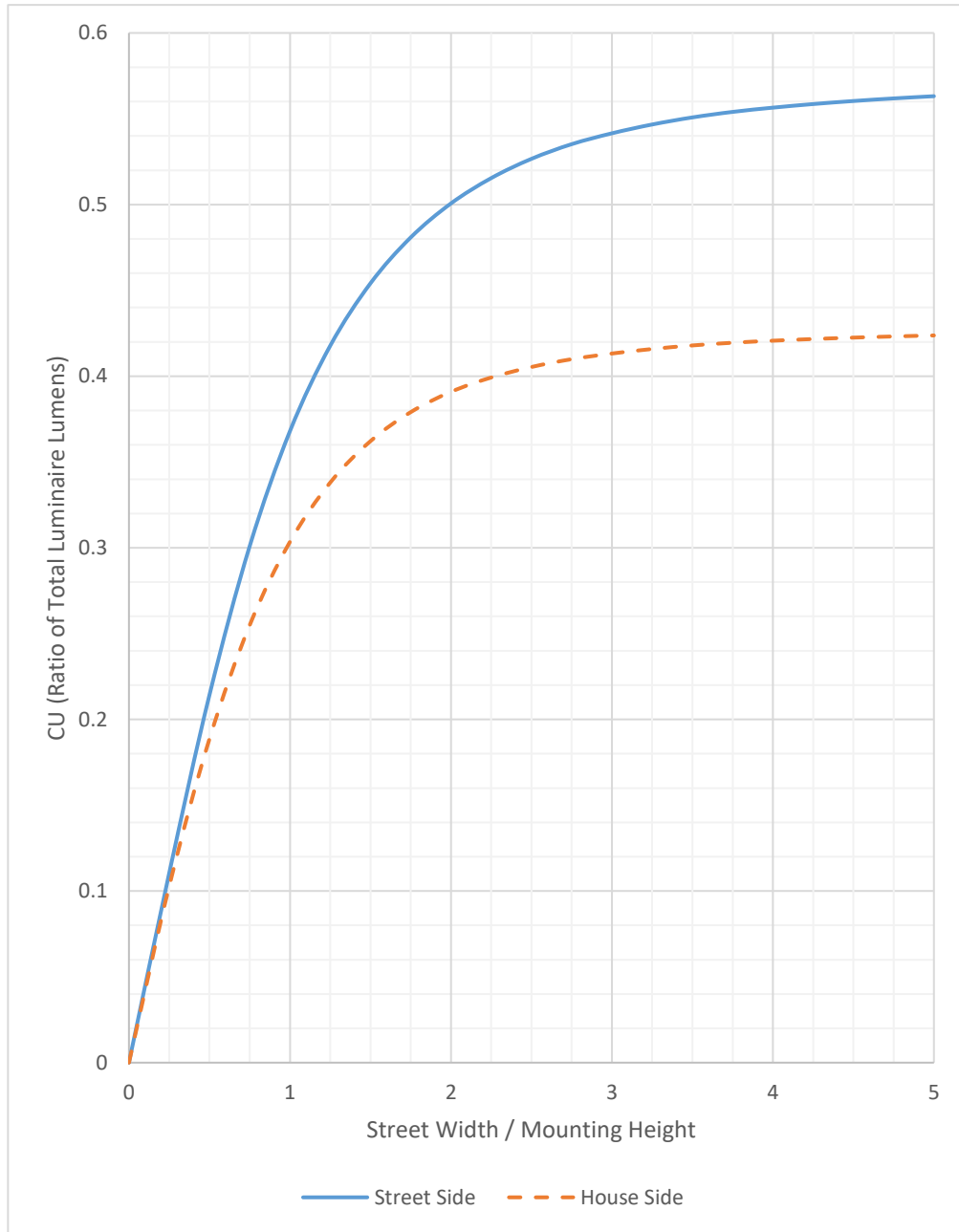


The isofootcandle values shown in the plot above are based on a mounting height of  $h = 8.0$  feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the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



## Report of Test LLIA002251-013

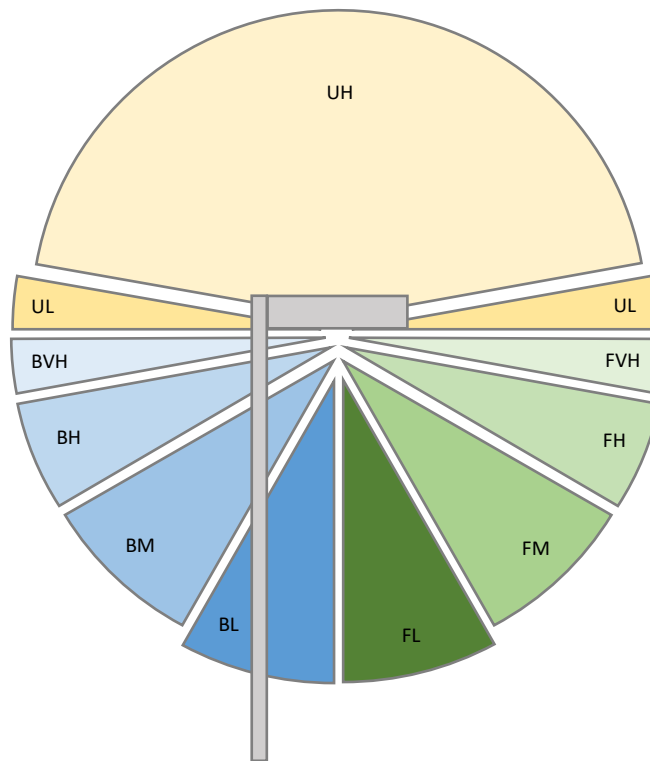
### Coefficients of Utilization Plot





## Report of Test LLIA002251-013

### LCS Tables and Bug Classification



#### Back Light

BL - Back Low (0°-30°)	2715.5 Lm
BM - Back Mid (30°-60°)	6911.3 Lm
BH - Back High (60°-80°)	3937.8 Lm
BVH - Back Very High (80°-90°)	296.5 Lm

#### Forward Light

FL - Forward Low (0°-30°)	3138.9 Lm
FM - Forward Mid (30°-60°)	8943.0 Lm
FH - Forward High (60°-80°)	5975.2 Lm
FVH - Forward Very High (80°-90°)	518.2 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)

B4 - U0 - G4

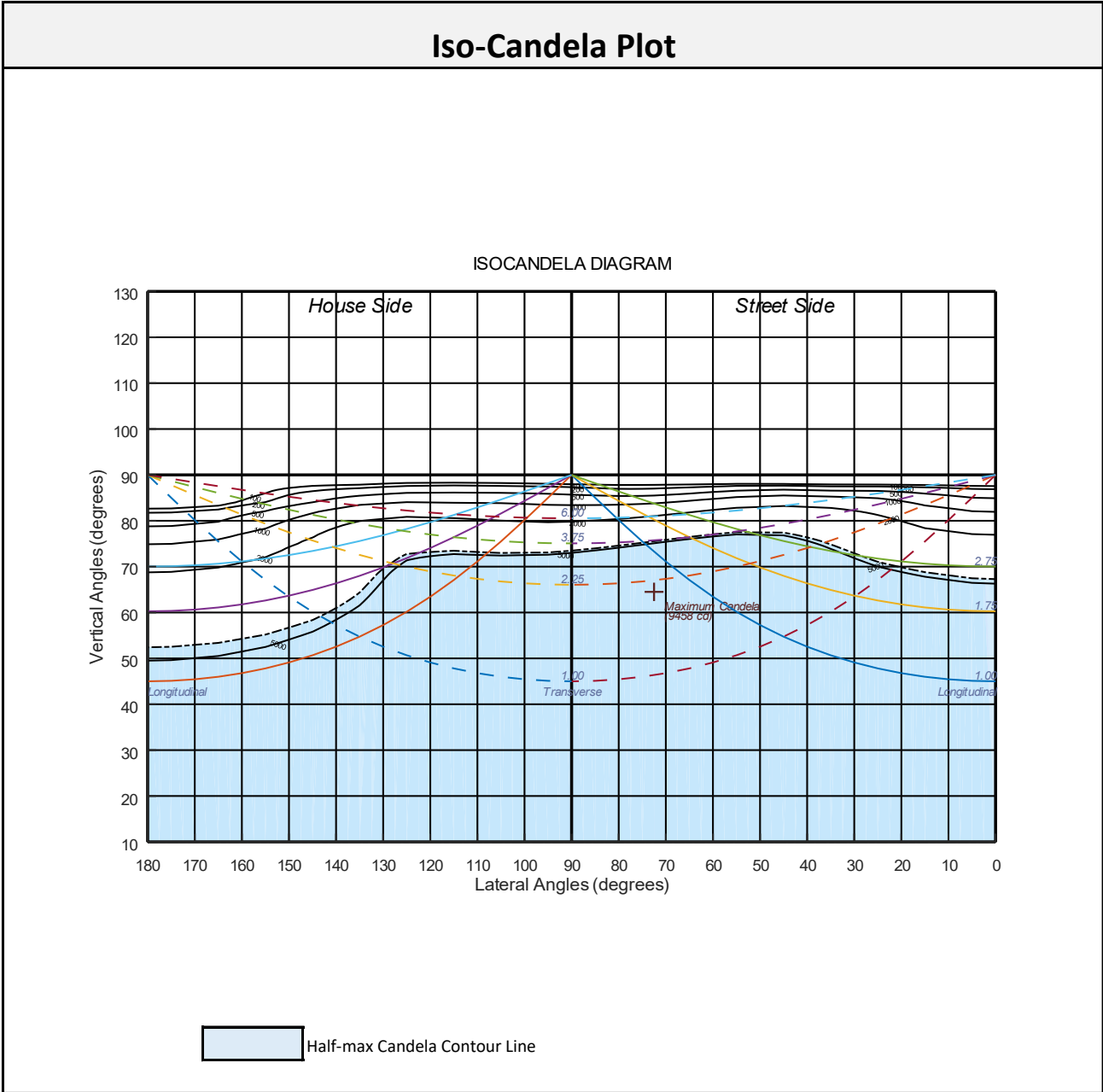
BUG Rating: Quadrilateral Symmetrical Luminaire (Type V, Type VS)

B4 - U0 - G4



Report of Test  
LLIA002251-013

**Iso-Candela Plot**







## Report of Test

**LLIA002251-013**

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	6903	6903	6903	6903	6903	6903	6903	6903	6903	6903	6903	6903	6903	6903	6903
2.5	7009	7015	7010	7002	6995	6983	6967	6962	6958	6953	6947	6944	6938	6933	6928
5	7127	7129	7121	7107	7087	7061	7030	7022	7012	7001	6993	6984	6974	6962	6955
7.5	7246	7246	7235	7213	7181	7142	7092	7081	7067	7052	7039	7023	7008	6992	6980
10	7365	7364	7351	7320	7278	7222	7157	7140	7122	7103	7084	7064	7044	7023	7005
12.5	7480	7482	7464	7427	7376	7306	7224	7201	7177	7153	7131	7105	7081	7053	7029
15	7591	7593	7573	7531	7471	7388	7288	7262	7233	7206	7177	7147	7117	7087	7058
17.5	7696	7699	7677	7631	7565	7469	7355	7324	7290	7258	7225	7190	7157	7120	7087
20	7791	7794	7771	7724	7651	7548	7421	7386	7348	7311	7276	7236	7196	7157	7116
22.5	7874	7876	7855	7810	7734	7623	7485	7448	7407	7368	7327	7284	7239	7196	7152
25	7944	7944	7927	7886	7808	7696	7550	7510	7468	7426	7380	7334	7286	7240	7192
27.5	7996	7999	7985	7949	7873	7761	7612	7572	7526	7481	7437	7388	7336	7290	7237
30	8033	8035	8028	7998	7928	7819	7674	7633	7587	7541	7495	7446	7393	7344	7288
32.5	8051	8058	8054	8032	7974	7870	7731	7692	7645	7603	7556	7506	7453	7403	7347
35	8054	8059	8062	8051	8002	7911	7785	7747	7708	7664	7620	7571	7520	7467	7412
37.5	8031	8043	8051	8055	8015	7940	7834	7802	7765	7728	7688	7641	7591	7541	7485
40	7987	7996	8016	8029	8009	7961	7880	7853	7822	7790	7753	7713	7667	7617	7565
42.5	7903	7915	7952	7980	7980	7961	7915	7898	7874	7851	7821	7787	7747	7703	7654
45	7782	7797	7849	7897	7923	7944	7940	7936	7925	7911	7892	7868	7835	7798	7758
47.5	7617	7636	7708	7780	7840	7904	7959	7968	7974	7974	7970	7960	7941	7915	7883
50	7412	7435	7531	7628	7728	7847	7975	8006	8029	8051	8069	8077	8077	8066	8048
52.5	7163	7190	7312	7441	7587	7772	7998	8056	8108	8158	8200	8233	8254	8263	8260
55	6875	6904	7057	7223	7418	7686	8036	8129	8219	8300	8374	8435	8483	8510	8522
57.5	6549	6585	6759	6967	7223	7593	8100	8236	8365	8488	8596	8687	8757	8805	8828
60	6208	6241	6432	6674	7000	7502	8192	8372	8545	8703	8845	8961	9050	9106	9138
62.5	5815	5846	6065	6350	6750	7416	8295	8517	8726	8914	9079	9211	9309	9367	9388
65	5314	5356	5636	5991	6487	7321	8362	8612	8840	9043	9210	9339	9420	9453	9443
67.5	4666	4718	5077	5568	6199	7196	8315	8561	8775	8948	9076	9150	9171	9140	9063
70	3923	3978	4379	5004	5851	6953	8017	8196	8331	8407	8430	8395	8311	8183	8018
72.5	3173	3225	3616	4328	5351	6521	7277	7337	7345	7298	7198	7056	6881	6683	6478
75	2479	2523	2872	3623	4684	5745	6100	6037	5940	5805	5641	5459	5260	5054	4855
77.5	1870	1904	2209	2942	3930	4694	4724	4604	4462	4297	4125	3946	3775	3605	3450
80	1354	1383	1649	2309	3073	3527	3375	3244	3109	2965	2818	2678	2548	2425	2320
82.5	902	928	1161	1685	2120	2322	2155	2048	1940	1830	1718	1615	1523	1445	1385
85	485	505	681	972	1108	1206	1063	983	909	841	778	719	671	631	609
87.5	107	113	151	192	199	241	225	204	188	173	158	150	143	136	132
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

**LLIA002251-013**

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	6903	6903	6903	6903	6903	6903	6903	6903	6903	6903	6903	6903	6903	6903	6903	
2.5	6926	6919	6916	6912	6896	6893	6873	6856	6840	6829	6817	6807	6800	6798	6794	
5	6948	6934	6926	6918	6892	6880	6843	6810	6780	6755	6733	6715	6704	6699	6697	
7.5	6969	6948	6937	6923	6889	6865	6811	6762	6720	6684	6653	6629	6615	6609	6604	
10	6988	6963	6947	6928	6883	6850	6777	6714	6659	6615	6578	6551	6533	6525	6519	
12.5	7006	6979	6956	6933	6879	6837	6747	6669	6602	6548	6508	6477	6457	6450	6446	
15	7027	6995	6965	6938	6875	6822	6716	6624	6547	6486	6442	6409	6387	6377	6373	
17.5	7051	7013	6979	6947	6875	6813	6688	6582	6496	6427	6378	6342	6320	6309	6307	
20	7078	7037	6996	6959	6877	6808	6665	6544	6448	6371	6317	6279	6255	6243	6241	
22.5	7110	7065	7020	6975	6887	6804	6645	6511	6403	6318	6258	6216	6191	6177	6175	
25	7144	7095	7049	6999	6902	6811	6632	6482	6360	6266	6201	6156	6125	6111	6109	
27.5	7186	7134	7084	7032	6928	6823	6625	6458	6324	6220	6145	6093	6058	6042	6039	
30	7234	7180	7126	7072	6957	6845	6625	6440	6289	6175	6087	6028	5986	5966	5962	
32.5	7291	7232	7177	7120	6997	6876	6636	6430	6262	6129	6031	5960	5909	5885	5879	
35	7355	7296	7238	7176	7047	6918	6658	6430	6239	6086	5970	5886	5824	5794	5788	
37.5	7427	7369	7309	7241	7111	6971	6692	6440	6222	6044	5908	5806	5730	5691	5687	
40	7511	7451	7390	7326	7186	7040	6738	6459	6211	6002	5839	5716	5627	5580	5575	
42.5	7602	7547	7485	7423	7278	7124	6800	6488	6204	5959	5763	5615	5510	5459	5452	
45	7711	7662	7601	7537	7392	7231	6880	6529	6198	5910	5675	5501	5380	5320	5311	
47.5	7847	7798	7745	7684	7537	7368	6979	6580	6191	5848	5571	5366	5229	5159	5153	
50	8018	7982	7934	7873	7721	7538	7102	6640	6178	5768	5442	5201	5044	4968	4959	
52.5	8241	8208	8165	8105	7946	7744	7249	6707	6154	5663	5280	4999	4819	4732	4721	
55	8518	8491	8448	8387	8212	7983	7411	6772	6111	5527	5075	4749	4544	4441	4426	
57.5	8826	8804	8755	8686	8489	8224	7569	6825	6046	5353	4825	4449	4207	4081	4065	
60	9137	9109	9048	8967	8732	8421	7677	6849	5956	5144	4530	4098	3812	3668	3649	
62.5	9373	9327	9247	9136	8854	8495	7685	6809	5839	4910	4197	3704	3354	3171	3150	
65	9396	9306	9187	9041	8690	8298	7506	6672	5689	4667	3850	3234	2863	2707	2688	
67.5	8944	8787	8613	8418	8019	7630	7011	6384	5490	4419	3434	2780	2398	2227	2209	
70	7829	7612	7395	7177	6773	6452	6120	5868	5211	4113	3042	2345	1965	1797	1779	
72.5	6259	6037	5821	5629	5289	5052	4959	5085	4789	3736	2649	1926	1530	1384	1368	
75	4664	4482	4314	4165	3921	3767	3797	4130	4074	3252	2228	1501	1137	994	981	
77.5	3308	3179	3065	2967	2813	2725	2808	3155	3239	2672	1794	1121	770	658	647	
80	2227	2146	2079	2023	1939	1904	2008	2202	2311	1978	1315	750	481	400	393	
82.5	1337	1300	1271	1250	1226	1230	1337	1394	1459	1225	839	437	194	122	117	
85	598	597	603	614	637	671	732	743	752	605	352	138	25	1	1	
87.5	130	129	136	146	169	192	217	235	214	142	108	47	8	1	1	
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

LLIA002251-013

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	

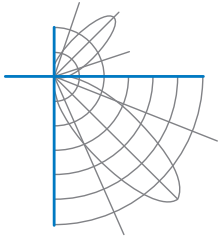


## Report of Test

LLIA002251-013

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  
LLIA002251-013

**Additional Pictures of Test Subject**





## Report of Test

### LLIA002251-013

Test Distance                    9.5 m  
Ambient Temperature        25.5 °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.