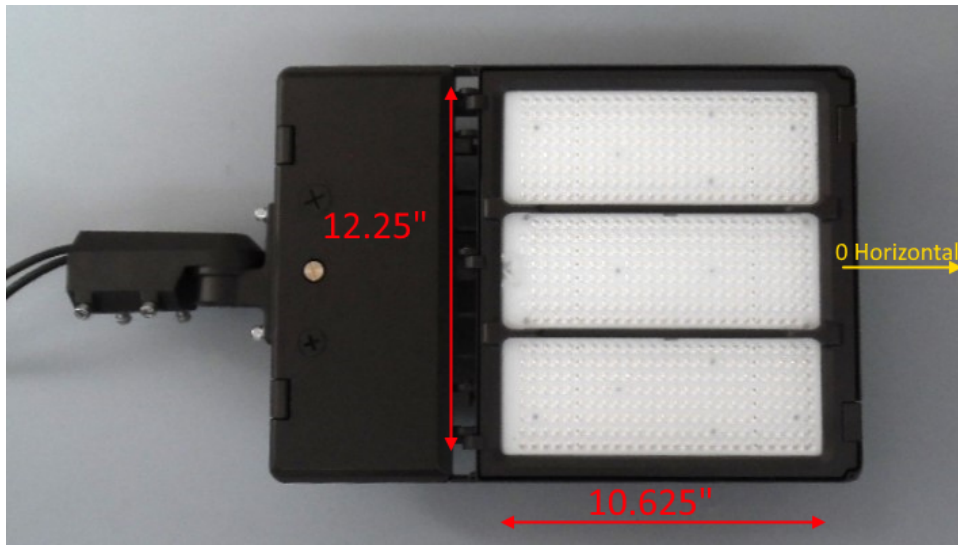


Report of Test

LLIA002251-039

Roadway/Area Light Distribution Photometry Test Report

Catalog Number: ARL-300PCS-SWO - T4 Optics - 200W - 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



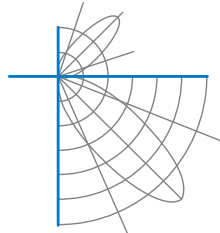
Prepared For:
Topaz Lighting Corp
925 Waverly Avenue
Holtsville, NY 11742, USA

Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	30277.6 Lumens
Input Current	1.628 A	Total Efficacy	156.6 Lm/W
Input Power	193.3 W		
Frequency	60.00 Hz	Roadway Throw	Short
Power Factor	0.989	Roadway Type	Type IV
Current THD	11.6 %		

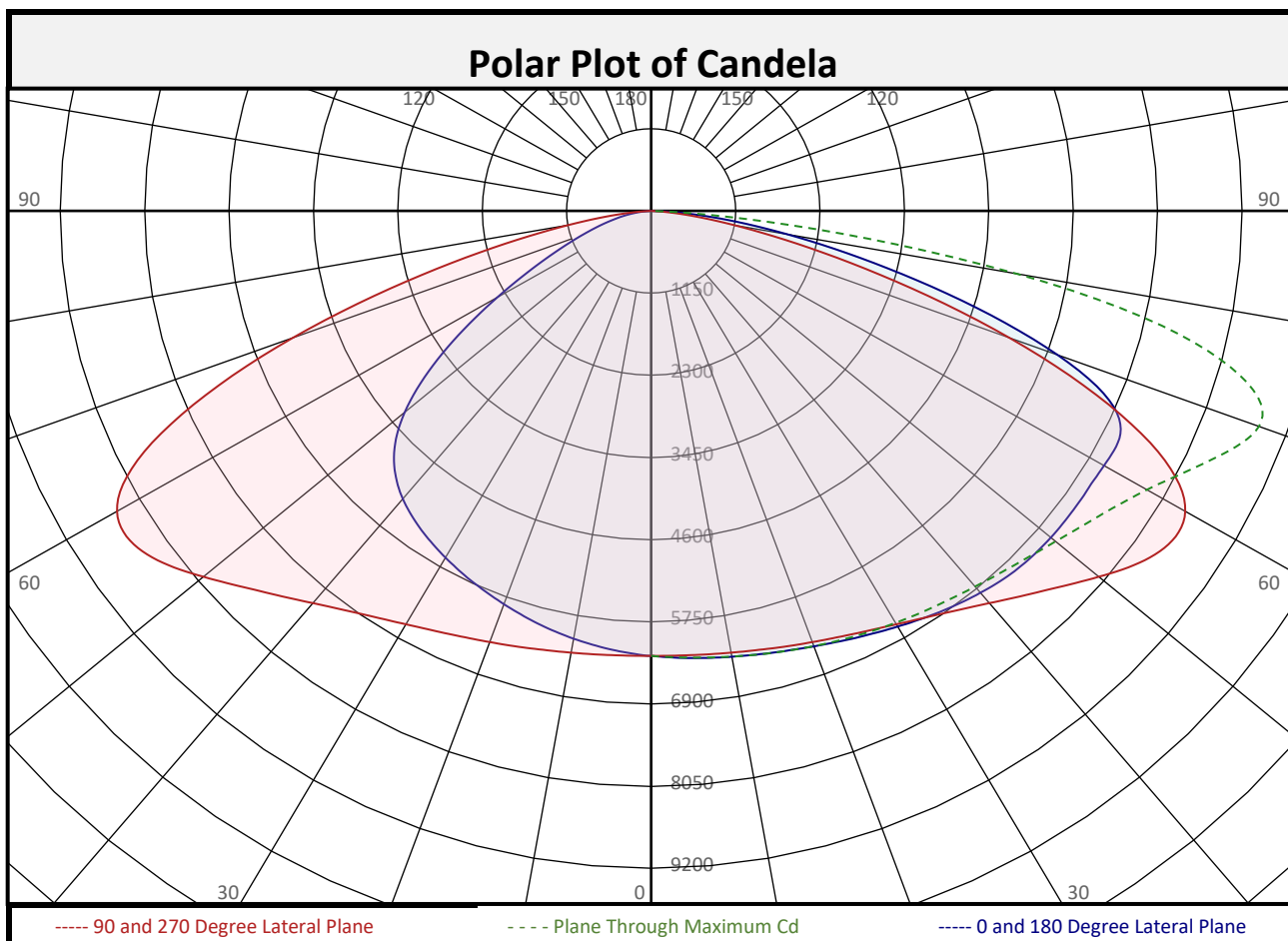
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 10/26/2023
Report date: 10/27/2023

Signed: _____

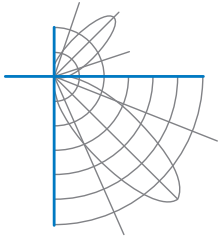


Report of Test
LLIA002251-039



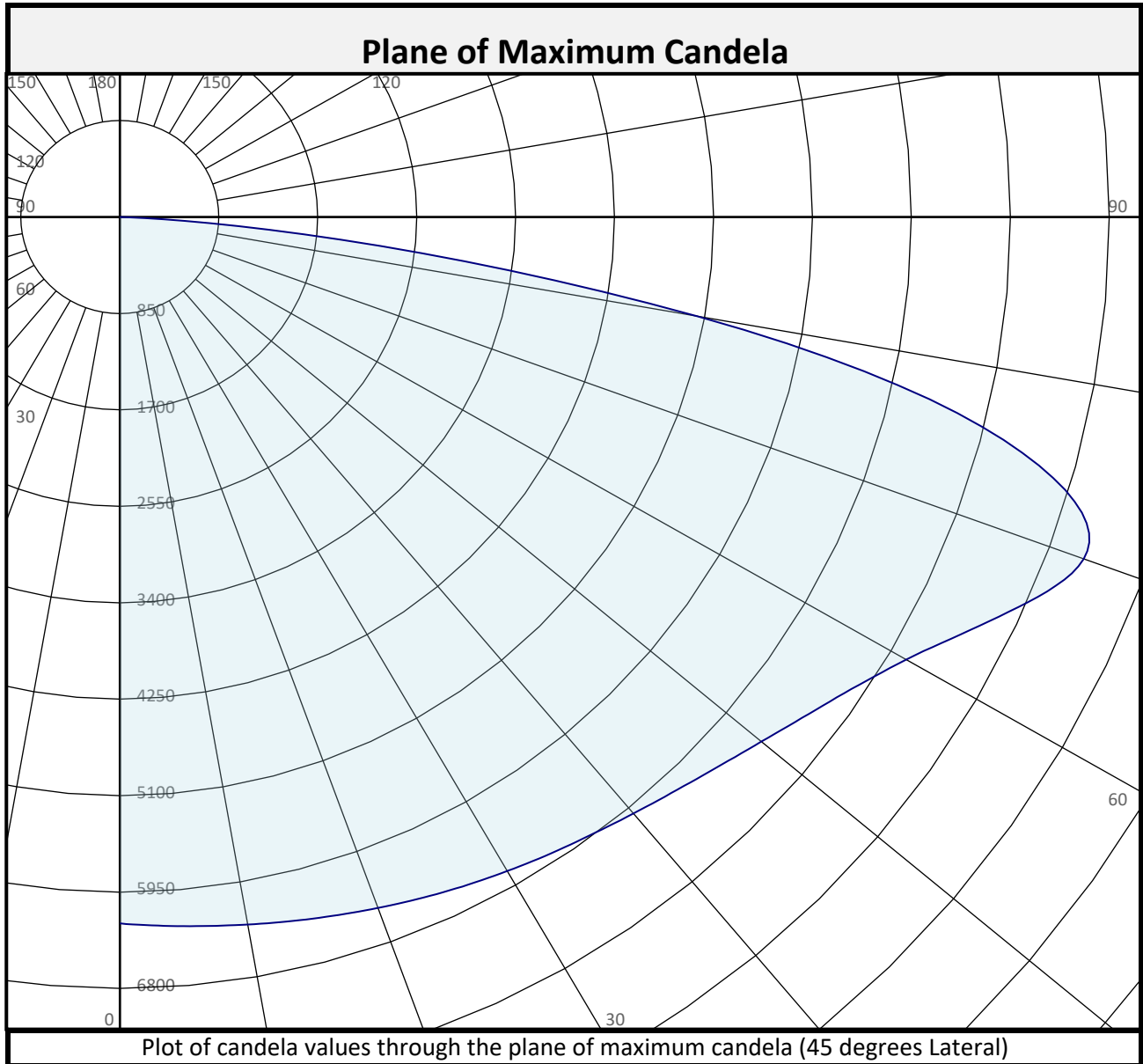
Zonal Flux Summary

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	595.3	2.0%	90-100	0.0	0.0%	0-20	2371	7.8%
10-20	1776	5.9%	100-110	0.0	0.0%	0-30	5305	17.5%
20-30	2934	9.7%	110-120	0.0	0.0%	0-40	9371	31.0%
30-40	4066	13.4%	120-130	0.0	0.0%	0-60	20484	67.7%
40-50	5156	17.0%	130-140	0.0	0.0%	0-80	29618	97.8%
50-60	5957	19.7%	140-150	0.0	0.0%	10-90	29682	98.0%
60-70	5710	18.9%	150-160	0.0	0.0%	20-50	12156	40.1%
70-80	3423	11.3%	160-170	0.0	0.0%	40-90	20906	69.0%
80-90	659.8	2.2%	170-180	0.0	0.0%	60-90	9793	32.3%
0-90	30278	100.0%	90-180	0.0	0.0%	0-180	30278	100.0%

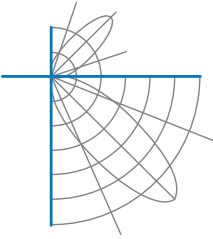


Report of Test

LLIA002251-039

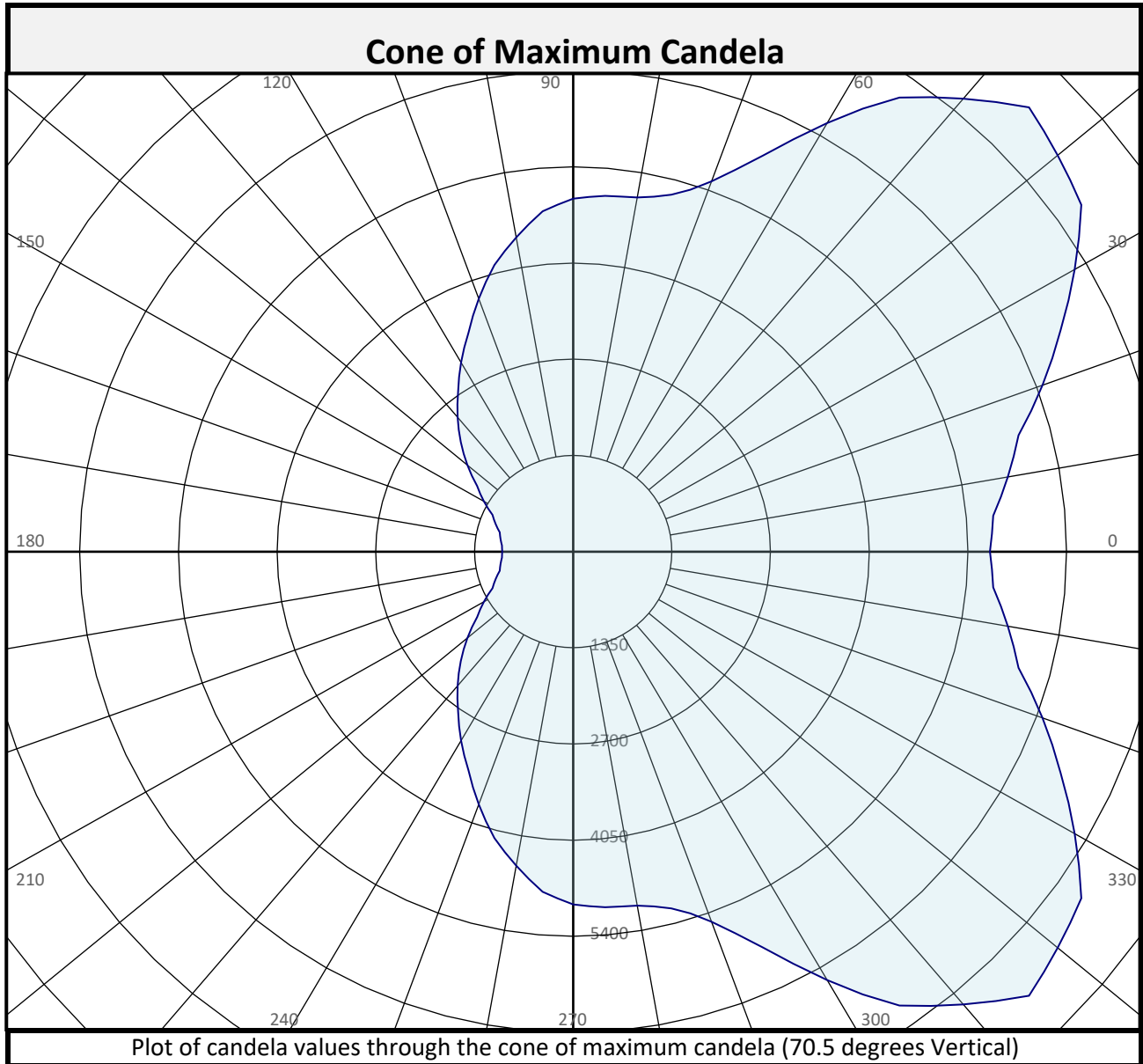


Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	18079.5	59.7%	0.0	0.0%	18079.5	59.7%
House Side	12198.1	40.3%	0.0	0.0%	12198.1	40.3%
Total	30277.6	100.0%	0.0	0.0%	30277.6	100.0%

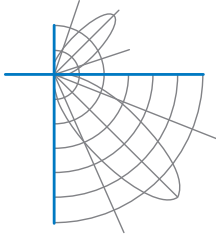


Report of Test

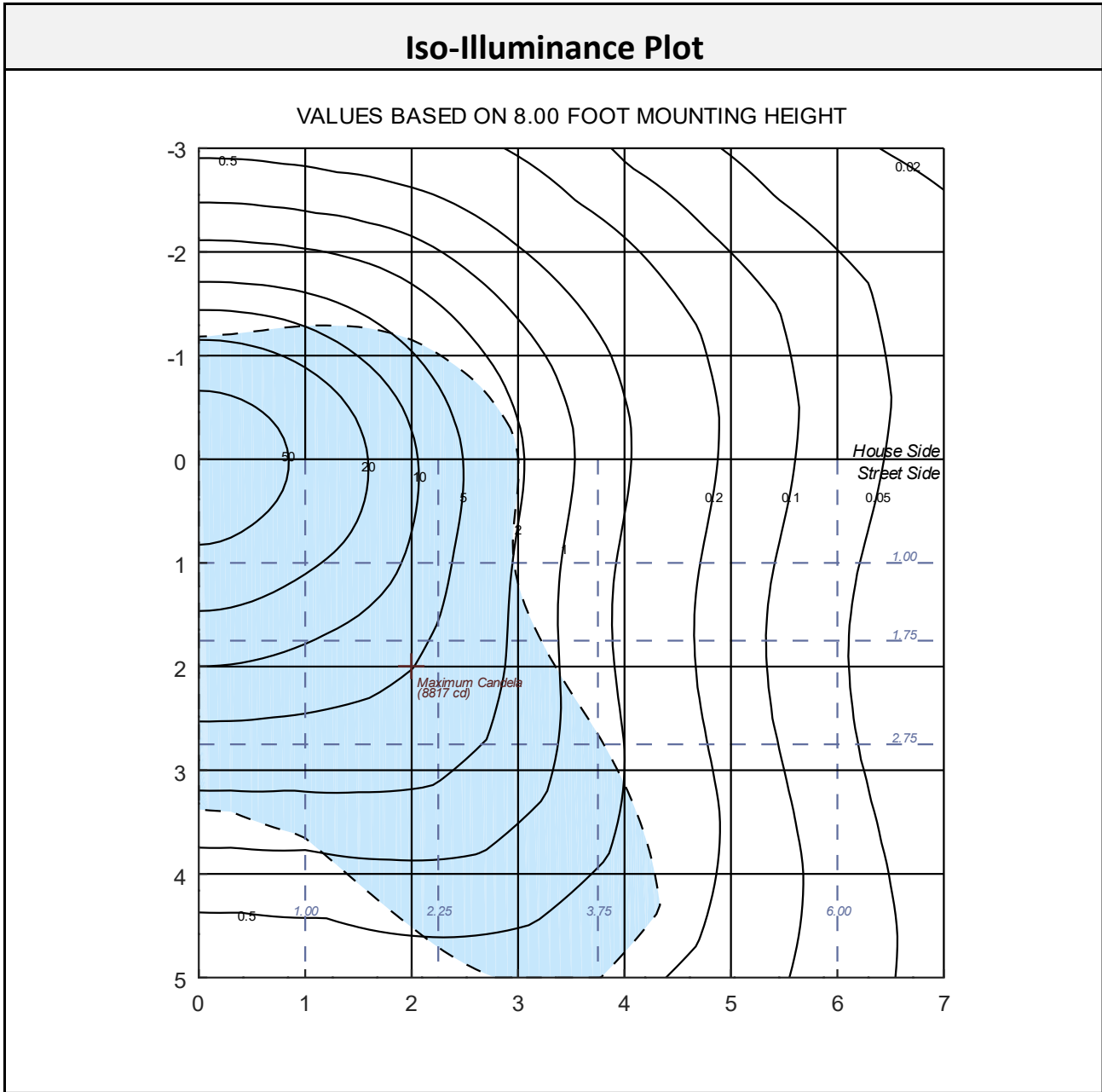
LLIA002251-039



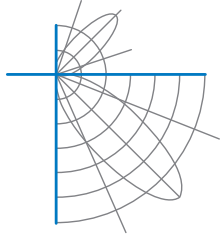
Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	18079.5	59.7%	0.0	0.0%	18079.5	59.7%
House Side	12198.1	40.3%	0.0	0.0%	12198.1	40.3%
Total	30277.6	100.0%	0.0	0.0%	30277.6	100.0%



Report of Test
LLIA002251-039



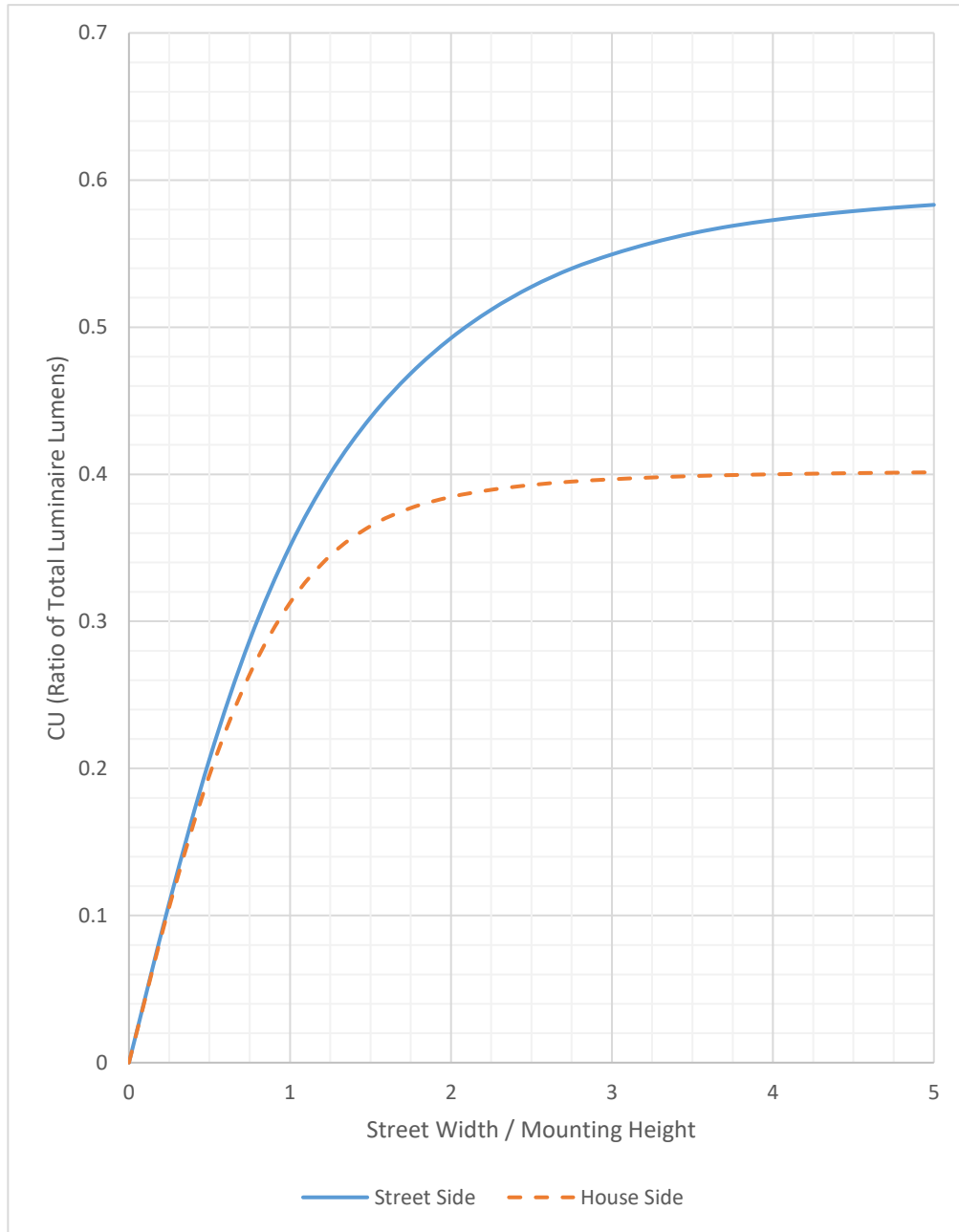
The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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

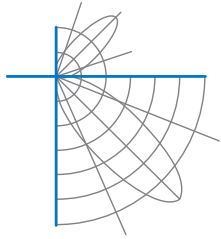


Report of Test

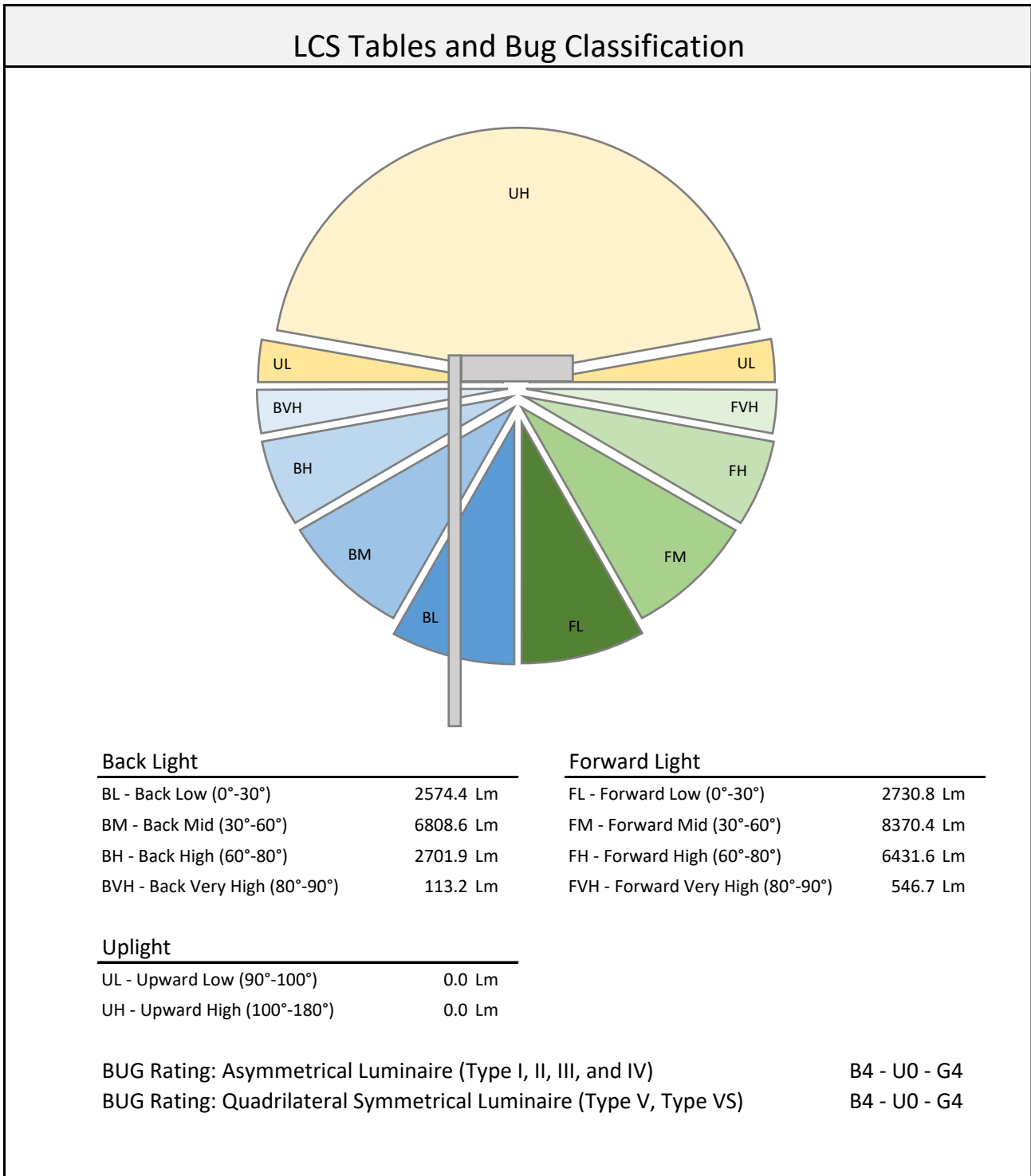
LLIA002251-039

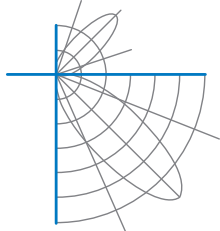
Coefficients of Utilization Plot





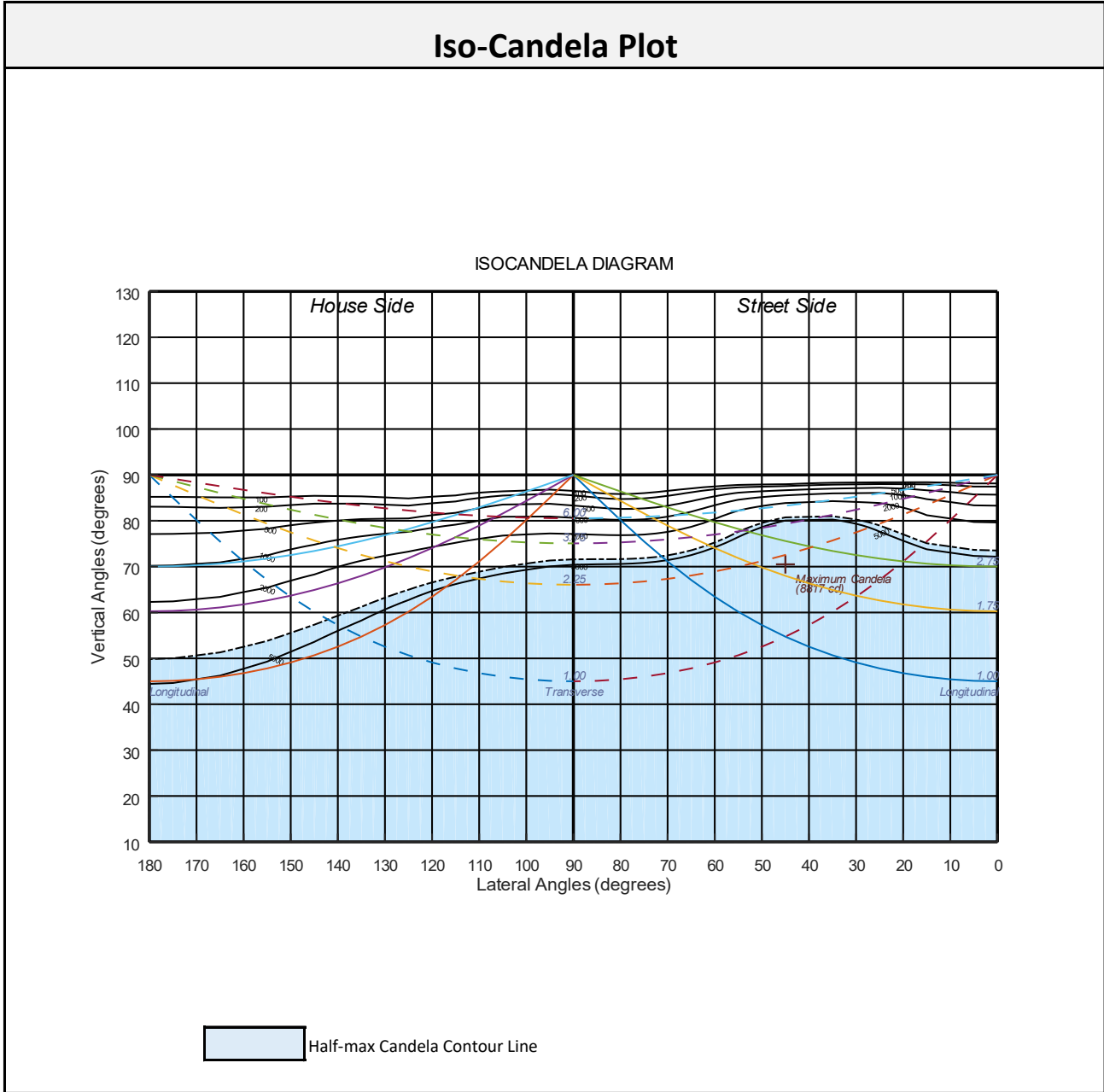
Report of Test
LLIA002251-039

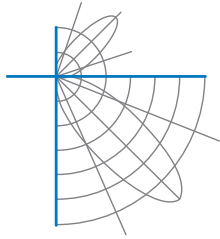




Report of Test LLIA002251-039

Iso-Candela Plot





Report of Test

LLIA002251-039

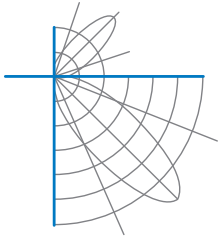
Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles														
	0	5	15	25	35	45	55	57.5	60	62.5	65	67.5	70	72.5	75
0	6224	6224	6224	6224	6224	6224	6224	6224	6224	6224	6224	6224	6224	6224	6224
2.5	6253	6254	6253	6252	6251	6248	6243	6241	6241	6238	6239	6238	6235	6234	6232
5	6280	6281	6280	6279	6277	6273	6266	6264	6263	6258	6260	6257	6254	6254	6249
7.5	6307	6308	6308	6306	6305	6301	6293	6290	6290	6285	6284	6283	6279	6277	6273
10	6334	6335	6337	6335	6335	6331	6324	6323	6320	6316	6314	6313	6308	6306	6301
12.5	6363	6365	6367	6367	6366	6365	6359	6357	6356	6350	6351	6349	6342	6339	6335
15	6399	6401	6402	6400	6403	6401	6394	6395	6393	6386	6388	6386	6381	6379	6374
17.5	6437	6441	6441	6437	6440	6439	6436	6437	6435	6426	6430	6429	6424	6421	6417
20	6484	6486	6483	6479	6478	6479	6480	6481	6480	6474	6477	6477	6473	6471	6465
22.5	6534	6537	6531	6523	6520	6523	6528	6529	6530	6526	6529	6530	6527	6523	6518
25	6593	6590	6581	6568	6562	6566	6577	6580	6583	6576	6586	6588	6585	6585	6578
27.5	6652	6650	6636	6614	6604	6610	6631	6637	6642	6641	6650	6653	6651	6650	6645
30	6716	6717	6694	6661	6644	6655	6690	6700	6705	6706	6722	6725	6726	6728	6725
32.5	6783	6782	6751	6708	6683	6703	6755	6766	6779	6782	6802	6809	6812	6817	6816
35	6852	6847	6809	6753	6723	6751	6824	6843	6861	6875	6894	6907	6912	6920	6922
37.5	6915	6908	6863	6797	6763	6803	6904	6930	6955	6970	7000	7019	7030	7040	7044
40	6975	6967	6916	6839	6802	6862	6995	7029	7066	7091	7123	7146	7166	7180	7189
42.5	7032	7023	6965	6880	6845	6930	7100	7144	7190	7221	7266	7295	7319	7338	7351
45	7072	7062	7003	6919	6894	7005	7224	7280	7334	7379	7427	7466	7492	7515	7534
47.5	7098	7089	7032	6955	6946	7091	7367	7436	7499	7552	7608	7653	7687	7714	7736
50	7110	7107	7056	6989	7005	7192	7526	7607	7682	7747	7814	7867	7906	7940	7965
52.5	7114	7109	7070	7023	7070	7312	7703	7801	7891	7968	8043	8102	8149	8184	8215
55	7114	7112	7084	7063	7148	7445	7903	8016	8119	8194	8286	8350	8402	8436	8459
57.5	7109	7114	7102	7115	7253	7606	8125	8250	8358	8441	8521	8576	8615	8638	8651
60	7127	7130	7137	7197	7388	7801	8363	8476	8572	8634	8692	8722	8736	8730	8717
62.5	7143	7149	7191	7318	7568	8050	8567	8650	8701	8710	8718	8693	8653	8599	8541
65	7054	7075	7212	7466	7817	8333	8667	8668	8627	8532	8437	8314	8186	8068	7959
67.5	6673	6716	7023	7556	8135	8623	8520	8355	8144	7892	7641	7396	7182	7004	6865
70	5898	5962	6465	7424	8439	8812	7949	7576	7182	6785	6407	6087	5822	5620	5481
72.5	4858	4928	5553	6938	8545	8667	6988	6453	5929	5446	5006	4657	4384	4184	4056
75	3746	3809	4452	6097	8150	8026	5769	5134	4553	4051	3624	3306	3070	2904	2796
77.5	2736	2781	3363	5055	7031	6846	4458	3809	3257	2817	2467	2214	2028	1898	1817
80	1884	1916	2408	3931	5225	5041	3112	2585	2147	1805	1541	1357	1223	1130	1074
82.5	1191	1211	1603	2684	3226	2986	1862	1549	1275	1048	870	737	640	575	534
85	630	642	926	1470	1557	1290	846	703	576	462	369	302	250	212	187
87.5	193	193	298	370	313	214	149	122	97	76	58	46	37	30	25
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)

Australasia & S.E. Asia



Report of Test

LLIA002251-039

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	6224	6224	6224	6224	6224	6224	6224	6224	6224	6224	6224	6224	6224	6224	6224	
2.5	6233	6230	6231	6232	6229	6223	6218	6214	6210	6204	6203	6198	6199	6195	6196	
5	6248	6246	6244	6244	6237	6229	6219	6208	6197	6187	6176	6169	6165	6161	6162	
7.5	6269	6266	6264	6262	6254	6243	6226	6208	6189	6168	6151	6137	6127	6121	6121	
10	6297	6292	6290	6286	6275	6263	6239	6210	6182	6153	6123	6102	6087	6077	6077	
12.5	6331	6324	6321	6317	6302	6287	6256	6218	6177	6138	6097	6065	6042	6029	6027	
15	6368	6361	6357	6351	6336	6319	6277	6231	6175	6122	6068	6026	5994	5976	5976	
17.5	6411	6406	6400	6391	6376	6356	6305	6245	6178	6108	6038	5984	5943	5921	5916	
20	6459	6451	6447	6438	6419	6397	6338	6265	6182	6094	6009	5938	5890	5861	5857	
22.5	6513	6505	6499	6490	6470	6446	6377	6291	6188	6080	5978	5893	5834	5801	5795	
25	6572	6565	6557	6549	6529	6499	6424	6323	6198	6069	5948	5847	5777	5739	5734	
27.5	6641	6635	6626	6621	6597	6566	6478	6360	6215	6061	5920	5800	5720	5676	5671	
30	6721	6714	6708	6703	6678	6646	6547	6408	6237	6056	5891	5753	5659	5608	5603	
32.5	6813	6809	6804	6794	6773	6737	6626	6467	6264	6055	5861	5705	5596	5539	5531	
35	6922	6917	6913	6906	6883	6847	6722	6534	6303	6056	5834	5654	5529	5462	5455	
37.5	7047	7045	7041	7035	7013	6973	6836	6620	6347	6061	5803	5595	5452	5377	5366	
40	7194	7194	7192	7185	7163	7122	6972	6716	6398	6065	5766	5527	5361	5275	5262	
42.5	7362	7363	7365	7361	7337	7290	7118	6825	6451	6063	5715	5439	5247	5145	5129	
45	7545	7551	7553	7548	7524	7477	7277	6937	6500	6048	5644	5322	5095	4972	4956	
47.5	7751	7759	7761	7760	7736	7676	7439	7039	6533	6004	5534	5158	4886	4737	4715	
50	7980	7992	7996	7994	7962	7891	7597	7117	6520	5912	5370	4929	4598	4412	4384	
52.5	8233	8242	8243	8236	8194	8098	7732	7148	6440	5747	5132	4612	4214	3992	3961	
55	8473	8478	8469	8452	8380	8250	7799	7101	6273	5489	4806	4203	3740	3499	3467	
57.5	8652	8639	8615	8582	8476	8311	7752	6933	6000	5129	4378	3703	3209	2970	2937	
60	8691	8655	8610	8556	8403	8192	7540	6613	5594	4670	3860	3146	2667	2452	2423	
62.5	8474	8404	8328	8247	8052	7804	7094	6113	5053	4117	3281	2585	2162	1987	1965	
65	7855	7762	7676	7586	7366	7097	6367	5408	4399	3507	2698	2075	1732	1600	1583	
67.5	6763	6679	6608	6546	6374	6127	5406	4517	3657	2879	2155	1638	1377	1282	1270	
70	5391	5333	5299	5282	5202	5026	4373	3571	2896	2289	1689	1281	1092	1025	1017	
72.5	3984	3950	3945	3955	3961	3878	3390	2734	2195	1749	1301	993	857	813	808	
75	2744	2729	2739	2767	2815	2817	2528	2048	1602	1275	974	756	664	634	630	
77.5	1777	1767	1778	1804	1868	1909	1794	1429	1017	862	699	553	494	480	478	
80	1048	1046	1063	1090	1152	1212	1190	815	572	540	467	387	351	348	348	
82.5	515	513	534	566	634	700	688	387	273	298	281	233	216	224	225	
85	173	170	180	205	262	309	262	133	93	117	124	104	104	110	111	
87.5	22	20	19	21	34	43	28	18	14	16	14	12	8	4	3	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

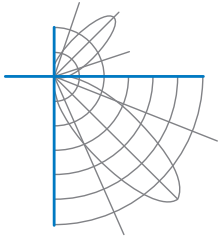
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.

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

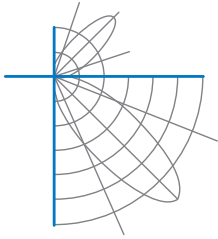


Report of Test

LLIA002251-039

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	

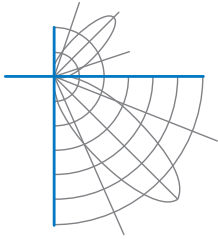


Report of Test

LLIA002251-039

Luminous Intensity (Candela) Table

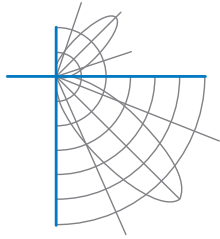
	Lateral (C-Plane) Angles															
	77.5	80	82.5	85	90	95	105	115	125	135	145	155	165	175	180	
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	92.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	97.5	0	0	0	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
LLIA002251-039

Additional Pictures of Test Subject





Report of Test

LLIA002251-039

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.