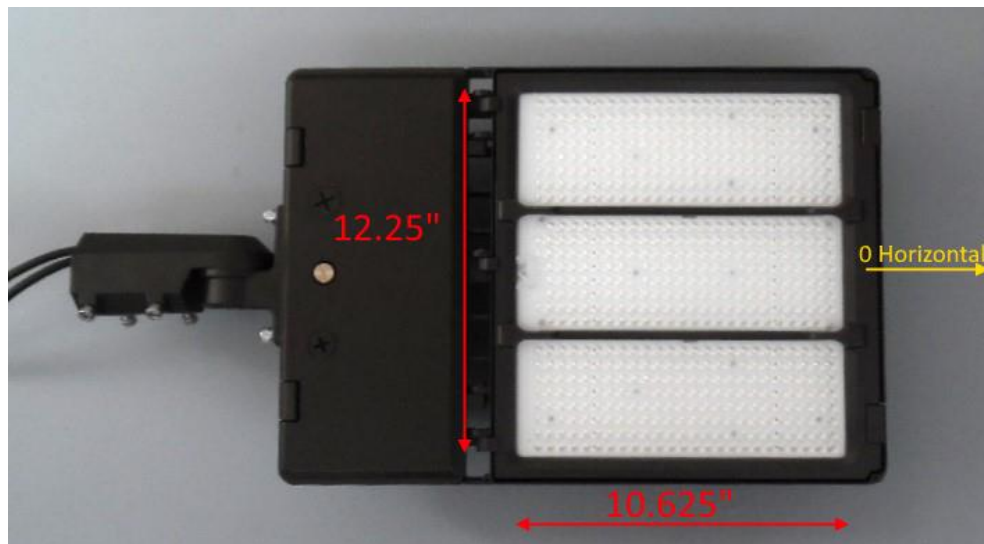


## Report of Test

LLIA002251-043

Roadway/Area Light Distribution Photometry Test Report

Catalog Number: ARL-300PCS-SWO - T4 Optics - 250W - 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



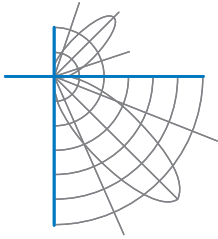
Prepared For:  
Topaz Lighting Corp  
925 Waverly Avenue  
Holtsville, NY 11742, USA

Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	36697.4 Lumens
Input Current	2.030 A	Total Efficacy	151.6 Lm/W
Input Power	242.0 W		
Frequency	60.00 Hz	Roadway Throw	Short
Power Factor	0.993	Roadway Type	Type IV
Current THD	9.5 %		

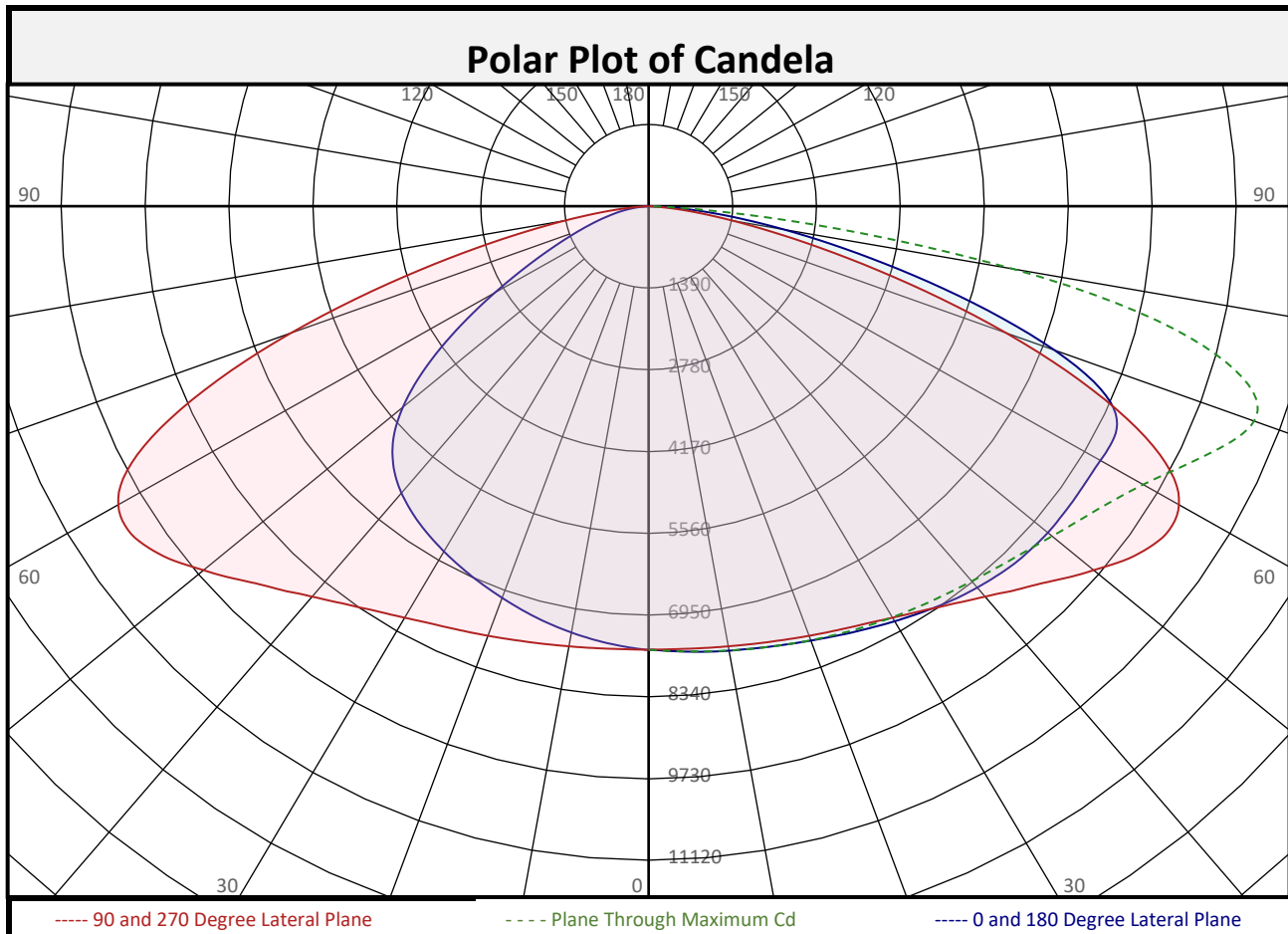
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

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

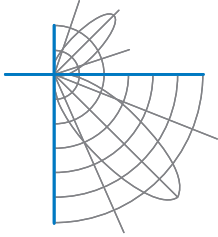
Signed: \_\_\_\_\_



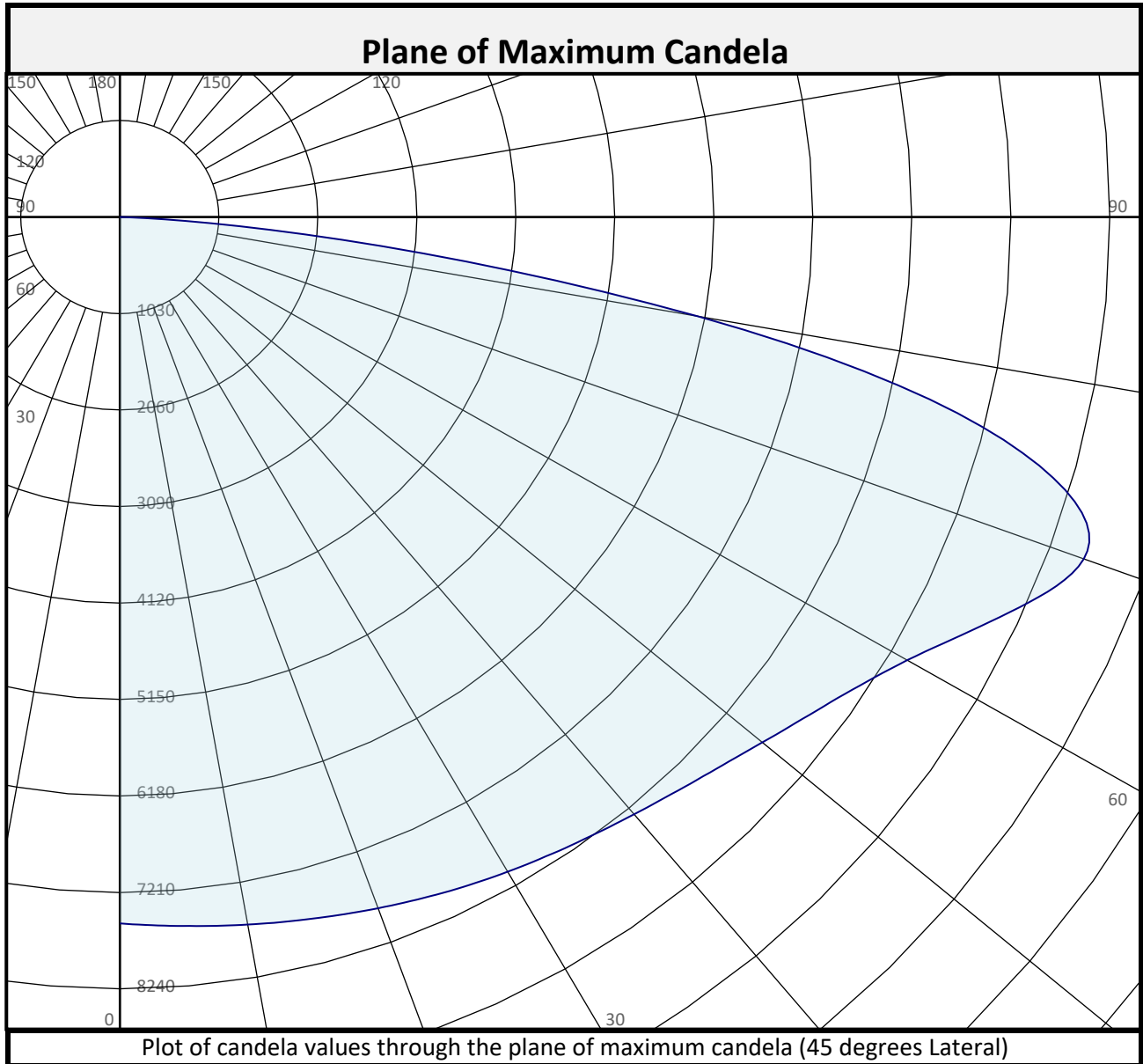
Report of Test  
LLIA002251-043



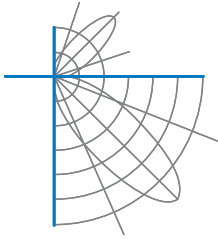
Zonal Flux Summary								
Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	721.0	2.0%	90-100	0.0	0.0%	0-20	2872	7.8%
10-20	2151	5.9%	100-110	0.0	0.0%	0-30	6426	17.5%
20-30	3553	9.7%	110-120	0.0	0.0%	0-40	11351	30.9%
30-40	4925	13.4%	120-130	0.0	0.0%	0-60	24818	67.6%
40-50	6248	17.0%	130-140	0.0	0.0%	0-80	35894	97.8%
50-60	7219	19.7%	140-150	0.0	0.0%	10-90	35976	98.0%
60-70	6922	18.9%	150-160	0.0	0.0%	20-50	14726	40.1%
70-80	4155	11.3%	160-170	0.0	0.0%	40-90	25346	69.1%
80-90	803.2	2.2%	170-180	0.0	0.0%	60-90	11880	32.4%
0-90	36697	100.0%	90-180	0.0	0.0%	0-180	36697	100.0%



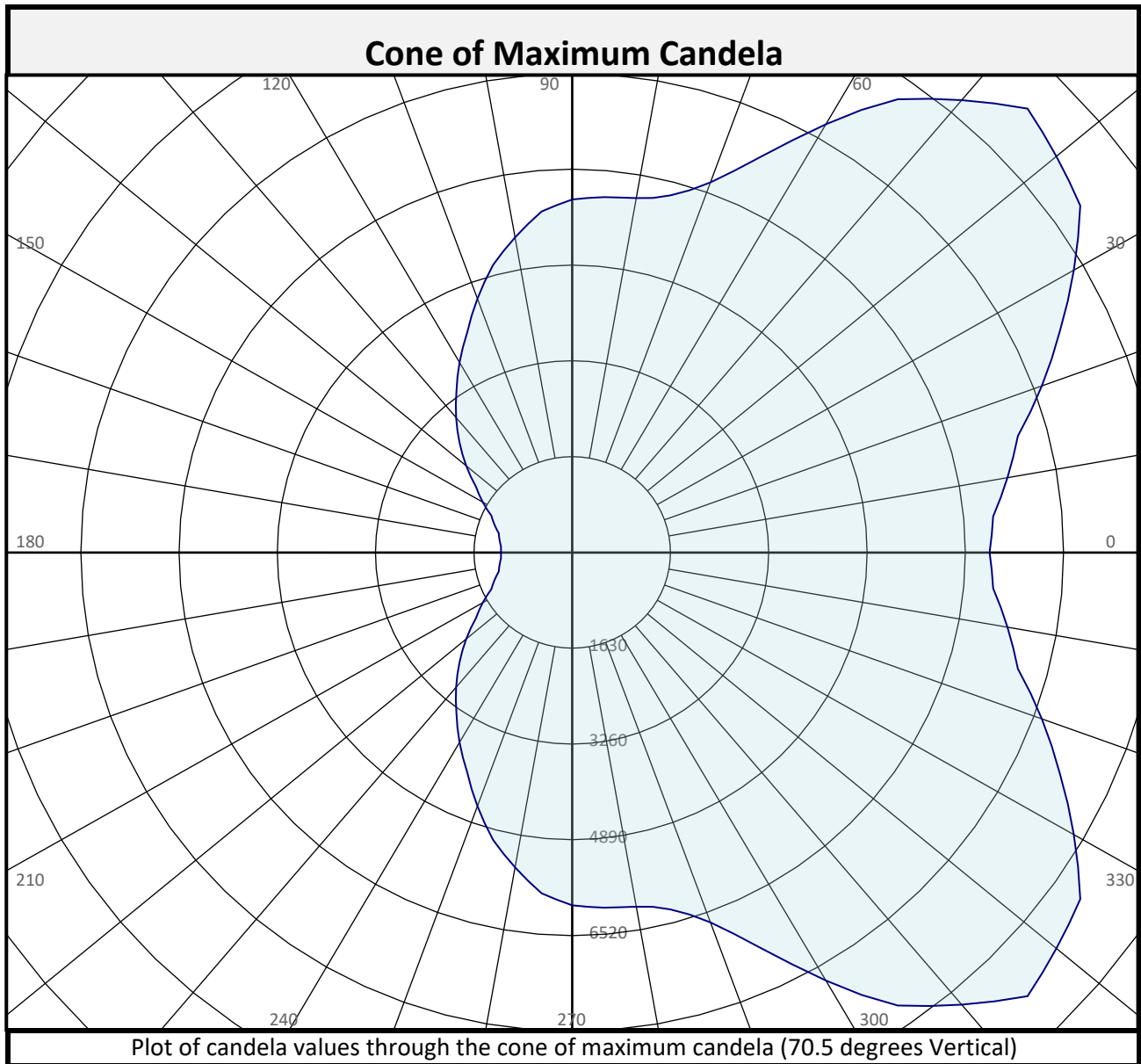
Report of Test  
LLIA002251-043



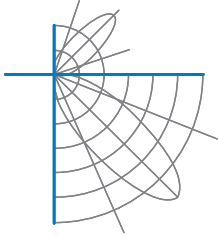
Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	21918.4	59.7%	0.0	0.0%	21918.4	59.7%
House Side	14779.0	40.3%	0.0	0.0%	14779.0	40.3%
<b>Total</b>	<b>36697.4</b>	<b>100.0%</b>	<b>0.0</b>	<b>0.0%</b>	<b>36697.4</b>	<b>100.0%</b>



Report of Test  
LLIA002251-043

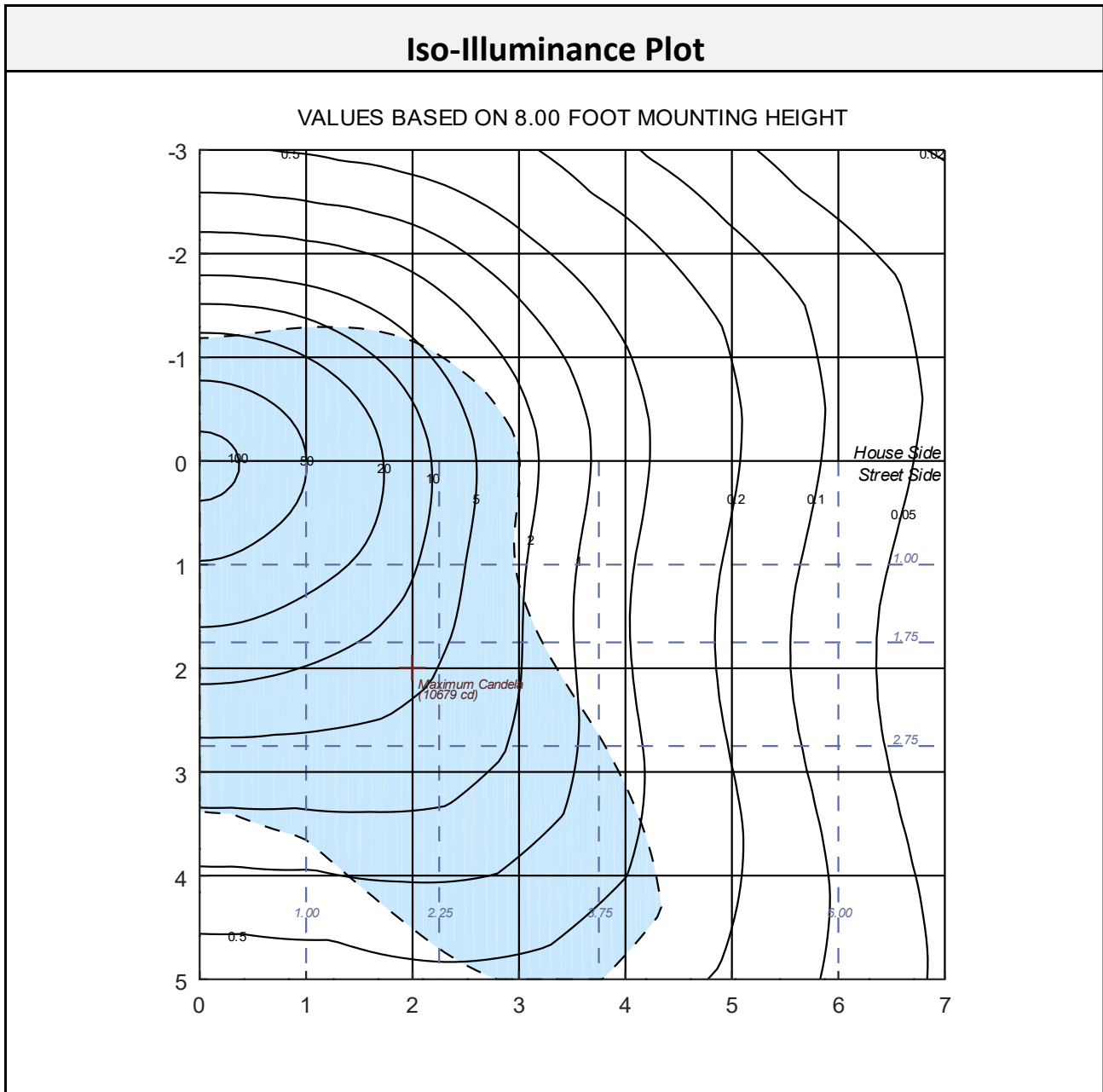


Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	21918.4	59.7%	0.0	0.0%	21918.4	59.7%
House Side	14779.0	40.3%	0.0	0.0%	14779.0	40.3%
<b>Total</b>	<b>36697.4</b>	<b>100.0%</b>	<b>0.0</b>	<b>0.0%</b>	<b>36697.4</b>	<b>100.0%</b>

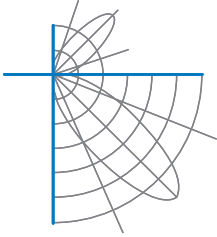


## Report of Test

LLIA002251-043

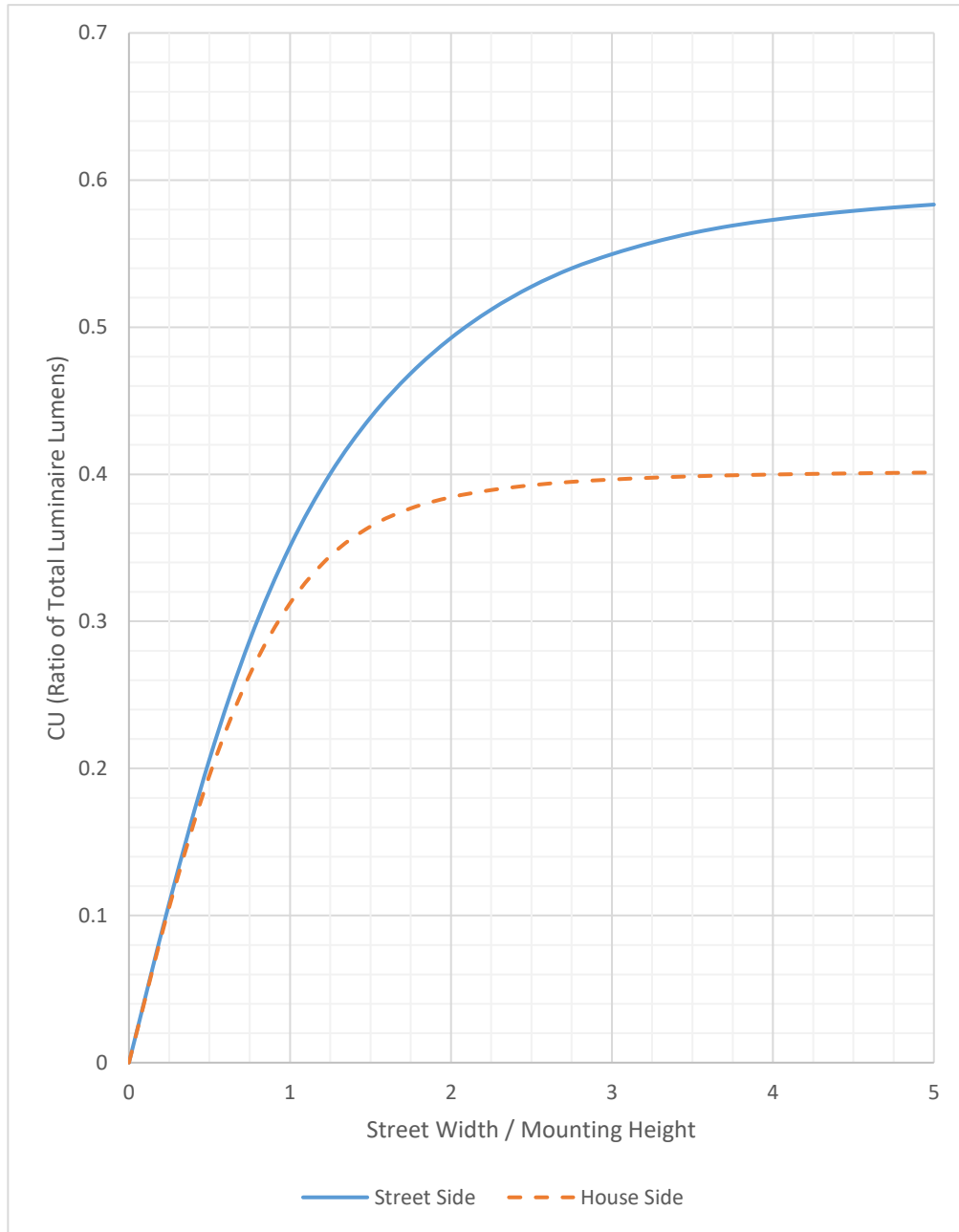


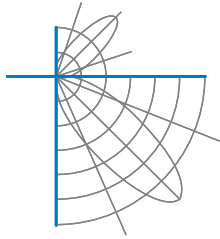
The isofootcandle values shown in the plot above are based on a mounting height of  $h = 8.0$  feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the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



## Report of Test LLIA002251-043

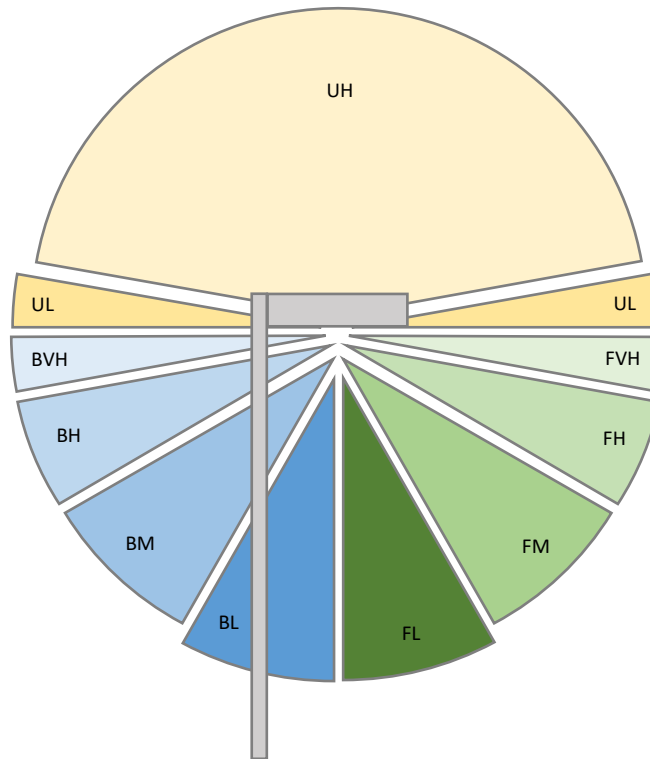
### Coefficients of Utilization Plot





Report of Test  
LLIA002251-043

LCS Tables and Bug Classification



**Back Light**

BL - Back Low (0°-30°)	3116.4 Lm
BM - Back Mid (30°-60°)	8243.6 Lm
BH - Back High (60°-80°)	3280.5 Lm
BVH - Back Very High (80°-90°)	138.4 Lm

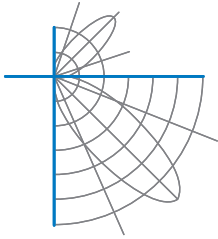
**Forward Light**

FL - Forward Low (0°-30°)	3309.1 Lm
FM - Forward Mid (30°-60°)	10148.6 Lm
FH - Forward High (60°-80°)	7795.9 Lm
FVH - Forward Very High (80°-90°)	664.7 Lm

**Uplight**

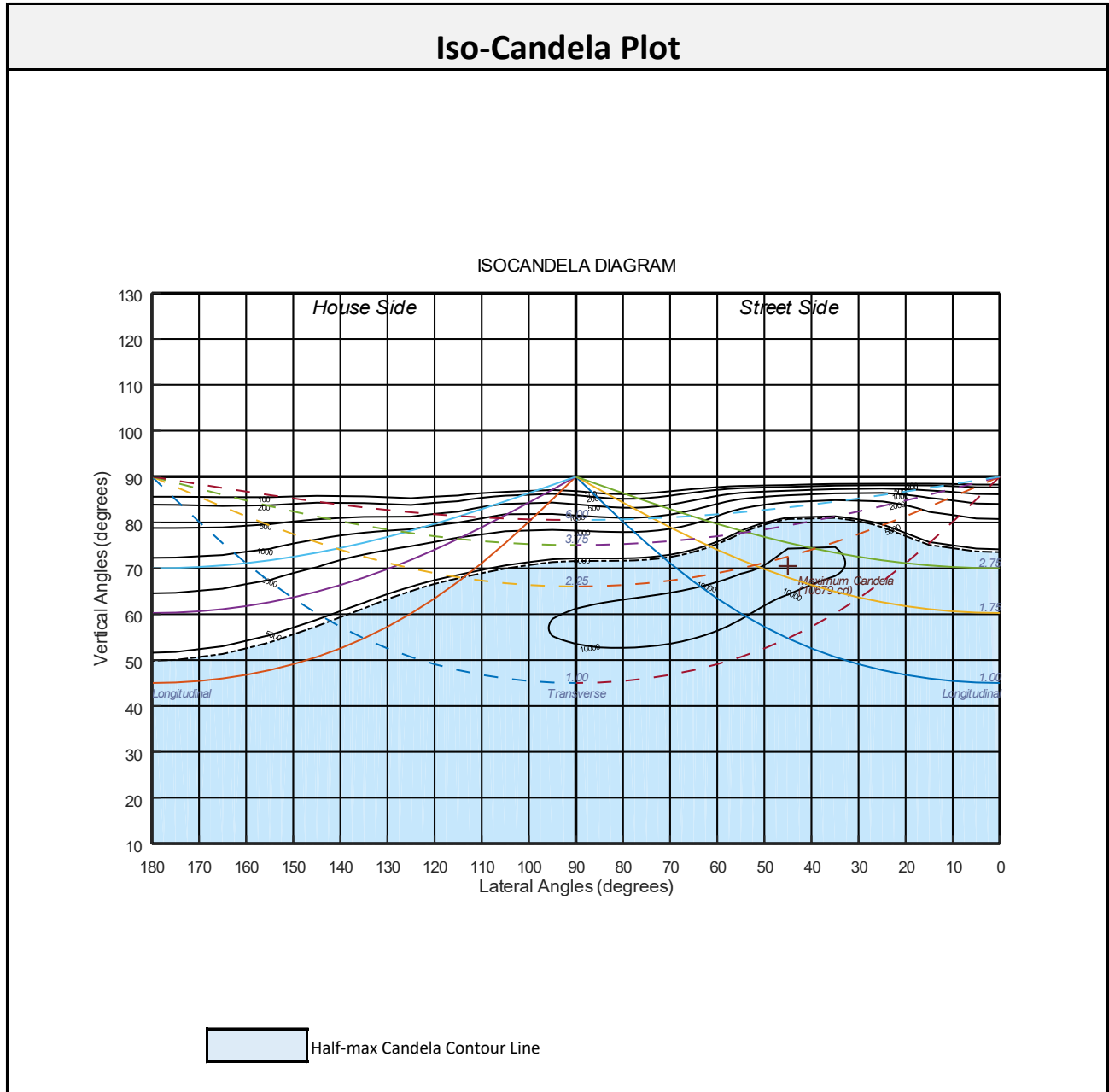
UL - Upward Low (90°-100°)	0.0 Lm
UH - Upward High (100°-180°)	0.0 Lm

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

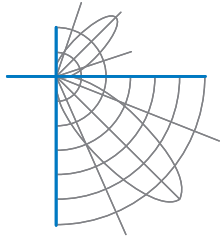


Report of Test  
LLIA002251-043

**Iso-Candela Plot**







## Report of Test

LLIA002251-043

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	7539	7539	7539	7539	7539	7539	7539	7539	7539	7539	7539	7539	7539	7539	7539
2.5	7567	7572	7572	7574	7571	7565	7559	7560	7557	7556	7556	7554	7555	7553	7551
5	7600	7606	7606	7606	7602	7595	7587	7587	7585	7583	7581	7579	7577	7575	7573
7.5	7637	7639	7640	7641	7636	7631	7622	7620	7619	7616	7611	7610	7607	7605	7601
10	7672	7673	7675	7678	7674	7668	7660	7659	7655	7653	7648	7646	7644	7639	7636
12.5	7707	7711	7713	7717	7714	7709	7701	7701	7698	7695	7692	7688	7685	7680	7676
15	7751	7755	7756	7760	7758	7752	7747	7748	7744	7742	7737	7735	7731	7727	7723
17.5	7801	7805	7806	7805	7802	7800	7798	7800	7796	7793	7790	7789	7785	7782	7774
20	7857	7861	7861	7850	7852	7851	7851	7853	7853	7851	7845	7846	7843	7838	7832
22.5	7920	7925	7919	7909	7902	7902	7909	7913	7915	7914	7909	7909	7906	7901	7898
25	7992	7992	7981	7965	7954	7958	7971	7975	7981	7980	7978	7981	7978	7975	7972
27.5	8065	8069	8048	8021	8003	8012	8037	8043	8051	8053	8055	8059	8059	8056	8053
30	8148	8147	8119	8081	8055	8068	8109	8119	8130	8139	8142	8149	8151	8150	8149
32.5	8230	8228	8190	8139	8105	8126	8187	8204	8219	8234	8241	8251	8256	8258	8257
35	8313	8309	8260	8195	8151	8186	8272	8296	8318	8338	8354	8368	8378	8383	8386
37.5	8396	8386	8329	8249	8203	8251	8369	8402	8432	8462	8483	8503	8521	8531	8537
40	8465	8459	8393	8301	8252	8322	8480	8525	8564	8602	8632	8661	8684	8699	8712
42.5	8526	8522	8451	8353	8305	8401	8609	8666	8716	8763	8806	8840	8870	8891	8909
45	8582	8573	8500	8400	8365	8494	8759	8830	8892	8951	9002	9043	9079	9107	9126
47.5	8611	8605	8538	8445	8430	8599	8930	9015	9091	9163	9219	9272	9315	9346	9373
50	8634	8629	8563	8489	8500	8724	9122	9224	9314	9398	9467	9528	9579	9618	9647
52.5	8634	8632	8586	8528	8579	8866	9338	9456	9564	9660	9742	9815	9873	9917	9946
55	8633	8630	8600	8577	8674	9027	9575	9713	9839	9947	10036	10111	10169	10213	10242
57.5	8631	8633	8620	8643	8800	9222	9845	9997	10127	10236	10317	10381	10425	10451	10465
60	8643	8648	8660	8739	8966	9459	10126	10267	10381	10466	10519	10552	10566	10559	10540
62.5	8661	8671	8726	8883	9182	9762	10372	10469	10534	10555	10545	10512	10462	10396	10321
65	8557	8586	8752	9060	9481	10103	10488	10486	10435	10332	10197	10043	9890	9749	9615
67.5	8100	8152	8525	9169	9867	10450	10301	10102	9847	9548	9243	8948	8687	8477	8311
70	7162	7239	7849	9008	10232	10672	9615	9172	8697	8217	7772	7371	7050	6815	6644
72.5	5896	5984	6737	8420	10359	10496	8463	7825	7191	6599	6085	5655	5320	5088	4929
75	4544	4625	5397	7396	9880	9721	6995	6237	5531	4916	4414	4025	3734	3535	3406
77.5	3312	3374	4069	6121	8527	8292	5412	4639	3966	3429	3015	2700	2473	2321	2224
80	2276	2320	2909	4750	6330	6115	3783	3151	2615	2202	1889	1661	1496	1386	1319
82.5	1435	1465	1931	3234	3914	3627	2271	1898	1560	1284	1073	910	790	712	662
85	756	776	1111	1767	1902	1576	1038	870	710	570	462	376	311	267	236
87.5	228	233	354	447	393	271	195	162	127	99	78	60	47	39	33
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)**

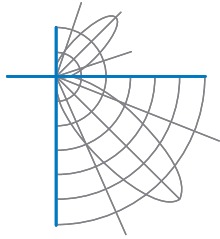
LightLab International Allentown, LLC  
905 Harrison Street, Suite 135  
Allentown, PA 18103 USA

Ph: +1 484-273-0705  
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LightLab International  
50 Redcliffe Gardens Drive  
Clontarf - Queensland, 4019, Australia

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www.lightlabint.com



## Report of Test

LLIA002251-043

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	7539	7539	7539	7539	7539	7539	7539	7539	7539	7539	7539	7539	7539	7539	7539
2.5	7550	7548	7547	7547	7538	7541	7534	7526	7521	7514	7513	7508	7506	7503	7505
5	7569	7565	7564	7559	7549	7549	7536	7519	7504	7491	7483	7471	7464	7459	7462
7.5	7596	7592	7587	7582	7570	7565	7544	7516	7493	7469	7450	7431	7418	7411	7413
10	7630	7625	7619	7612	7595	7588	7557	7521	7485	7450	7417	7389	7368	7356	7357
12.5	7669	7664	7656	7649	7628	7618	7578	7532	7479	7429	7382	7343	7315	7297	7296
15	7715	7708	7700	7692	7669	7653	7604	7543	7478	7411	7348	7295	7257	7232	7231
17.5	7767	7761	7750	7742	7715	7700	7637	7561	7479	7393	7310	7242	7192	7164	7160
20	7826	7817	7806	7798	7769	7748	7676	7585	7484	7374	7274	7187	7127	7092	7087
22.5	7892	7882	7868	7858	7830	7806	7724	7615	7490	7357	7235	7133	7059	7021	7012
25	7964	7955	7938	7931	7897	7872	7779	7652	7503	7344	7199	7076	6990	6944	6938
27.5	8046	8039	8025	8016	7975	7952	7847	7700	7521	7334	7163	7021	6920	6867	6858
30	8143	8135	8126	8115	8076	8047	7927	7757	7548	7328	7127	6960	6846	6785	6779
32.5	8254	8248	8238	8226	8190	8157	8026	7828	7583	7324	7094	6901	6769	6701	6691
35	8386	8380	8372	8364	8329	8290	8142	7911	7625	7328	7059	6840	6686	6608	6599
37.5	8540	8537	8528	8520	8485	8444	8280	8013	7679	7332	7022	6769	6596	6505	6492
40	8717	8717	8712	8702	8664	8626	8442	8131	7742	7338	6977	6687	6487	6382	6369
42.5	8917	8921	8916	8911	8876	8826	8619	8261	7808	7337	6919	6583	6350	6227	6211
45	9142	9146	9145	9140	9094	9054	8810	8396	7869	7318	6832	6444	6170	6020	6000
47.5	9389	9398	9402	9392	9356	9291	9008	8521	7907	7266	6701	6248	5922	5739	5715
50	9670	9678	9679	9675	9622	9551	9196	8615	7893	7158	6505	5972	5574	5347	5316
52.5	9972	9980	9981	9970	9901	9799	9359	8653	7799	6962	6221	5593	5109	4841	4808
55	10258	10257	10243	10219	10116	9986	9439	8594	7599	6652	5828	5100	4539	4245	4211
57.5	10466	10450	10420	10377	10229	10048	9381	8393	7269	6216	5314	4495	3896	3603	3569
60	10505	10463	10405	10335	10142	9908	9127	8010	6784	5664	4685	3823	3239	2976	2947
62.5	10239	10159	10068	9969	9739	9443	8594	7410	6136	4997	3985	3141	2624	2412	2389
65	9493	9386	9279	9166	8918	8599	7723	6567	5347	4258	3277	2521	2101	1940	1923
67.5	8179	8085	8001	7914	7724	7434	6564	5488	4453	3498	2619	1990	1670	1556	1544
70	6527	6466	6426	6391	6308	6099	5314	4346	3528	2782	2051	1555	1323	1243	1235
72.5	4834	4797	4789	4797	4811	4714	4121	3329	2677	2124	1580	1206	1040	986	981
75	3340	3323	3337	3362	3424	3429	3074	2494	1951	1545	1183	917	805	769	766
77.5	2170	2160	2175	2200	2282	2330	2182	1742	1242	1045	847	671	599	582	581
80	1284	1286	1306	1334	1411	1483	1450	994	702	656	565	470	425	422	423
82.5	637	638	662	695	780	859	838	475	335	361	340	283	262	272	274
85	220	219	230	257	328	385	322	164	115	142	151	127	127	135	136
87.5	28	26	26	29	49	61	37	24	19	20	18	16	11	5	4
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)**

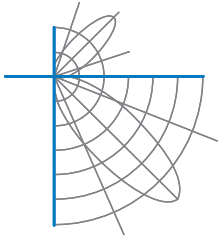
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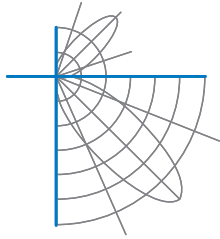


## Report of Test

LLIA002251-043

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	

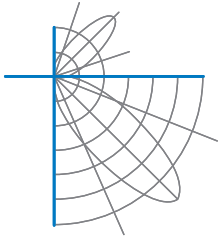


## Report of Test

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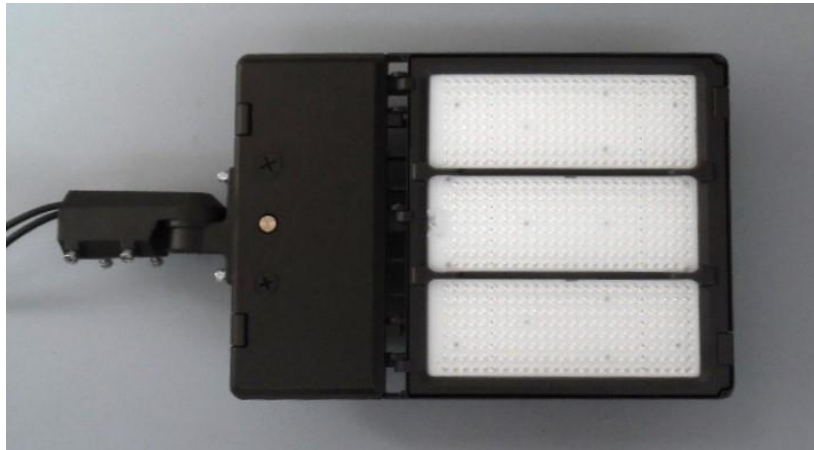
Luminous Intensity (Candela) Table

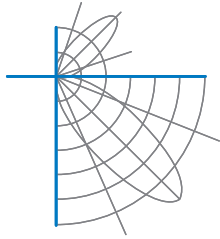
	Lateral (C-Plane) Angles															
	77.5	80	82.5	85	90	95	105	115	125	135	145	155	165	175	180	
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	92.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	97.5	0	0	0	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  
LLIA002251-043

**Additional Pictures of Test Subject**





## Report of Test

### LLIA002251-043

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.

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#### *North America (issuing laboratory)*

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#### *Australasia & S.E. Asia*