

Report of Test

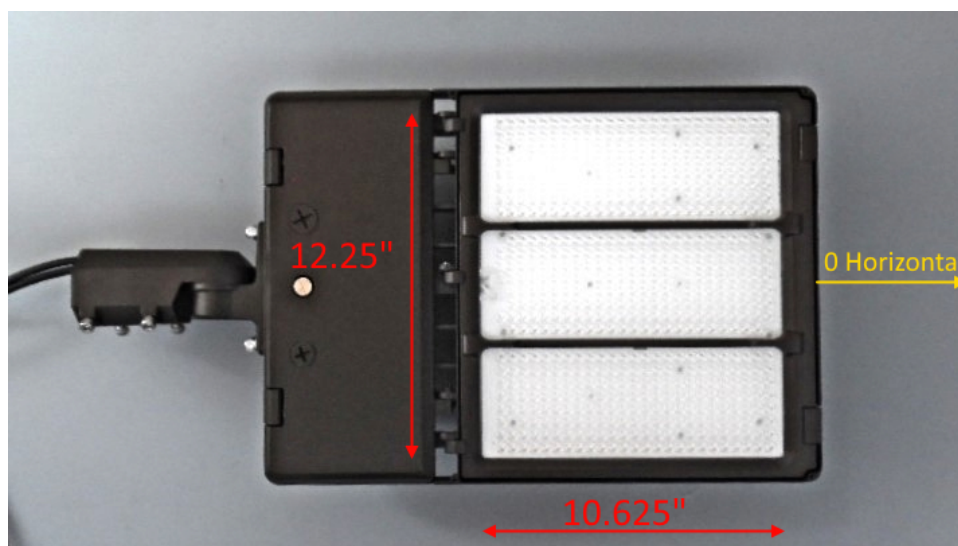
LLIA002251-041

Roadway/Area Light Distribution Photometry Test Report

Catalog Number: ARL-300PCS-SWO - T2 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	36943.1 Lumens
Input Current	2.031 A	Total Efficacy	152.7 lm/W
Input Power	242.0 W		
Frequency	60.00 Hz	Roadway Throw	Short
Power Factor	0.993	Roadway Type	Type II
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: _____

North America (issuing laboratory)

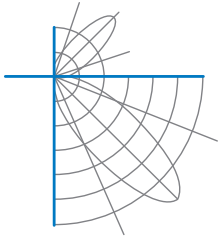
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Allentown, PA 18103 USA

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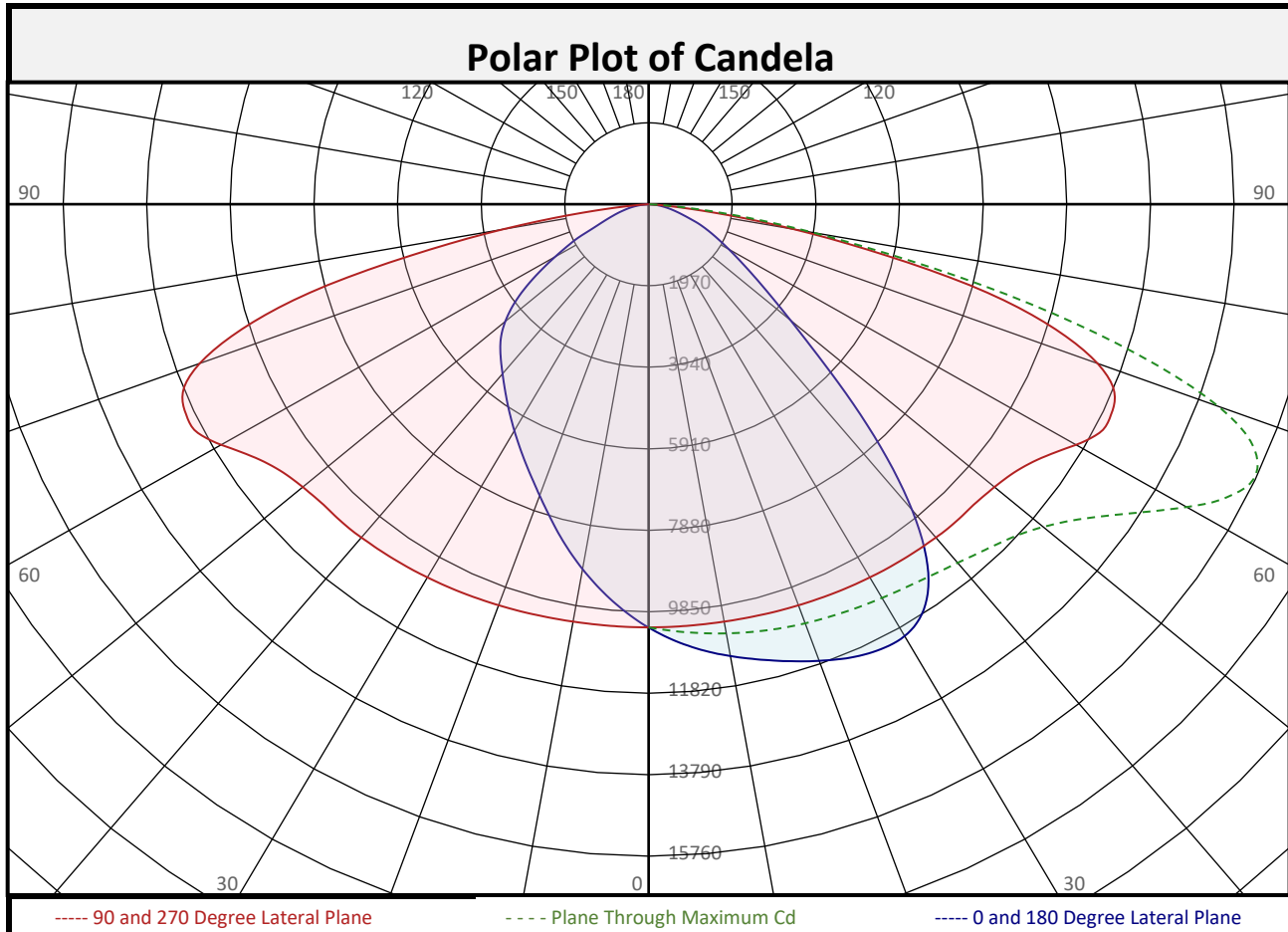
Australasia & S.E. Asia

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50 Redcliffe Gardens Drive
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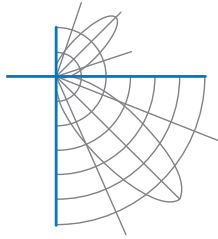
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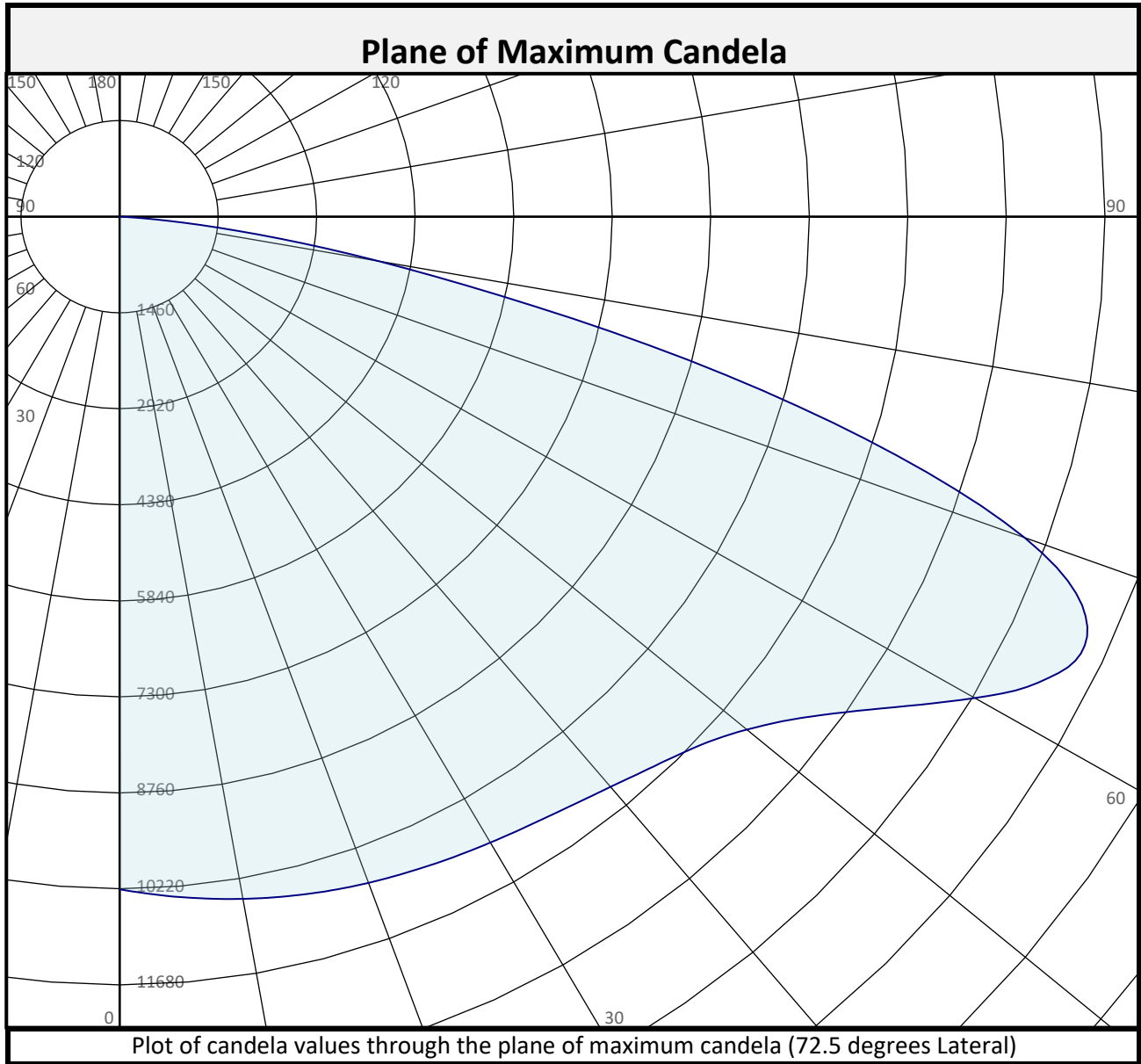


Zonal Flux Summary										
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	971.8	2.6%		90-100	0.0	0.0%		0-20	3814	10.3%
10-20	2842	7.7%		100-110	0.0	0.0%		0-30	8377	22.7%
20-30	4563	12.4%		110-120	0.0	0.0%		0-40	14398	39.0%
30-40	6021	16.3%		120-130	0.0	0.0%		0-60	27595	74.7%
40-50	6687	18.1%		130-140	0.0	0.0%		0-80	36522	98.9%
50-60	6510	17.6%		140-150	0.0	0.0%		10-90	35971	97.4%
60-70	5778	15.6%		150-160	0.0	0.0%		20-50	17271	46.7%
70-80	3149	8.5%		160-170	0.0	0.0%		40-90	22546	61.0%
80-90	421.5	1.1%		170-180	0.0	0.0%		60-90	9348	25.3%
0-90	36943	100.0%		90-180	0.0	0.0%		0-180	36943	100.0%

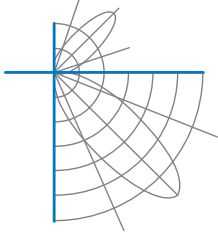


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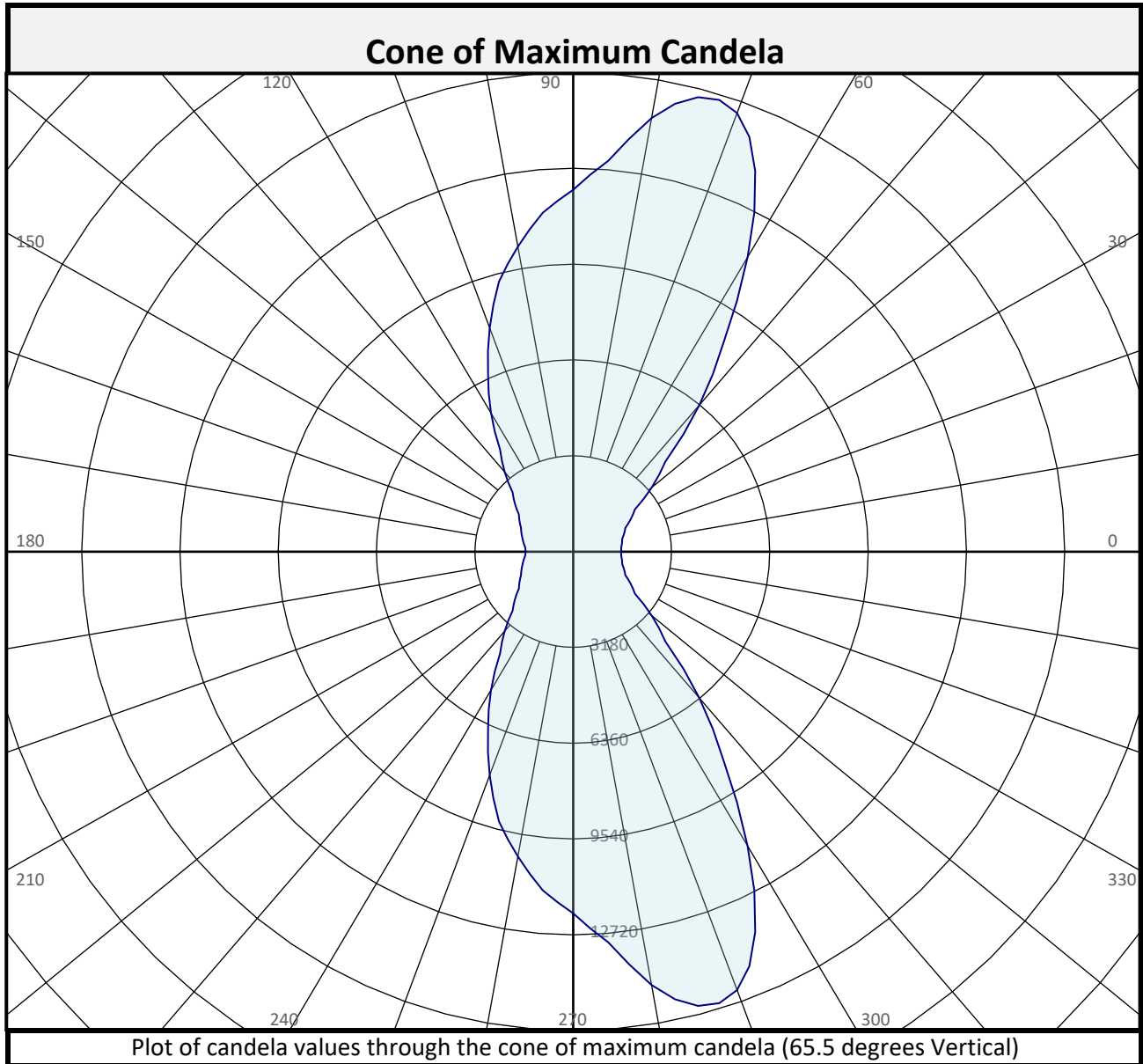


Street and House Side Flux Summary						
	Downward		Upward		Total	
	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
Street Side	21863.9	59.2%	0.0	0.0%	21863.9	59.2%
House Side	15079.3	40.8%	0.0	0.0%	15079.3	40.8%
Total	36943.1	100.0%	0.0	0.0%	36943.1	100.0%

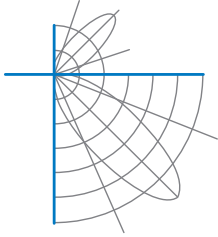


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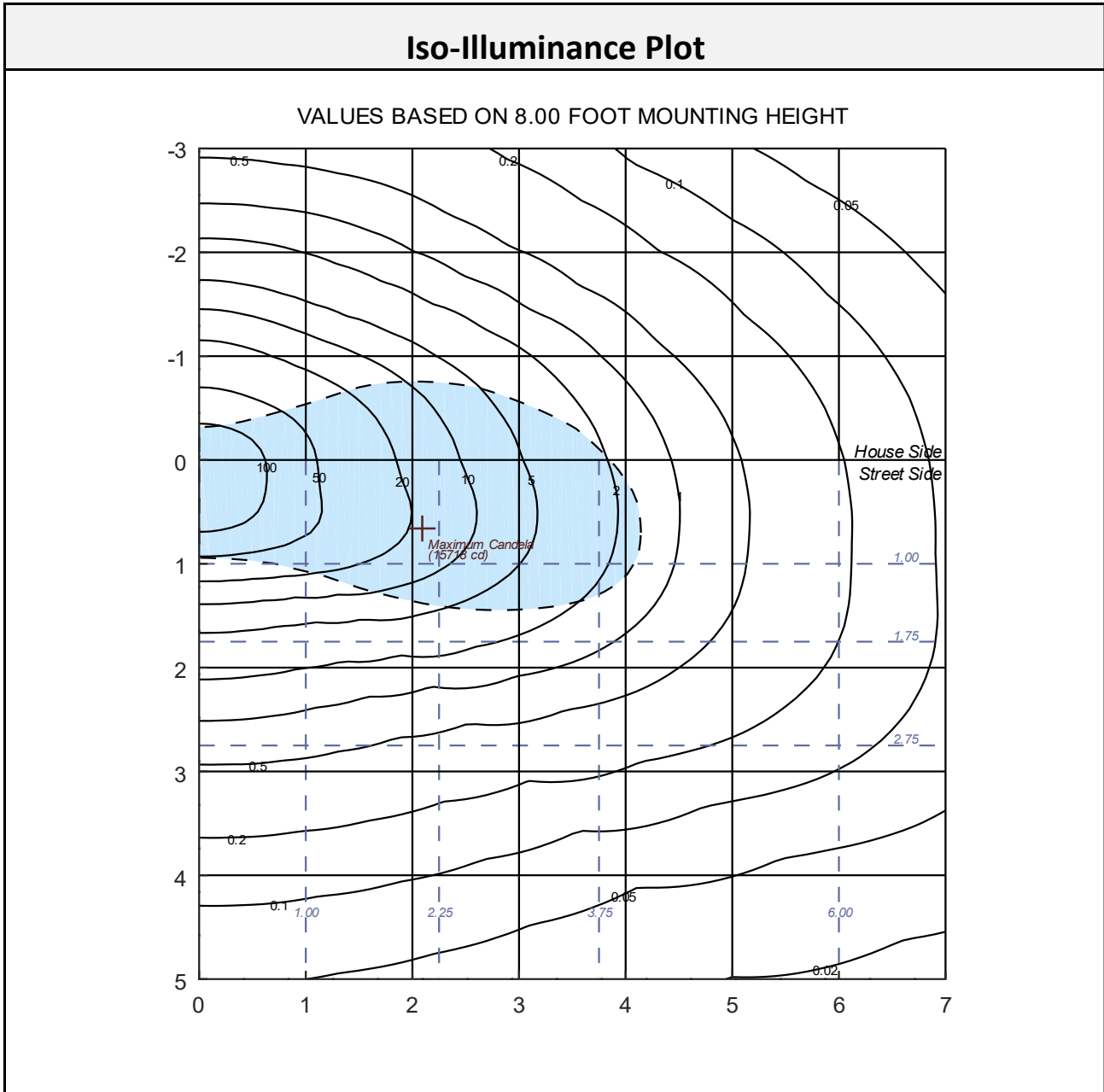
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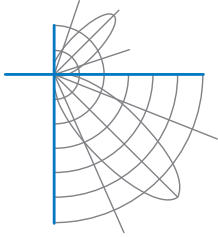
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	Lumens	% of Total	Lumens	% of Total	Lumens	% of Total
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House Side	15079.3	40.8%	0.0	0.0%	15079.3	40.8%
Total	36943.1	100.0%	0.0	0.0%	36943.1	100.0%



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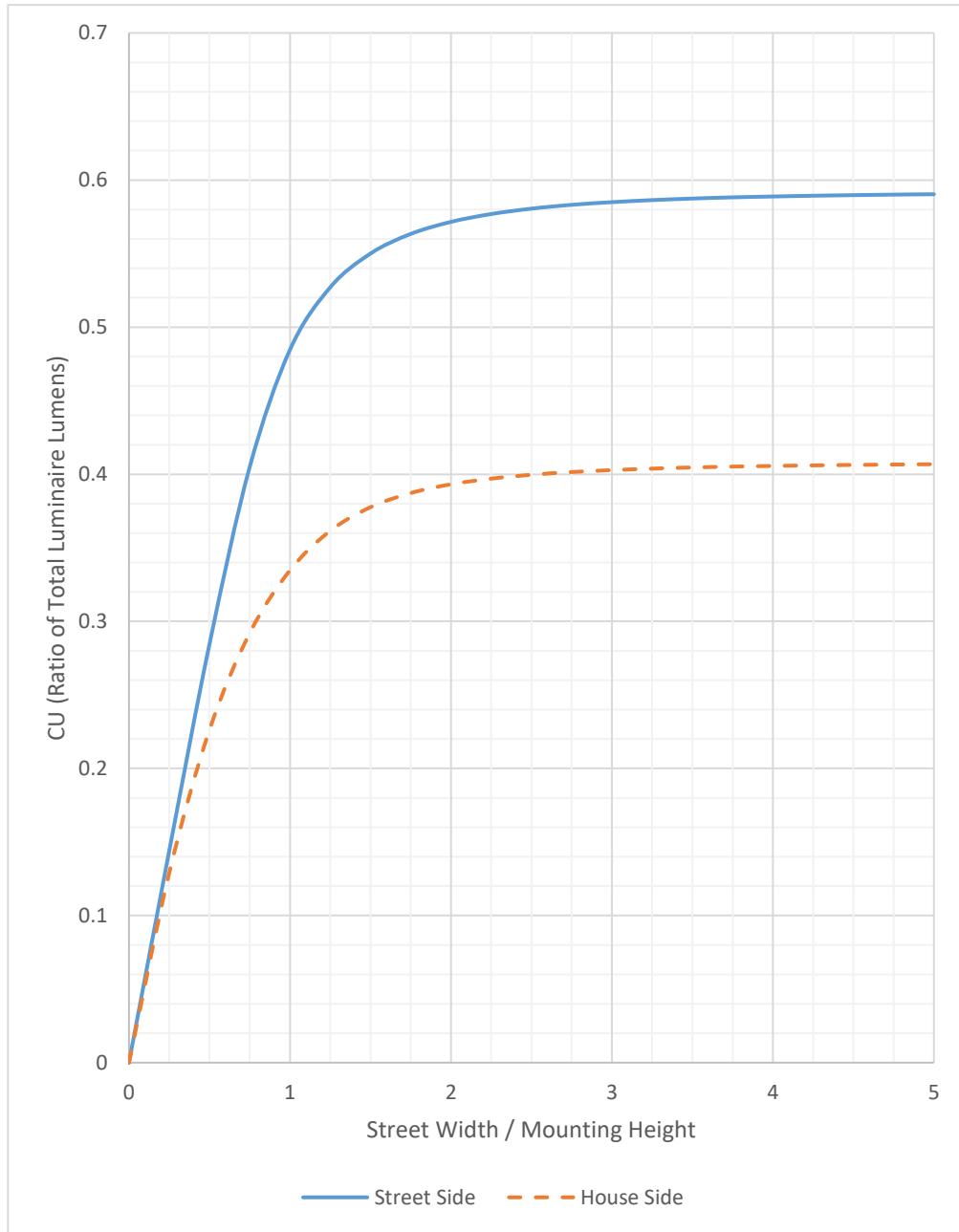
The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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

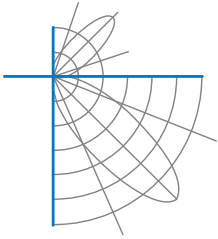


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Coefficients of Utilization Plot

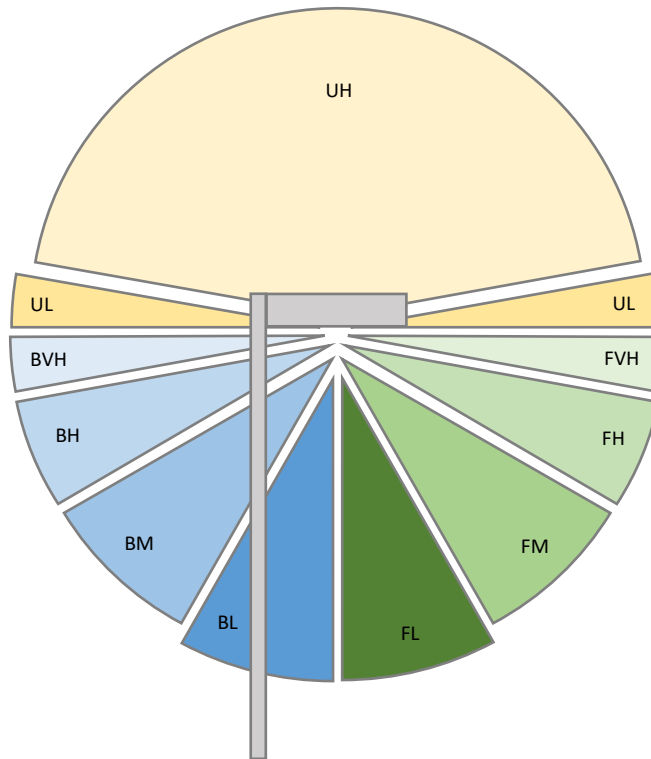




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LCS Tables and Bug Classification



Back Light

BL - Back Low (0°-30°)	3649.7 Lm
BM - Back Mid (30°-60°)	7792.4 Lm
BH - Back High (60°-80°)	3480.2 Lm
BVH - Back Very High (80°-90°)	157.0 Lm

Forward Light

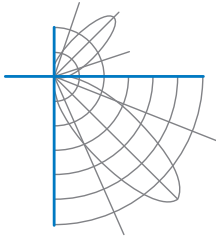
FL - Forward Low (0°-30°)	4727.2 Lm
FM - Forward Mid (30°-60°)	11425.6 Lm
FH - Forward High (60°-80°)	5446.6 Lm
FVH - Forward Very High (80°-90°)	264.5 Lm

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

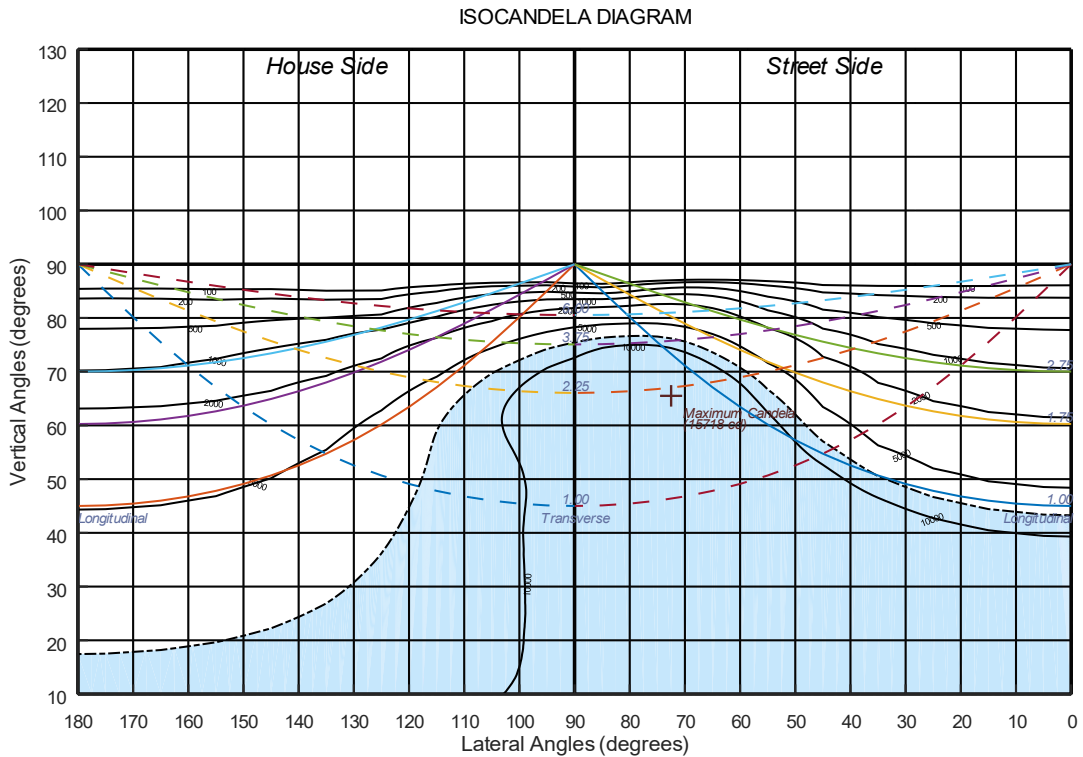
BUG Rating: Quadrilateral Symmetrical Luminaire (Type V, Type VS) B4 - U0 - G3



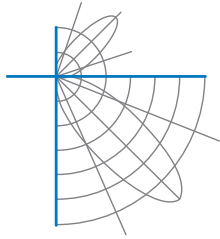
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Iso-Candela Plot



Half-max Candela Contour Line



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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	10226	10226	10226	10226	10226	10226	10226	10226	10226	10226	10226	10226	10226	10226	10226	
2.5	10481	10485	10478	10468	10446	10414	10377	10368	10359	10346	10336	10324	10316	10306	10293	
5	10705	10709	10698	10674	10635	10581	10518	10499	10482	10463	10441	10422	10404	10384	10361	
7.5	10906	10908	10893	10859	10805	10734	10646	10619	10597	10572	10542	10514	10488	10459	10429	
10	11082	11084	11065	11024	10956	10871	10764	10732	10705	10669	10636	10601	10568	10532	10496	
12.5	11247	11250	11226	11179	11099	10996	10869	10834	10801	10763	10723	10682	10642	10599	10557	
15	11413	11414	11385	11326	11236	11115	10968	10929	10888	10846	10800	10755	10710	10663	10616	
17.5	11577	11576	11545	11480	11372	11236	11064	11018	10973	10924	10874	10823	10773	10723	10670	
20	11739	11733	11704	11632	11516	11356	11159	11109	11051	10997	10943	10889	10835	10779	10720	
22.5	11888	11881	11858	11787	11666	11486	11259	11197	11138	11075	11012	10951	10893	10830	10769	
25	12005	12002	11987	11938	11826	11631	11371	11300	11228	11156	11086	11018	10948	10881	10812	
27.5	12070	12072	12079	12068	11988	11791	11495	11414	11332	11247	11164	11083	11008	10933	10859	
30	12051	12058	12106	12160	12141	11967	11642	11547	11446	11351	11254	11158	11074	10986	10906	
32.5	11876	11892	12010	12183	12269	12151	11808	11704	11586	11473	11359	11245	11146	11048	10956	
35	11468	11498	11717	12068	12340	12342	12006	11888	11757	11622	11487	11356	11231	11117	11014	
37.5	10747	10789	11137	11737	12299	12510	12238	12110	11961	11806	11646	11488	11343	11207	11082	
40	9674	9729	10215	11096	12055	12625	12494	12367	12209	12033	11844	11656	11482	11316	11167	
42.5	8310	8383	8973	10114	11533	12617	12758	12650	12492	12305	12091	11867	11654	11453	11274	
45	6816	6892	7515	8823	10680	12410	13001	12943	12807	12618	12384	12123	11863	11616	11391	
47.5	5416	5481	6041	7368	9517	11929	13167	13197	13117	12954	12716	12431	12129	11823	11548	
50	4375	4423	4831	5946	8173	11144	13180	13358	13389	13299	13106	12823	12487	12132	11793	
52.5	3612	3649	3959	4791	6792	10080	12998	13389	13602	13646	13540	13301	12962	12559	12144	
55	3033	3060	3302	3949	5546	8868	12594	13249	13692	13927	13962	13822	13538	13134	12664	
57.5	2570	2590	2781	3290	4536	7633	11929	12865	13594	14092	14340	14360	14185	13843	13376	
60	2192	2207	2355	2755	3735	6453	11037	12208	13240	14046	14580	14836	14843	14635	14247	
62.5	1875	1886	1999	2306	3081	5371	9957	11271	12539	13668	14543	15121	15378	15344	15071	
65	1600	1610	1698	1931	2536	4398	8744	10117	11525	12892	14086	14994	15537	15717	15580	
67.5	1346	1356	1432	1610	2071	3512	7438	8781	10194	11641	12998	14160	14994	15438	15520	
70	1066	1081	1175	1326	1674	2729	5983	7163	8429	9768	11134	12457	13552	14274	14597	
72.5	839	849	918	1064	1325	2065	4502	5480	6546	7681	8853	10071	11212	12077	12591	
75	662	670	711	822	1017	1527	3227	3980	4822	5722	6638	7594	8523	9296	9815	
77.5	513	519	540	611	749	1086	2231	2757	3351	3982	4608	5231	5824	6304	6621	
80	380	384	392	433	513	692	1372	1709	2119	2544	2936	3307	3650	3905	4043	
82.5	258	260	261	278	318	400	768	952	1188	1447	1681	1878	2015	2068	2054	
85	145	145	141	145	155	179	336	409	500	597	675	728	751	726	664	
87.5	42	41	37	31	29	25	36	38	40	41	39	39	37	34	31	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

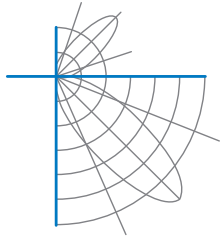
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.

North America (issuing laboratory)

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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	10226	10226	10226	10226	10226	10226	10226	10226	10226	10226	10226	10226	10226	10226	10226	
2.5	10279	10265	10260	10251	10225	10192	10151	10103	10063	10026	9992	9970	9950	9941	9944	
5	10340	10314	10295	10277	10227	10175	10085	9986	9898	9815	9746	9692	9650	9630	9635	
7.5	10395	10364	10332	10305	10232	10157	10019	9869	9731	9600	9485	9396	9331	9298	9302	
10	10452	10410	10372	10332	10240	10147	9961	9759	9564	9381	9219	9092	8998	8954	8955	
12.5	10507	10456	10410	10361	10253	10142	9908	9651	9399	9162	8946	8777	8658	8597	8595	
15	10557	10502	10448	10394	10270	10140	9861	9552	9237	8940	8672	8460	8308	8230	8225	
17.5	10607	10548	10487	10424	10292	10146	9822	9456	9079	8718	8391	8133	7953	7861	7849	
20	10655	10589	10529	10456	10312	10155	9787	9366	8921	8492	8110	7811	7613	7513	7498	
22.5	10700	10630	10565	10490	10335	10165	9758	9279	8763	8263	7830	7501	7291	7192	7175	
25	10741	10666	10597	10521	10362	10173	9731	9195	8604	8033	7554	7203	6992	6893	6878	
27.5	10781	10705	10629	10560	10388	10191	9709	9109	8441	7802	7282	6919	6707	6609	6595	
30	10822	10740	10666	10590	10413	10206	9688	9026	8278	7567	7011	6643	6432	6337	6325	
32.5	10865	10778	10699	10611	10440	10227	9672	8943	8110	7332	6749	6377	6168	6080	6065	
35	10911	10820	10734	10646	10465	10246	9657	8857	7939	7099	6491	6118	5914	5828	5816	
37.5	10966	10862	10770	10676	10492	10264	9641	8768	7767	6865	6238	5864	5671	5590	5578	
40	11032	10914	10808	10711	10517	10286	9625	8673	7588	6632	5987	5622	5440	5366	5355	
42.5	11112	10971	10858	10754	10541	10290	9593	8575	7408	6401	5748	5391	5222	5157	5149	
45	11197	11033	10895	10774	10547	10290	9548	8465	7226	6176	5517	5169	5012	4951	4944	
47.5	11307	11111	10948	10814	10567	10297	9505	8343	7042	5950	5283	4934	4776	4720	4713	
50	11493	11250	11060	10903	10631	10348	9492	8237	6849	5715	5019	4652	4484	4422	4413	
52.5	11769	11460	11223	11043	10743	10440	9522	8146	6641	5432	4696	4299	4113	4048	4040	
55	12193	11806	11503	11277	10937	10606	9592	8063	6403	5075	4293	3864	3662	3590	3580	
57.5	12833	12334	11945	11652	11234	10850	9681	7956	6096	4637	3800	3356	3147	3073	3063	
60	13706	13099	12580	12182	11625	11131	9732	7752	5673	4108	3247	2826	2629	2560	2551	
62.5	14583	13943	13257	12711	11968	11346	9660	7360	5081	3502	2702	2339	2169	2109	2101	
65	15162	14533	13734	12982	12018	11323	9372	6696	4303	2893	2230	1937	1781	1661	1637	
67.5	15273	14769	14031	13134	11873	11039	8742	5723	3416	2334	1842	1591	1369	1267	1257	
70	14542	14180	13595	12777	11255	10293	7702	4536	2622	1857	1513	1264	1078	1024	1018	
72.5	12708	12511	12112	11540	10048	9030	6265	3368	1992	1457	1212	988	865	832	828	
75	10030	9970	9749	9406	8263	7231	4566	2408	1504	1116	931	766	690	666	662	
77.5	6748	6698	6575	6405	5749	4909	2882	1638	1067	801	681	571	535	525	523	
80	4059	3979	3887	3805	3475	2972	1769	1047	592	505	465	406	398	396	394	
82.5	1966	1823	1706	1649	1565	1439	983	548	286	265	275	250	258	262	260	
85	569	470	394	357	400	461	373	192	105	103	119	116	124	126	123	
87.5	29	26	24	23	22	24	22	16	13	12	13	13	8	2	2	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

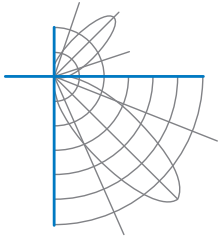
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.

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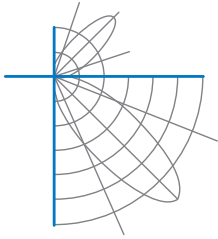


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Luminous Intensity (Candela) Table

	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	

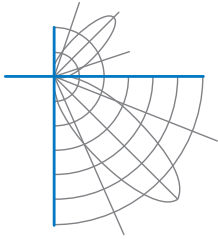


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Luminous Intensity (Candela) Table

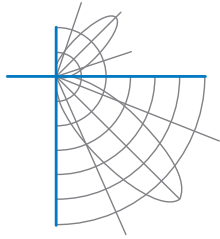
	Lateral (C-Plane) Angles															
	77.5	80	82.5	85	90	95	105	115	125	135	145	155	165	175	180	
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	92.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	97.5	0	0	0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



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Additional Pictures of Test Subject





Report of Test

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Test Distance 9.5 m
Ambient Temperature 25.0 °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.