



8165 E Kaiser Blvd. Anaheim, CA 92808
p. 714.282.2270
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Report No: L091603902

Date: 9/29/2016



NVLAP LAB CODE 200927-0

Report No: L091603902

Report Prepared For: Leotek Electronics USA, LLC
1955 Lundy Ave, San Jose, 95131

Model Number: GCJ2-20H-MV-CW-2R-XX-1A

Test: Electrical and Photometric tests

Standards Used: Appropriate part or all test guidelines were used for test performed:
IESNA LM79: 2008 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI NEMA ANSLG C78.377: 2008 Specification of the Chromaticity of Solid State Lighting Products
ANSI C82.77:2002: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Catalog number is GCJ2-20H-MV-CW-2R-XX-1A. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 9/12/16

Date of Tests: 9/27/16 - 9/27/16

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S1	11/18/16
Xitron Power Analyzer	2503AH	MT-EL01	11/30/16
ITECH DC Power Supply	IT6122	PSDC-03-S1	11/17/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/24/16
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Summary

Manufacturer:	Leotek Electronics USA, LLC	
Model Number:	GCJ2-20H-MV-CW-2R-XX-1A	
Driver Model Number:	PHILIPS ADVANCE XI075C105V070CNY2	
Total Lumens:	7534.20	
Input Voltage (VAC/60Hz):	120.00	
Input Current (Amp):	0.57	
Input Power (W):	68.03	
Input Power Factor:	1.00	
Current ATHD @ 120V(%):	5%	
Current ATHD @ 277V(%):	7% (0.24A, 66.93W, 0.99PF)	
Efficacy:	111	
Color Rendering Index (CRI):	72	
Correlated Color Temperature (K):	4908	
Chromaticity Coordinate x:	0.3487	
Chromaticity Coordinate y:	0.3623	
Ambient Temperature (°C):	25.0	
Stabilization Time (Hours):	0:30	
Total Operating Time (Hours):	5:30	
Off State Power(W):	0.00	

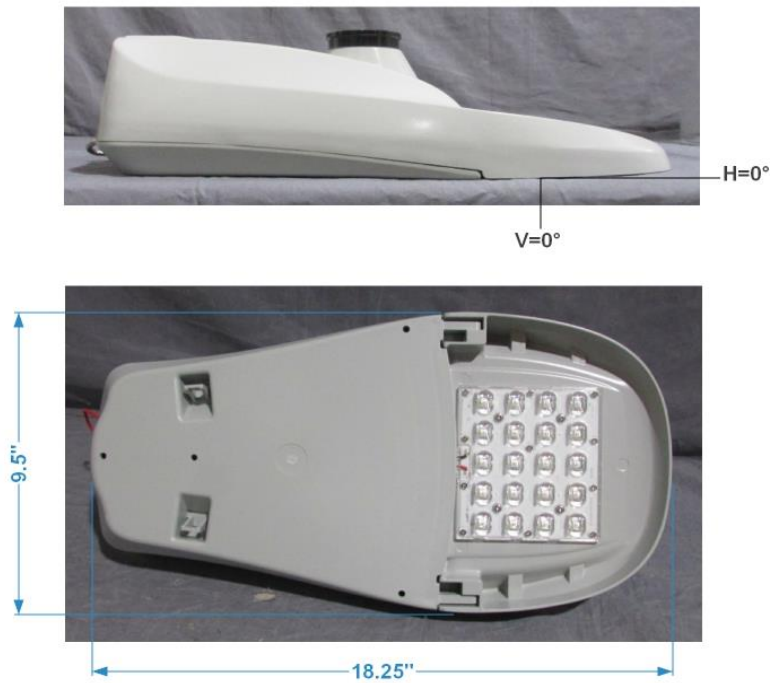
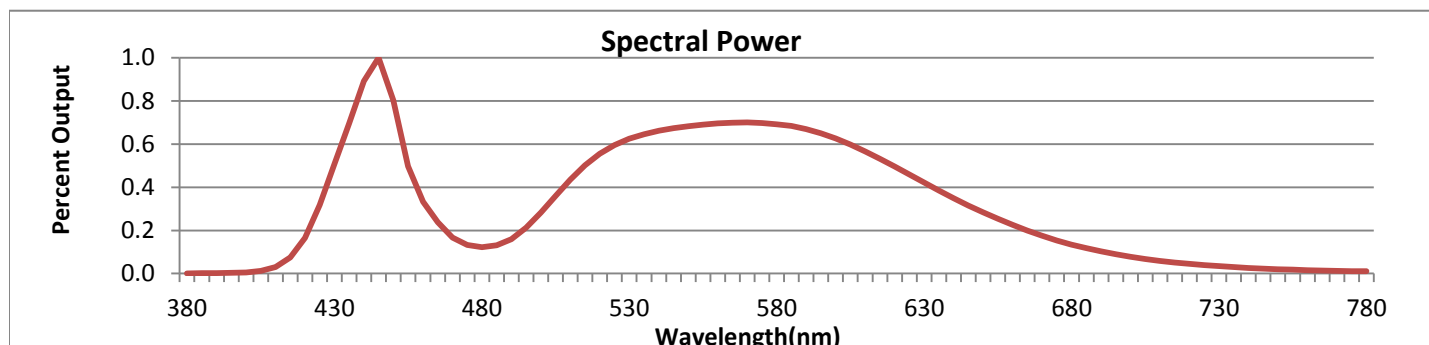


FIG. 1 LUMINAIRE



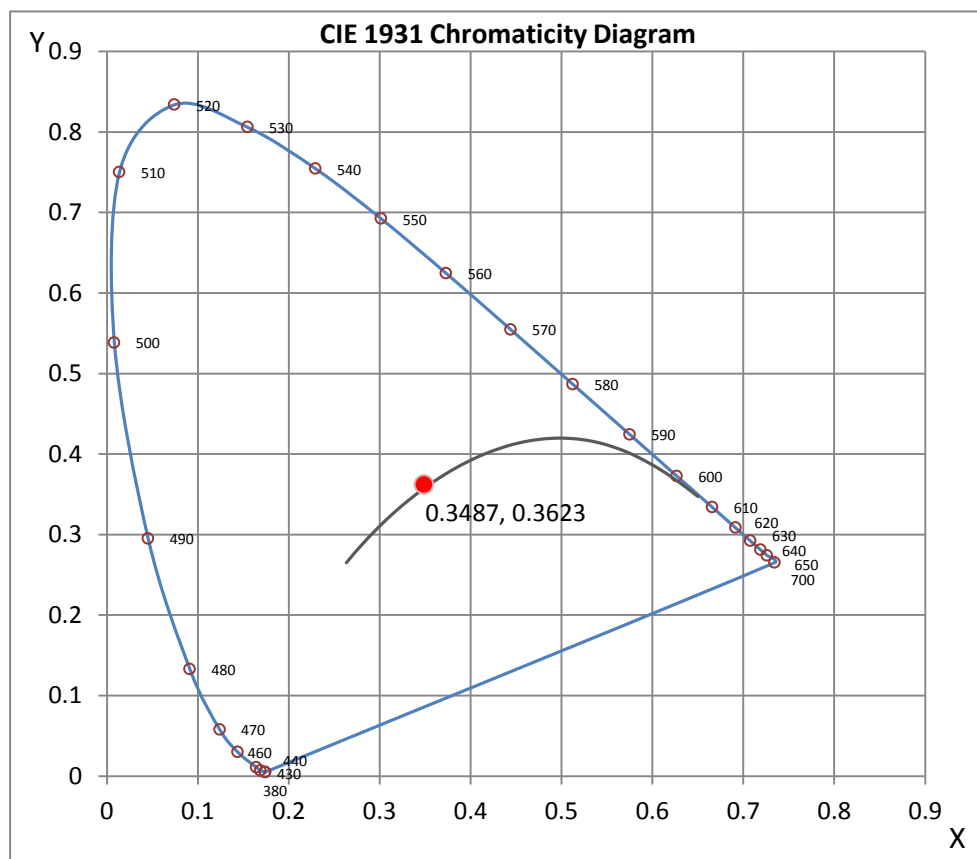
Wavelength	W/m ² nm	440	0.8920	510	0.4350	580	0.6920	650	0.2836	720	0.0449
380	0.0012	450	0.8038	520	0.5553	590	0.6697	660	0.2254	730	0.0341
390	0.0018	460	0.3331	530	0.6254	600	0.6269	670	0.1749	740	0.0262
400	0.0054	470	0.1669	540	0.6623	610	0.5663	680	0.1343	750	0.0201
410	0.0300	480	0.1227	550	0.6837	620	0.4959	690	0.1025	760	0.0155
420	0.1654	490	0.1600	560	0.6964	630	0.4216	700	0.0779	770	0.0118
430	0.5086	500	0.2829	570	0.7005	640	0.3496	710	0.0589	780	0.0104

CRI & CCT

x	0.3487
y	0.3623
u'	0.2097
v'	0.4903
CRI	72.20
CCT	4908
Duv	0.00388

R Values

R1	70.29
R2	75.65
R3	80.14
R4	73.97
R5	70.68
R6	67.25
R7	80.50
R8	59.37
R9	-22.41
R10	42.67
R11	72.05
R12	45.93
R13	70.29
R14	88.34





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Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : JEFF AHN

Test Report Released by:

Jeff Ahn
Engineering Manager

Test Report Reviewed by:

Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 24*

**All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.*



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Photometric Test Report

IES ROAD REPORT

PHOTOMETRIC FILENAME : L091603902.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L091603902
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 9/29/2016
[MANUFAC] Leotek Electronics USA, LLC
[LUMCAT] GCJ2-20H-MV-CW-2R-XX-1A
[LUMINAIRE] 18.25"L. X 9.5"W. X 4.5"H. LED STREET LIGHT
[BALLASTCAT] PHILIPS ADVANCE XI075C105V070CNY2
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[_INPUT] 120VAC, 68.03W
[_TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

IES Classification	Type II
Longitudinal Classification	Medium
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	7534
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	111
Total Luminaire Watts	68.03
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	6355
Maximum Candela Angle	75H 69V
Maximum Candela (<90 Degrees Vertical)	6355
Maximum Candela Angle (<90 Degrees Vertical)	75H 69V
Maximum Candela At 90 Degrees Vertical	0 (0.0% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	1346 (17.9% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

IES ROAD REPORT
PHOTOMETRIC FILENAME : L091603902.IES

LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	739.1	N.A.	9.8
FM - Front-Medium (30-60)	3133.4	N.A.	41.6
FH - Front-High (60-80)	1980.2	N.A.	26.3
FVH - Front-Very High (80-90)	50.4	N.A.	0.7
BL - Back-Low (0-30)	476.7	N.A.	6.3
BM - Back-Medium (30-60)	751.6	N.A.	10.0
BH - Back-High (60-80)	384.1	N.A.	5.1
BVH - Back-Very High (80-90)	18.6	N.A.	0.2
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	7534.1	N.A.	100.0
BUG Rating	B1-U0-G2		

ZONAL LUMEN SUMMARY

Zone	%
0-20	7.5
0-30	16.1
0-40	28.7
0-60	67.7
0-80	99.1
0-90	100
10-90	98
20-40	21.2
20-50	38.8
40-70	59.1
60-80	31.4
70-80	11.3
80-90	0.9
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

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CANDELA TABULATION

Vert. Angles	Horizontal Angles									
	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
0.0	1681	1681	1681	1681	1681	1681	1681	1681	1681	1681
0.5	1680	1680	1681	1681	1681	1681	1681	1681	1681	1680
1.0	1680	1680	1681	1681	1681	1682	1682	1682	1680	1680
1.5	1680	1680	1681	1681	1682	1682	1683	1682	1680	1679
2.0	1680	1680	1681	1681	1682	1683	1683	1683	1680	1678
2.5	1679	1680	1681	1681	1681	1682	1683	1682	1679	1677
3.0	1678	1678	1680	1679	1680	1681	1681	1680	1677	1675
3.5	1676	1677	1678	1677	1677	1678	1679	1678	1674	1673
4.0	1674	1675	1676	1675	1675	1676	1677	1675	1672	1670
4.5	1672	1673	1675	1673	1673	1674	1674	1672	1669	1668
5.0	1671	1672	1673	1671	1670	1671	1672	1670	1667	1666
5.5	1670	1671	1672	1670	1669	1670	1670	1668	1665	1663
6.0	1669	1670	1671	1669	1668	1668	1669	1667	1663	1661
6.5	1668	1670	1670	1668	1667	1667	1668	1666	1662	1658
7.0	1668	1670	1670	1668	1667	1667	1667	1665	1660	1656
7.5	1669	1671	1670	1668	1667	1666	1667	1665	1659	1654
8.0	1671	1674	1673	1671	1670	1668	1667	1665	1658	1653
8.5	1675	1677	1676	1673	1672	1670	1668	1665	1658	1652
9.0	1679	1680	1679	1676	1675	1673	1670	1666	1658	1651
9.5	1682	1684	1682	1680	1678	1676	1672	1667	1658	1650
10.0	1685	1687	1685	1682	1682	1678	1674	1668	1659	1651
10.5	1686	1688	1686	1684	1684	1681	1678	1672	1663	1652
11.0	1686	1688	1687	1685	1686	1685	1682	1677	1667	1655
11.5	1686	1689	1688	1686	1689	1688	1686	1681	1671	1658
12.0	1686	1689	1688	1687	1691	1691	1690	1686	1676	1661
12.5	1685	1689	1688	1688	1693	1693	1694	1691	1681	1665
13.0	1685	1688	1688	1688	1693	1695	1696	1694	1685	1670
13.5	1684	1687	1687	1688	1694	1696	1698	1697	1689	1675
14.0	1683	1687	1687	1688	1694	1696	1699	1700	1694	1681
14.5	1683	1686	1686	1689	1694	1697	1701	1703	1698	1687
15.0	1682	1686	1686	1689	1695	1699	1703	1706	1703	1693
15.5	1682	1686	1686	1689	1696	1700	1705	1709	1707	1699
16.0	1682	1686	1686	1690	1697	1702	1707	1712	1711	1705
16.5	1683	1686	1687	1691	1699	1705	1710	1715	1715	1712
17.0	1683	1687	1688	1693	1701	1707	1713	1719	1720	1718
17.5	1685	1688	1689	1694	1703	1711	1717	1723	1725	1725
18.0	1687	1690	1692	1698	1707	1715	1722	1729	1731	1732
18.5	1690	1693	1695	1701	1711	1719	1727	1735	1738	1740
19.0	1693	1697	1699	1706	1716	1724	1733	1741	1745	1747
19.5	1697	1701	1703	1710	1722	1729	1739	1748	1753	1755
20.0	1701	1706	1708	1716	1728	1736	1746	1755	1761	1763
20.5	1708	1713	1715	1723	1735	1744	1755	1764	1770	1772
21.0	1715	1720	1722	1731	1743	1753	1765	1774	1779	1781
21.5	1723	1728	1730	1739	1752	1763	1776	1785	1789	1790
22.0	1731	1736	1739	1748	1761	1773	1787	1796	1799	1799
22.5	1740	1745	1748	1757	1771	1785	1799	1807	1810	1809
23.0	1750	1755	1758	1768	1783	1798	1812	1820	1821	1819
23.5	1760	1765	1769	1779	1796	1811	1825	1833	1833	1829
24.0	1771	1775	1780	1791	1809	1826	1840	1847	1845	1840
24.5	1782	1786	1791	1803	1823	1842	1855	1862	1858	1851
25.0	1794	1798	1803	1816	1838	1858	1872	1877	1871	1863
25.5	1808	1813	1818	1832	1855	1877	1890	1894	1886	1875
26.0	1823	1828	1833	1848	1873	1896	1910	1911	1901	1889

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CANDELA TABULATION - (Cont.)

26.5	1839	1844	1849	1865	1892	1917	1930	1930	1917	1903
27.0	1854	1860	1865	1882	1912	1938	1952	1950	1935	1917
27.5	1870	1876	1881	1900	1933	1961	1975	1971	1954	1933
28.0	1884	1890	1896	1919	1955	1986	2001	1996	1976	1951
28.5	1898	1904	1911	1938	1979	2013	2029	2023	2000	1970
29.0	1911	1917	1926	1958	2002	2040	2058	2051	2026	1991
29.5	1925	1931	1942	1977	2026	2068	2087	2081	2053	2013
30.0	1940	1946	1957	1996	2050	2096	2118	2112	2082	2038
30.5	1955	1960	1972	2014	2074	2124	2150	2147	2117	2068
31.0	1970	1976	1988	2031	2098	2152	2183	2183	2154	2102
31.5	1986	1991	2003	2048	2121	2179	2217	2221	2192	2137
32.0	2002	2007	2019	2066	2145	2207	2251	2259	2231	2173
32.5	2020	2024	2037	2085	2168	2235	2285	2299	2271	2211
33.0	2040	2044	2057	2106	2190	2261	2317	2339	2314	2252
33.5	2061	2065	2077	2129	2213	2287	2350	2379	2357	2294
34.0	2083	2086	2099	2152	2235	2313	2382	2419	2401	2337
34.5	2105	2108	2121	2175	2258	2339	2415	2460	2445	2380
35.0	2128	2130	2143	2199	2281	2365	2446	2500	2489	2424
35.5	2151	2154	2167	2223	2307	2392	2477	2537	2532	2468
36.0	2175	2177	2190	2248	2333	2419	2506	2574	2575	2513
36.5	2200	2201	2214	2272	2360	2447	2536	2611	2617	2558
37.0	2224	2226	2238	2297	2387	2475	2565	2647	2659	2603
37.5	2249	2250	2262	2322	2413	2503	2595	2681	2701	2648
38.0	2274	2274	2286	2348	2439	2533	2627	2713	2740	2696
38.5	2300	2298	2311	2374	2465	2563	2658	2745	2778	2743
39.0	2325	2323	2336	2400	2491	2594	2690	2775	2816	2791
39.5	2349	2346	2360	2426	2516	2624	2722	2806	2852	2838
40.0	2373	2370	2383	2451	2542	2655	2755	2838	2887	2884
40.5	2395	2393	2407	2474	2570	2685	2791	2872	2919	2929
41.0	2417	2416	2430	2496	2599	2716	2828	2906	2950	2971
41.5	2437	2438	2452	2517	2627	2746	2864	2941	2980	3014
42.0	2456	2458	2473	2537	2655	2776	2900	2976	3010	3055
42.5	2474	2477	2493	2555	2680	2805	2935	3011	3042	3095
43.0	2490	2493	2509	2570	2702	2833	2969	3048	3077	3133
43.5	2504	2506	2523	2584	2723	2860	3000	3084	3114	3170
44.0	2517	2518	2536	2596	2741	2886	3031	3120	3151	3206
44.5	2528	2528	2547	2608	2758	2910	3060	3155	3187	3241
45.0	2538	2537	2557	2618	2774	2932	3087	3188	3223	3277
45.5	2545	2543	2562	2627	2785	2947	3108	3216	3259	3314
46.0	2551	2548	2566	2635	2795	2960	3128	3243	3294	3351
46.5	2554	2551	2568	2642	2804	2971	3145	3268	3328	3387
47.0	2556	2552	2568	2647	2812	2981	3161	3291	3361	3423
47.5	2554	2550	2566	2652	2819	2990	3175	3312	3392	3459
48.0	2548	2544	2562	2656	2827	2998	3186	3329	3421	3494
48.5	2538	2535	2556	2658	2834	3006	3195	3344	3447	3528
49.0	2526	2524	2548	2659	2841	3013	3204	3357	3472	3562
49.5	2510	2510	2538	2659	2846	3020	3211	3369	3496	3594
50.0	2490	2491	2527	2656	2851	3025	3218	3381	3518	3625
50.5	2462	2466	2512	2650	2856	3032	3225	3391	3538	3653
51.0	2429	2436	2496	2641	2859	3037	3231	3400	3556	3679
51.5	2393	2403	2477	2631	2860	3041	3237	3408	3572	3703
52.0	2353	2368	2456	2618	2859	3044	3242	3416	3587	3726
52.5	2309	2331	2432	2603	2853	3044	3246	3421	3598	3745
53.0	2258	2294	2405	2587	2839	3042	3250	3425	3605	3758
53.5	2203	2254	2374	2569	2820	3037	3253	3427	3608	3769
54.0	2144	2211	2340	2547	2798	3030	3256	3429	3610	3777

IES ROAD REPORT
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CANDELA TABULATION - (Cont.)

54.5	2083	2164	2301	2521	2773	3022	3262	3431	3610	3783
55.0	2019	2111	2256	2489	2747	3013	3278	3432	3609	3787
55.5	1957	2050	2200	2447	2728	3014	3334	3429	3602	3784
56.0	1890	1981	2138	2397	2705	3010	3390	3434	3595	3780
56.5	1819	1908	2078	2338	2666	2993	3411	3464	3585	3773
57.0	1731	1819	2008	2270	2618	2967	3413	3520	3578	3764
57.5	1602	1693	1912	2192	2557	2933	3376	3663	3576	3748
58.0	1435	1530	1783	2096	2484	2889	3329	3814	3597	3735
58.5	1158	1248	1556	1958	2401	2830	3291	3935	3703	3734
59.0	886	967	1300	1776	2289	2758	3246	4013	3855	3756
59.5	748	799	1023	1454	2096	2681	3188	3962	4129	3858
60.0	648	672	775	1123	1850	2573	3114	3857	4366	3981
60.5	571	588	665	892	1475	2379	3012	3684	4346	4114
61.0	508	524	593	707	1101	2127	2887	3496	4248	4234
61.5	459	472	525	607	860	1732	2722	3349	4107	4310
62.0	417	426	466	535	673	1322	2506	3203	3948	4342
62.5	377	379	414	477	575	990	2139	3055	3806	4258
63.0	338	332	364	428	507	717	1733	2876	3653	4129
63.5	285	279	305	388	451	597	1321	2593	3469	3959
64.0	237	233	252	350	408	522	947	2267	3258	3771
64.5	209	208	219	301	378	459	728	1882	2991	3590
65.0	189	191	197	256	354	408	569	1485	2700	3398
65.5	177	180	188	225	324	373	484	1086	2399	3177
66.0	168	172	183	203	293	346	427	738	2054	2943
66.5	162	166	173	193	262	320	381	582	1533	2705
67.0	156	161	163	186	233	298	345	486	1042	2452
67.5	150	155	157	174	213	277	315	422	840	2162
68.0	145	150	152	162	198	259	291	375	711	1835
68.5	139	144	147	155	189	241	269	340	578	1381
69.0	134	139	142	149	181	225	250	312	466	963
69.5	130	134	136	143	167	210	234	285	402	807
70.0	126	130	130	137	154	197	220	261	358	716
70.5	122	126	126	131	147	189	208	238	320	613
71.0	118	122	121	124	142	180	198	219	290	520
71.5	114	118	117	119	136	164	185	203	264	439
72.0	110	114	112	115	129	148	173	191	241	372
72.5	105	109	108	110	124	139	163	182	220	334
73.0	100	105	104	107	118	132	154	174	202	307
73.5	95	100	99	102	113	126	145	162	192	278
74.0	91	96	95	98	108	120	138	151	184	253
74.5	86	92	91	94	103	114	131	143	172	232
75.0	82	88	87	90	97	108	124	136	160	215
75.5	79	86	83	87	93	102	118	129	146	200
76.0	76	84	80	84	88	96	111	123	133	186
76.5	72	81	78	82	85	91	105	116	125	169
77.0	69	78	76	80	82	87	100	110	118	153
77.5	66	74	73	77	78	83	95	104	112	139
78.0	64	70	71	74	75	79	91	98	107	126
78.5	62	67	69	71	72	76	87	93	100	113
79.0	61	65	67	68	68	72	82	88	92	100
79.5	59	64	65	65	66	69	78	82	84	89
80.0	57	62	63	63	63	66	74	77	76	80
80.5	55	61	62	60	61	63	69	71	69	72
81.0	54	60	60	57	58	61	65	66	63	65
81.5	53	60	58	55	55	58	61	60	57	59
82.0	51	59	56	52	53	56	57	55	52	54

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CANDELA TABULATION - (Cont.)

82.5	50	59	55	49	50	53	53	50	47	49
83.0	49	59	53	46	47	50	49	46	42	44
83.5	47	60	51	43	44	46	45	41	38	39
84.0	45	61	49	40	41	43	41	37	35	35
84.5	43	61	47	37	37	39	37	34	32	31
85.0	41	60	44	34	34	36	33	30	29	28
85.5	37	53	40	31	32	33	30	28	27	26
86.0	33	45	35	29	29	30	28	26	25	24
86.5	29	37	30	26	26	27	25	24	23	22
87.0	25	28	25	23	23	23	23	22	21	21
87.5	20	20	20	20	20	20	20	19	19	19
88.0	16	15	16	17	17	17	16	16	16	16
88.5	12	11	12	13	13	13	13	13	13	13
89.0	8	8	8	9	9	9	9	9	9	9
89.5	4	4	4	5	5	5	5	5	5	5
90.0	0	0	0	0	0	0	0	0	0	0

Vert. Angles	Horizontal Angles									
	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>	<u>95</u>
0.0	1681	1681	1681	1681	1681	1681	1681	1681	1681	1681
0.5	1680	1680	1679	1679	1678	1679	1678	1678	1678	1677
1.0	1679	1679	1678	1677	1676	1676	1676	1675	1675	1674
1.5	1679	1678	1676	1675	1674	1674	1673	1672	1672	1671
2.0	1678	1676	1675	1673	1671	1671	1671	1668	1669	1667
2.5	1677	1675	1673	1671	1669	1669	1668	1665	1666	1664
3.0	1675	1673	1670	1668	1666	1667	1666	1663	1663	1660
3.5	1672	1670	1668	1666	1664	1664	1663	1660	1660	1656
4.0	1670	1668	1665	1664	1661	1661	1660	1657	1657	1653
4.5	1667	1665	1663	1661	1659	1659	1657	1653	1653	1649
5.0	1665	1662	1660	1658	1656	1655	1654	1650	1649	1644
5.5	1662	1659	1657	1655	1652	1652	1650	1645	1644	1638
6.0	1659	1656	1654	1651	1648	1648	1645	1640	1638	1632
6.5	1657	1654	1651	1647	1644	1643	1641	1635	1632	1625
7.0	1654	1651	1647	1644	1640	1639	1636	1629	1626	1619
7.5	1652	1648	1644	1640	1636	1635	1631	1624	1620	1612
8.0	1650	1645	1640	1635	1631	1630	1625	1618	1613	1604
8.5	1648	1642	1636	1631	1627	1625	1620	1612	1606	1596
9.0	1646	1639	1632	1627	1622	1620	1615	1606	1600	1589
9.5	1644	1636	1628	1623	1618	1616	1610	1601	1593	1582
10.0	1643	1634	1625	1619	1614	1612	1605	1596	1587	1575
10.5	1643	1632	1623	1616	1610	1608	1602	1593	1583	1569
11.0	1644	1631	1622	1614	1608	1606	1600	1589	1579	1564
11.5	1645	1631	1621	1612	1605	1603	1597	1587	1575	1559
12.0	1646	1632	1620	1610	1603	1601	1596	1585	1572	1555
12.5	1649	1633	1621	1610	1602	1600	1595	1583	1570	1551
13.0	1654	1637	1623	1611	1603	1600	1595	1583	1569	1549
13.5	1660	1641	1626	1613	1604	1601	1596	1584	1569	1547
14.0	1666	1647	1629	1615	1606	1602	1597	1585	1569	1546
14.5	1673	1653	1633	1619	1608	1604	1599	1587	1570	1544
15.0	1681	1660	1638	1622	1611	1606	1601	1589	1571	1544
15.5	1689	1668	1646	1627	1614	1610	1604	1591	1573	1544
16.0	1697	1678	1654	1633	1618	1613	1607	1595	1575	1544
16.5	1705	1687	1663	1639	1623	1617	1611	1598	1577	1545
17.0	1713	1697	1673	1646	1628	1622	1615	1602	1580	1546
17.5	1722	1707	1683	1654	1633	1626	1619	1606	1582	1547

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18.0	1730	1717	1694	1663	1639	1632	1624	1609	1585	1548
18.5	1739	1727	1706	1673	1645	1637	1628	1613	1588	1550
19.0	1747	1737	1717	1684	1652	1643	1633	1617	1591	1551
19.5	1756	1746	1729	1695	1660	1649	1638	1621	1594	1553
20.0	1765	1757	1741	1706	1668	1655	1643	1625	1597	1554
20.5	1774	1767	1753	1719	1678	1662	1649	1630	1600	1555
21.0	1783	1777	1764	1733	1688	1669	1655	1635	1604	1556
21.5	1792	1787	1776	1746	1700	1676	1661	1640	1607	1556
22.0	1802	1798	1787	1760	1711	1683	1667	1645	1611	1557
22.5	1811	1808	1799	1773	1723	1691	1674	1650	1614	1558
23.0	1820	1817	1809	1785	1735	1699	1680	1655	1618	1560
23.5	1829	1827	1819	1796	1747	1707	1687	1661	1621	1562
24.0	1839	1836	1829	1807	1759	1716	1694	1667	1625	1565
24.5	1849	1845	1840	1818	1771	1725	1702	1672	1629	1567
25.0	1859	1855	1850	1828	1783	1734	1709	1678	1633	1570
25.5	1870	1865	1859	1839	1795	1743	1717	1685	1638	1572
26.0	1881	1875	1869	1849	1806	1753	1725	1691	1643	1574
26.5	1893	1885	1878	1860	1816	1762	1733	1698	1648	1576
27.0	1905	1896	1889	1870	1827	1772	1740	1704	1653	1578
27.5	1919	1908	1899	1881	1838	1782	1748	1711	1658	1580
28.0	1933	1920	1910	1892	1849	1790	1755	1719	1663	1581
28.5	1949	1933	1922	1903	1859	1798	1761	1726	1668	1583
29.0	1966	1947	1934	1915	1870	1805	1767	1734	1673	1584
29.5	1984	1962	1947	1927	1881	1813	1772	1741	1678	1586
30.0	2004	1978	1961	1939	1893	1822	1777	1747	1683	1588
30.5	2028	1995	1975	1951	1905	1831	1781	1752	1688	1592
31.0	2054	2014	1991	1964	1918	1841	1784	1756	1693	1596
31.5	2081	2034	2007	1977	1931	1851	1788	1760	1699	1601
32.0	2109	2055	2023	1991	1945	1862	1791	1763	1704	1605
32.5	2140	2079	2041	2006	1958	1873	1795	1766	1709	1610
33.0	2176	2107	2061	2021	1971	1886	1800	1768	1713	1613
33.5	2214	2138	2081	2037	1984	1900	1805	1770	1717	1617
34.0	2254	2171	2103	2054	1997	1914	1811	1771	1721	1620
34.5	2294	2205	2126	2071	2011	1928	1817	1773	1725	1623
35.0	2337	2240	2150	2089	2026	1942	1824	1776	1727	1625
35.5	2381	2278	2179	2109	2043	1956	1833	1780	1729	1626
36.0	2427	2318	2210	2129	2060	1969	1842	1784	1730	1626
36.5	2473	2359	2242	2151	2078	1982	1851	1789	1731	1625
37.0	2520	2401	2275	2174	2097	1996	1861	1794	1732	1625
37.5	2568	2444	2311	2199	2117	2010	1871	1800	1734	1625
38.0	2615	2490	2351	2228	2137	2026	1882	1806	1737	1626
38.5	2663	2536	2392	2259	2158	2042	1894	1813	1741	1628
39.0	2711	2584	2435	2292	2180	2059	1906	1820	1745	1629
39.5	2760	2633	2480	2325	2203	2077	1918	1827	1749	1631
40.0	2810	2683	2525	2360	2227	2095	1931	1834	1754	1633
40.5	2861	2734	2574	2396	2253	2115	1946	1841	1759	1636
41.0	2914	2786	2623	2433	2281	2137	1961	1848	1765	1638
41.5	2966	2839	2674	2472	2310	2159	1976	1855	1772	1640
42.0	3019	2893	2725	2511	2340	2181	1992	1863	1778	1643
42.5	3071	2948	2777	2553	2372	2205	2009	1871	1784	1645
43.0	3122	3007	2831	2599	2406	2230	2026	1881	1789	1647
43.5	3173	3067	2886	2646	2442	2257	2045	1891	1793	1648
44.0	3224	3127	2942	2695	2479	2284	2063	1902	1798	1649
44.5	3273	3186	2998	2745	2516	2311	2082	1913	1802	1651
45.0	3321	3245	3054	2796	2555	2339	2102	1925	1808	1653
45.5	3367	3301	3111	2851	2596	2366	2122	1936	1814	1655

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46.0	3411	3355	3168	2907	2637	2394	2142	1947	1820	1658
46.5	3454	3408	3225	2963	2680	2422	2163	1959	1827	1661
47.0	3496	3460	3282	3020	2723	2451	2185	1971	1834	1664
47.5	3536	3511	3338	3075	2766	2482	2207	1984	1841	1668
48.0	3574	3559	3394	3129	2811	2518	2230	1995	1849	1674
48.5	3609	3606	3449	3181	2856	2555	2255	2007	1857	1680
49.0	3644	3652	3503	3232	2901	2592	2280	2020	1866	1686
49.5	3677	3696	3556	3283	2945	2631	2305	2033	1875	1692
50.0	3708	3739	3607	3331	2989	2669	2332	2048	1885	1698
50.5	3739	3780	3655	3375	3028	2706	2361	2064	1897	1701
51.0	3769	3820	3700	3417	3067	2742	2391	2082	1909	1705
51.5	3797	3857	3744	3458	3105	2779	2421	2101	1922	1708
52.0	3823	3892	3787	3498	3144	2816	2453	2121	1936	1711
52.5	3847	3925	3827	3537	3183	2854	2486	2142	1949	1714
53.0	3867	3951	3863	3577	3227	2891	2520	2164	1962	1720
53.5	3884	3973	3896	3617	3271	2929	2555	2187	1975	1727
54.0	3899	3993	3928	3656	3316	2968	2592	2210	1988	1734
54.5	3911	4011	3958	3694	3360	3008	2630	2235	2001	1741
55.0	3920	4025	3987	3732	3402	3048	2669	2262	2015	1748
55.5	3923	4032	4014	3767	3435	3092	2711	2290	2030	1755
56.0	3921	4036	4038	3802	3469	3136	2754	2320	2044	1762
56.5	3915	4038	4054	3841	3517	3182	2800	2350	2054	1776
57.0	3907	4037	4068	3879	3567	3227	2849	2384	2064	1790
57.5	3897	4029	4079	3905	3610	3269	2900	2430	2081	1797
58.0	3888	4020	4091	3929	3653	3314	2952	2476	2099	1803
58.5	3889	4017	4103	3961	3698	3370	3008	2514	2116	1810
59.0	3903	4023	4121	3999	3747	3430	3066	2552	2133	1816
59.5	3960	4059	4161	4051	3804	3496	3128	2596	2152	1813
60.0	4022	4102	4210	4115	3869	3566	3194	2643	2171	1811
60.5	4063	4156	4283	4205	3953	3645	3263	2692	2192	1816
61.0	4094	4202	4354	4302	4048	3731	3338	2744	2214	1823
61.5	4108	4205	4403	4388	4160	3830	3421	2804	2236	1829
62.0	4122	4197	4440	4472	4281	3944	3514	2866	2259	1834
62.5	4170	4188	4451	4553	4413	4088	3626	2918	2284	1838
63.0	4214	4179	4452	4634	4552	4248	3750	2977	2313	1841
63.5	4231	4178	4447	4723	4706	4430	3896	3063	2358	1844
64.0	4212	4181	4440	4810	4866	4621	4057	3159	2402	1850
64.5	4093	4205	4444	4882	5034	4829	4246	3262	2425	1869
65.0	3940	4224	4456	4951	5202	5038	4444	3382	2450	1889
65.5	3775	4212	4505	5020	5371	5240	4646	3555	2499	1900
66.0	3594	4173	4561	5096	5536	5438	4848	3744	2560	1908
66.5	3388	4066	4627	5208	5705	5642	5053	3942	2639	1905
67.0	3173	3928	4663	5321	5863	5837	5256	4133	2735	1905
67.5	2968	3757	4595	5427	5997	6012	5459	4281	2879	1922
68.0	2754	3570	4474	5490	6102	6165	5653	4432	3024	1950
68.5	2513	3374	4268	5410	6144	6280	5826	4645	3122	2010
69.0	2263	3162	4037	5272	6141	6355	5977	4860	3216	2070
69.5	2011	2903	3823	5067	6044	6341	6085	5038	3342	2101
70.0	1733	2635	3599	4837	5913	6287	6152	5190	3472	2132
70.5	1328	2378	3344	4603	5766	6191	6127	5293	3601	2196
71.0	955	2121	3080	4366	5603	6077	6067	5355	3730	2265
71.5	827	1862	2820	4148	5423	5966	5999	5331	3882	2327
72.0	750	1587	2553	3925	5231	5842	5909	5280	4003	2388
72.5	628	1234	2260	3678	5038	5694	5787	5252	4000	2467
73.0	513	912	1972	3411	4831	5522	5631	5200	3957	2522
73.5	439	785	1733	3095	4594	5304	5405	5073	3912	2477

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74.0	382	700	1491	2770	4338	5051	5134	4902	3845	2393
74.5	340	577	1165	2461	4048	4724	4780	4662	3728	2277
75.0	306	462	862	2166	3742	4368	4395	4380	3583	2140
75.5	276	392	720	1916	3406	3984	3987	4027	3408	1989
76.0	249	339	621	1654	3067	3596	3579	3652	3199	1783
76.5	219	301	515	1269	2748	3231	3210	3278	2909	1371
77.0	193	268	423	915	2443	2883	2859	2908	2596	974
77.5	174	232	365	798	2168	2582	2544	2558	2291	852
78.0	158	201	320	743	1916	2302	2243	2219	1988	784
78.5	135	184	273	694	1715	2053	1951	1898	1687	676
79.0	114	169	231	647	1535	1816	1666	1592	1413	561
79.5	102	138	204	570	1371	1575	1378	1316	1247	433
80.0	92	108	180	492	1217	1346	1110	1064	1098	315
80.5	82	92	152	422	1064	1151	908	858	901	240
81.0	74	80	125	358	916	971	731	672	701	181
81.5	67	72	101	298	775	802	572	504	507	131
82.0	60	65	79	243	641	645	428	352	327	89
82.5	54	59	61	193	518	502	305	225	176	56
83.0	48	51	49	152	417	391	227	157	112	40
83.5	42	44	41	116	326	294	167	112	77	31
84.0	36	37	34	85	244	208	119	81	57	27
84.5	31	31	30	58	171	133	81	58	47	25
85.0	27	27	26	36	110	72	52	43	42	25
85.5	25	24	23	26	76	44	35	31	33	22
86.0	23	22	21	21	53	28	24	23	25	20
86.5	21	21	20	18	36	20	19	18	20	18
87.0	20	20	19	18	25	17	16	16	17	17
87.5	19	18	18	18	17	16	16	15	15	16
88.0	16	16	16	15	12	13	13	13	13	13
88.5	13	13	13	13	9	11	11	11	10	11
89.0	9	9	10	10	8	9	9	9	8	8
89.5	5	5	6	6	5	6	6	6	5	5
90.0	0	0	0	0	0	0	0	0	0	0

Vert. Angles **Horizontal Angles**

	<u>100</u>	<u>105</u>	<u>110</u>	<u>115</u>	<u>120</u>	<u>125</u>	<u>130</u>	<u>135</u>	<u>140</u>	<u>145</u>
0.0	1681	1681	1681	1681	1681	1681	1681	1681	1681	1681
0.5	1677	1677	1676	1676	1676	1677	1676	1676	1676	1676
1.0	1674	1673	1672	1672	1672	1673	1672	1671	1671	1671
1.5	1670	1670	1668	1668	1668	1669	1667	1667	1666	1667
2.0	1667	1666	1664	1663	1663	1664	1662	1662	1661	1661
2.5	1663	1662	1659	1658	1658	1659	1657	1655	1655	1655
3.0	1659	1657	1655	1652	1652	1652	1649	1647	1645	1644
3.5	1655	1653	1649	1646	1645	1644	1640	1637	1634	1632
4.0	1651	1648	1644	1640	1637	1636	1631	1627	1623	1620
4.5	1647	1643	1638	1633	1629	1627	1621	1615	1611	1606
5.0	1642	1637	1631	1625	1620	1617	1610	1603	1597	1592
5.5	1635	1629	1622	1615	1609	1605	1596	1589	1582	1576
6.0	1628	1621	1612	1604	1597	1592	1582	1574	1566	1559
6.5	1620	1612	1602	1593	1585	1578	1567	1559	1550	1542
7.0	1612	1603	1591	1581	1572	1564	1552	1543	1532	1524
7.5	1604	1594	1580	1569	1558	1549	1536	1526	1514	1505
8.0	1595	1584	1569	1556	1544	1533	1519	1507	1495	1484
8.5	1587	1573	1557	1542	1529	1516	1501	1488	1475	1463
9.0	1578	1563	1545	1529	1513	1499	1482	1468	1454	1441

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9.5	1569	1552	1533	1515	1498	1482	1464	1448	1433	1419
10.0	1561	1542	1522	1501	1482	1465	1445	1427	1411	1397
10.5	1553	1533	1511	1488	1467	1448	1426	1407	1389	1374
11.0	1546	1524	1500	1475	1452	1431	1407	1385	1367	1351
11.5	1539	1515	1490	1462	1438	1414	1388	1364	1345	1328
12.0	1533	1507	1480	1450	1423	1397	1369	1343	1322	1305
12.5	1527	1499	1470	1438	1409	1380	1350	1323	1300	1281
13.0	1523	1494	1462	1428	1396	1364	1332	1303	1278	1257
13.5	1520	1488	1454	1418	1383	1349	1314	1284	1257	1234
14.0	1517	1483	1446	1409	1371	1334	1297	1265	1235	1210
14.5	1514	1479	1439	1400	1359	1319	1280	1246	1214	1187
15.0	1512	1475	1432	1392	1347	1305	1263	1228	1193	1164
15.5	1510	1471	1427	1383	1336	1292	1247	1209	1172	1142
16.0	1509	1468	1422	1376	1326	1280	1232	1191	1152	1120
16.5	1508	1465	1418	1368	1315	1268	1217	1173	1133	1098
17.0	1507	1462	1414	1360	1305	1257	1202	1155	1113	1077
17.5	1506	1459	1409	1353	1296	1245	1187	1137	1094	1055
18.0	1505	1456	1405	1346	1287	1233	1173	1120	1074	1034
18.5	1504	1453	1400	1339	1280	1221	1160	1103	1055	1013
19.0	1503	1450	1395	1332	1272	1210	1146	1086	1036	991
19.5	1502	1447	1390	1326	1264	1198	1132	1070	1017	970
20.0	1501	1444	1385	1319	1256	1187	1119	1054	999	949
20.5	1500	1441	1379	1312	1247	1176	1106	1039	980	927
21.0	1499	1438	1373	1305	1238	1165	1093	1024	962	906
21.5	1499	1435	1368	1298	1229	1154	1080	1010	943	884
22.0	1498	1432	1362	1291	1220	1143	1067	995	925	863
22.5	1497	1430	1356	1284	1210	1132	1054	980	907	842
23.0	1496	1427	1352	1276	1200	1122	1041	964	890	823
23.5	1496	1425	1347	1269	1190	1111	1028	948	872	804
24.0	1495	1423	1343	1261	1180	1101	1014	932	854	785
24.5	1495	1421	1339	1254	1170	1090	1001	915	837	767
25.0	1494	1419	1334	1246	1160	1079	988	899	820	749
25.5	1493	1415	1328	1239	1151	1067	974	884	802	730
26.0	1493	1412	1323	1232	1142	1054	961	870	785	712
26.5	1492	1408	1317	1225	1133	1042	947	855	767	694
27.0	1492	1404	1311	1218	1125	1029	933	840	750	676
27.5	1492	1401	1306	1211	1116	1016	919	825	733	660
28.0	1492	1399	1300	1203	1107	1004	905	808	716	646
28.5	1493	1398	1295	1196	1097	991	890	791	699	633
29.0	1494	1396	1290	1189	1087	979	875	774	683	621
29.5	1494	1395	1286	1182	1077	967	860	757	667	610
30.0	1495	1393	1281	1175	1067	955	844	739	651	599
30.5	1494	1390	1277	1168	1056	943	828	721	638	590
31.0	1493	1386	1274	1160	1045	931	812	703	625	581
31.5	1493	1383	1270	1153	1034	919	795	685	613	573
32.0	1492	1379	1266	1146	1023	907	778	668	601	566
32.5	1491	1376	1262	1138	1012	894	761	652	590	558
33.0	1491	1373	1256	1131	1002	878	744	638	581	552
33.5	1491	1370	1250	1123	993	862	727	625	573	545
34.0	1492	1367	1243	1116	984	846	710	613	565	539
34.5	1492	1364	1237	1108	974	829	693	601	557	533
35.0	1493	1362	1230	1100	964	812	676	590	550	528
35.5	1493	1361	1224	1092	953	796	660	581	543	523
36.0	1493	1360	1219	1083	941	779	645	571	537	518
36.5	1493	1360	1213	1075	928	763	630	562	531	513
37.0	1493	1359	1208	1066	915	747	615	554	526	508

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CANDELA TABULATION - (Cont.)

37.5	1493	1358	1203	1057	901	730	601	546	520	503
38.0	1492	1357	1199	1048	885	714	589	538	515	498
38.5	1491	1355	1197	1039	867	698	576	530	510	493
39.0	1490	1353	1194	1030	850	681	565	523	504	488
39.5	1489	1350	1191	1020	832	665	553	516	499	483
40.0	1488	1347	1187	1010	814	648	542	509	494	478
40.5	1487	1342	1182	999	798	630	532	502	488	472
41.0	1486	1337	1176	987	782	611	522	496	481	465
41.5	1485	1332	1170	976	766	593	513	489	475	458
42.0	1483	1326	1163	963	750	574	504	483	469	451
42.5	1482	1321	1155	951	733	557	495	477	462	444
43.0	1482	1316	1145	938	714	543	487	470	455	434
43.5	1482	1312	1134	924	694	529	479	464	447	424
44.0	1482	1309	1122	910	674	516	471	457	440	414
44.5	1482	1305	1111	895	653	504	463	450	432	403
45.0	1482	1301	1100	879	632	492	456	443	424	393
45.5	1481	1299	1091	859	610	481	449	436	415	382
46.0	1481	1296	1083	838	587	471	443	428	406	370
46.5	1480	1294	1074	816	565	461	437	420	396	359
47.0	1480	1291	1065	793	543	451	430	413	387	348
47.5	1479	1287	1056	771	522	441	424	405	377	338
48.0	1478	1281	1046	749	505	431	416	397	367	329
48.5	1478	1274	1035	727	489	422	409	390	357	320
49.0	1477	1267	1023	706	473	413	401	382	347	312
49.5	1477	1259	1008	684	458	404	393	374	337	303
50.0	1477	1252	988	661	444	395	384	366	328	296
50.5	1477	1246	950	639	429	385	375	358	319	288
51.0	1478	1240	909	616	415	376	366	349	311	280
51.5	1479	1234	866	593	400	367	357	340	303	273
52.0	1480	1227	824	570	387	358	348	331	295	266
52.5	1481	1220	787	547	374	349	339	322	288	260
53.0	1481	1212	769	526	362	340	331	313	281	255
53.5	1481	1204	756	504	350	331	322	304	274	250
54.0	1481	1195	746	483	340	322	314	296	267	245
54.5	1481	1185	736	462	329	314	306	287	260	240
55.0	1481	1175	727	442	319	306	298	279	254	236
55.5	1481	1164	713	422	311	298	290	271	248	231
56.0	1481	1152	698	403	302	290	281	263	243	227
56.5	1480	1141	684	384	294	282	274	255	238	221
57.0	1479	1128	673	367	286	275	267	248	233	216
57.5	1477	1116	671	351	279	268	260	241	228	212
58.0	1474	1103	668	335	271	261	253	234	223	208
58.5	1471	1090	647	321	264	255	246	227	218	204
59.0	1468	1076	623	308	257	249	240	221	212	200
59.5	1464	1071	602	296	250	243	234	215	206	196
60.0	1460	1049	581	285	244	238	228	209	201	193
60.5	1456	948	559	275	238	232	222	203	196	190
61.0	1451	846	538	265	232	227	217	197	192	188
61.5	1436	818	517	256	226	221	212	191	188	186
62.0	1423	807	495	248	221	216	206	186	184	183
62.5	1426	797	466	241	215	211	200	182	179	178
63.0	1430	788	436	234	210	206	195	179	175	173
63.5	1424	778	417	228	205	201	189	178	171	169
64.0	1415	768	399	222	199	196	183	176	168	167
64.5	1405	756	380	214	194	190	179	168	164	163
65.0	1395	745	362	206	189	185	174	161	160	160

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CANDELA TABULATION - (Cont.)

65.5	1383	732	351	200	184	179	172	156	156	156
66.0	1371	720	341	194	180	174	170	152	151	153
66.5	1359	710	327	189	175	170	160	147	146	149
67.0	1348	700	311	184	171	165	150	142	142	146
67.5	1336	691	291	180	168	159	144	138	137	142
68.0	1325	680	273	175	165	152	139	133	133	139
68.5	1313	656	261	171	159	148	134	129	129	136
69.0	1302	634	252	168	153	144	129	124	126	132
69.5	1293	625	249	166	149	140	123	120	122	129
70.0	1285	619	246	166	146	137	118	116	118	125
70.5	1279	616	241	165	144	133	114	112	114	121
71.0	1271	608	236	165	141	129	110	108	110	118
71.5	1258	576	225	163	138	123	106	103	106	114
72.0	1242	542	213	159	134	118	101	99	102	111
72.5	1242	518	204	153	127	112	97	95	98	107
73.0	1203	496	196	144	119	107	93	90	93	103
73.5	980	474	189	132	112	103	89	86	88	99
74.0	750	454	185	120	105	99	86	82	84	94
74.5	684	449	182	113	100	94	82	78	79	89
75.0	646	445	181	107	96	91	79	75	75	84
75.5	567	433	179	102	91	87	76	71	72	79
76.0	481	415	178	96	87	84	73	68	68	74
76.5	389	387	181	91	83	80	70	65	65	69
77.0	305	354	181	87	79	77	67	62	62	65
77.5	250	311	162	83	76	74	64	58	59	62
78.0	202	267	139	80	72	70	61	55	56	59
78.5	145	225	118	75	69	66	57	52	53	57
79.0	94	187	98	70	66	62	53	49	50	54
79.5	74	158	84	64	62	58	49	46	48	51
80.0	63	134	72	59	58	54	45	44	46	49
80.5	54	114	64	55	54	50	42	41	43	46
81.0	47	98	58	50	50	46	40	39	41	43
81.5	43	82	52	46	46	43	38	37	39	41
82.0	41	69	48	42	42	40	36	35	36	38
82.5	39	57	43	39	39	37	34	33	34	36
83.0	36	49	39	36	36	34	32	32	32	34
83.5	32	42	35	33	33	32	30	30	30	31
84.0	29	36	32	30	30	30	29	28	29	29
84.5	27	31	28	27	28	28	27	26	27	28
85.0	25	27	25	25	26	26	25	25	26	26
85.5	23	24	23	23	24	24	24	24	25	25
86.0	21	21	22	22	23	23	23	23	24	24
86.5	19	20	20	20	21	21	22	22	23	23
87.0	18	18	18	19	19	20	20	21	22	22
87.5	16	16	17	17	17	18	19	19	20	21
88.0	13	13	14	14	14	15	15	16	16	17
88.5	10	10	11	11	11	11	12	12	13	13
89.0	7	7	7	7	7	8	8	8	8	9
89.5	4	4	4	4	4	4	4	4	4	4
90.0	0	0	0	0	0	0	0	0	0	0

**Vert.
Angles**

Horizontal Angles

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0.0	1681	1681	1681	1681	1681	1681	1681
0.5	1676	1676	1676	1675	1675	1675	1675

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CANDELA TABULATION - (Cont.)

1.0	1672	1671	1671	1670	1669	1670	1669
1.5	1667	1667	1666	1665	1664	1664	1663
2.0	1662	1661	1660	1659	1657	1658	1657
2.5	1656	1654	1653	1651	1649	1650	1649
3.0	1645	1643	1642	1639	1637	1638	1636
3.5	1632	1630	1628	1626	1624	1624	1622
4.0	1618	1615	1614	1611	1609	1609	1607
4.5	1604	1600	1599	1596	1593	1593	1591
5.0	1589	1584	1582	1579	1576	1575	1573
5.5	1572	1566	1563	1560	1557	1555	1554
6.0	1554	1548	1543	1540	1536	1535	1533
6.5	1536	1528	1522	1518	1515	1513	1511
7.0	1517	1508	1501	1496	1493	1491	1489
7.5	1497	1487	1479	1474	1470	1468	1466
8.0	1476	1465	1456	1450	1446	1443	1442
8.5	1454	1442	1433	1425	1421	1419	1417
9.0	1431	1419	1409	1401	1396	1393	1391
9.5	1408	1396	1385	1376	1370	1367	1365
10.0	1384	1372	1361	1350	1344	1341	1339
10.5	1360	1347	1336	1325	1317	1314	1312
11.0	1336	1322	1310	1299	1290	1287	1284
11.5	1311	1297	1284	1272	1262	1259	1256
12.0	1287	1271	1258	1246	1235	1231	1229
12.5	1262	1246	1232	1220	1208	1204	1201
13.0	1238	1221	1206	1194	1181	1177	1174
13.5	1214	1196	1181	1168	1155	1150	1147
14.0	1190	1170	1155	1142	1129	1124	1121
14.5	1166	1145	1129	1116	1103	1097	1094
15.0	1142	1120	1103	1089	1076	1070	1067
15.5	1117	1094	1077	1063	1049	1042	1040
16.0	1093	1069	1051	1036	1022	1015	1012
16.5	1069	1044	1025	1009	995	987	984
17.0	1045	1018	999	982	968	959	956
17.5	1021	993	972	954	940	930	928
18.0	997	967	944	925	910	900	898
18.5	974	941	915	895	880	870	867
19.0	950	915	886	865	850	840	837
19.5	926	889	858	835	819	810	807
20.0	903	864	829	806	789	780	777
20.5	880	838	802	777	760	750	747
21.0	856	813	774	748	730	721	718
21.5	834	789	748	719	702	693	690
22.0	811	764	722	692	674	666	663
22.5	789	741	698	667	649	641	639
23.0	767	719	677	647	630	622	620
23.5	746	697	658	630	614	606	604
24.0	726	677	640	613	598	591	589
24.5	706	657	623	598	584	577	575
25.0	687	639	608	585	572	565	562
25.5	670	625	596	574	561	554	551
26.0	654	613	586	565	551	544	541
26.5	639	601	576	557	542	534	531
27.0	625	591	567	549	534	525	522
27.5	612	581	559	541	526	517	513
28.0	602	573	551	534	518	508	504
28.5	593	566	544	526	510	499	495

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CANDELA TABULATION - (Cont.)

29.0	584	559	538	519	503	491	486
29.5	576	552	531	512	495	483	478
30.0	569	546	525	506	488	475	470
30.5	561	540	519	499	481	468	463
31.0	555	534	514	493	475	461	455
31.5	548	528	508	487	468	454	449
32.0	542	522	503	481	462	448	442
32.5	536	516	497	476	456	442	436
33.0	531	511	492	471	451	436	430
33.5	526	506	487	466	446	430	424
34.0	521	502	482	461	440	425	418
34.5	516	497	477	456	435	419	412
35.0	511	492	472	451	429	412	405
35.5	506	488	466	444	421	403	396
36.0	502	483	460	438	413	393	386
36.5	497	478	454	430	404	382	376
37.0	492	472	448	423	395	372	365
37.5	487	467	441	415	386	362	355
38.0	481	460	432	406	377	352	346
38.5	476	452	423	396	367	344	337
39.0	470	444	413	386	357	335	327
39.5	463	436	404	376	348	326	319
40.0	457	428	394	366	338	318	310
40.5	449	418	385	357	329	309	301
41.0	441	409	376	347	320	300	292
41.5	433	399	366	338	311	291	283
42.0	424	388	357	329	302	282	274
42.5	415	378	348	320	293	273	266
43.0	404	368	338	310	284	264	258
43.5	392	358	328	300	275	256	251
44.0	381	348	318	290	266	248	243
44.5	369	338	308	281	258	241	236
45.0	358	328	299	272	250	234	230
45.5	348	318	290	264	243	228	225
46.0	338	309	281	257	237	222	220
46.5	328	299	273	250	232	217	215
47.0	318	290	266	244	226	213	211
47.5	309	281	258	238	221	209	207
48.0	300	274	252	233	217	205	203
48.5	292	267	246	229	214	202	201
49.0	284	260	241	225	210	200	198
49.5	277	254	235	221	207	197	195
50.0	270	248	231	218	204	194	192
50.5	263	242	226	214	201	191	189
51.0	257	237	223	211	198	187	185
51.5	250	231	219	207	194	183	181
52.0	245	227	215	204	191	179	177
52.5	239	222	212	201	188	176	174
53.0	235	218	208	198	184	172	170
53.5	231	214	204	195	180	169	166
54.0	227	210	201	191	177	166	162
54.5	223	206	197	188	173	163	158
55.0	219	203	193	184	169	160	154
55.5	214	200	190	178	166	157	151
56.0	210	196	187	172	164	154	148
56.5	206	193	185	168	161	151	146

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CANDELA TABULATION - (Cont.)

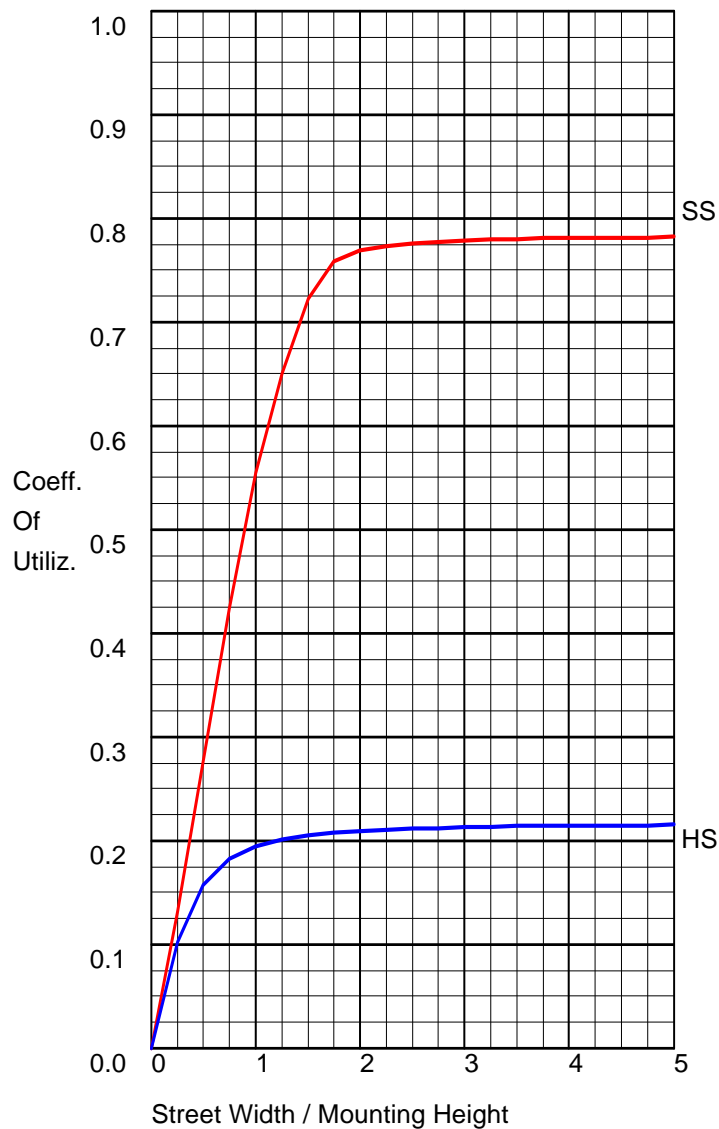
57.0	203	189	182	166	158	150	144
57.5	199	187	176	163	156	148	143
58.0	195	185	169	160	153	146	141
58.5	192	184	166	158	151	144	139
59.0	189	182	164	156	149	142	138
59.5	187	176	162	153	146	140	136
60.0	185	170	160	151	144	138	135
60.5	184	168	157	149	142	136	133
61.0	182	167	155	147	140	134	132
61.5	177	165	153	145	139	133	131
62.0	171	164	151	143	137	132	130
62.5	169	162	149	141	136	131	130
63.0	168	160	147	139	134	130	130
63.5	166	159	145	137	133	130	130
64.0	163	157	143	136	131	130	130
64.5	161	155	142	134	130	130	131
65.0	158	153	140	132	129	129	131
65.5	155	151	139	131	128	129	130
66.0	152	149	138	130	127	128	129
66.5	149	147	137	128	126	127	128
67.0	146	145	136	127	126	126	127
67.5	144	142	135	126	125	124	126
68.0	141	140	133	125	123	123	125
68.5	138	137	131	123	122	122	123
69.0	135	134	129	121	120	120	121
69.5	132	131	127	119	118	118	120
70.0	129	129	125	117	115	117	119
70.5	126	127	122	116	113	116	118
71.0	123	124	120	114	111	114	116
71.5	120	123	118	112	109	110	111
72.0	117	121	116	110	106	106	105
72.5	114	119	114	106	101	99	95
73.0	111	117	112	101	96	92	85
73.5	108	114	110	99	87	83	78
74.0	104	111	108	96	80	74	72
74.5	100	108	106	91	75	72	70
75.0	96	105	103	86	72	70	69
75.5	92	101	101	82	70	68	67
76.0	87	98	97	79	69	67	65
76.5	82	94	92	77	67	65	63
77.0	77	89	87	75	65	63	61
77.5	72	84	83	73	63	60	59
78.0	67	79	79	71	61	58	58
78.5	63	74	75	68	59	56	56
79.0	58	68	72	65	57	54	55
79.5	55	63	69	63	55	52	53
80.0	53	58	65	60	53	50	51
80.5	50	54	61	57	51	48	49
81.0	46	50	56	53	48	46	46
81.5	43	46	52	50	45	43	44
82.0	40	43	47	46	42	41	41
82.5	38	39	43	43	40	38	39
83.0	35	36	39	40	37	36	36
83.5	32	33	36	36	34	33	33
84.0	30	31	33	33	31	30	30
84.5	28	28	30	30	29	28	28

IES ROAD REPORT
PHOTOMETRIC FILENAME : L091603902.IES

CANDELA TABULATION - (Cont.)

85.0	26	26	27	27	26	26	26
85.5	25	25	26	26	25	25	25
86.0	24	24	25	25	24	24	24
86.5	24	24	24	24	24	23	23
87.0	23	23	23	23	23	22	22
87.5	21	21	21	21	21	21	21
88.0	18	18	18	18	18	17	17
88.5	13	13	13	13	13	13	13
89.0	9	9	9	9	9	9	9
89.5	4	4	4	4	4	4	4
90.0	0	0	0	0	0	0	0

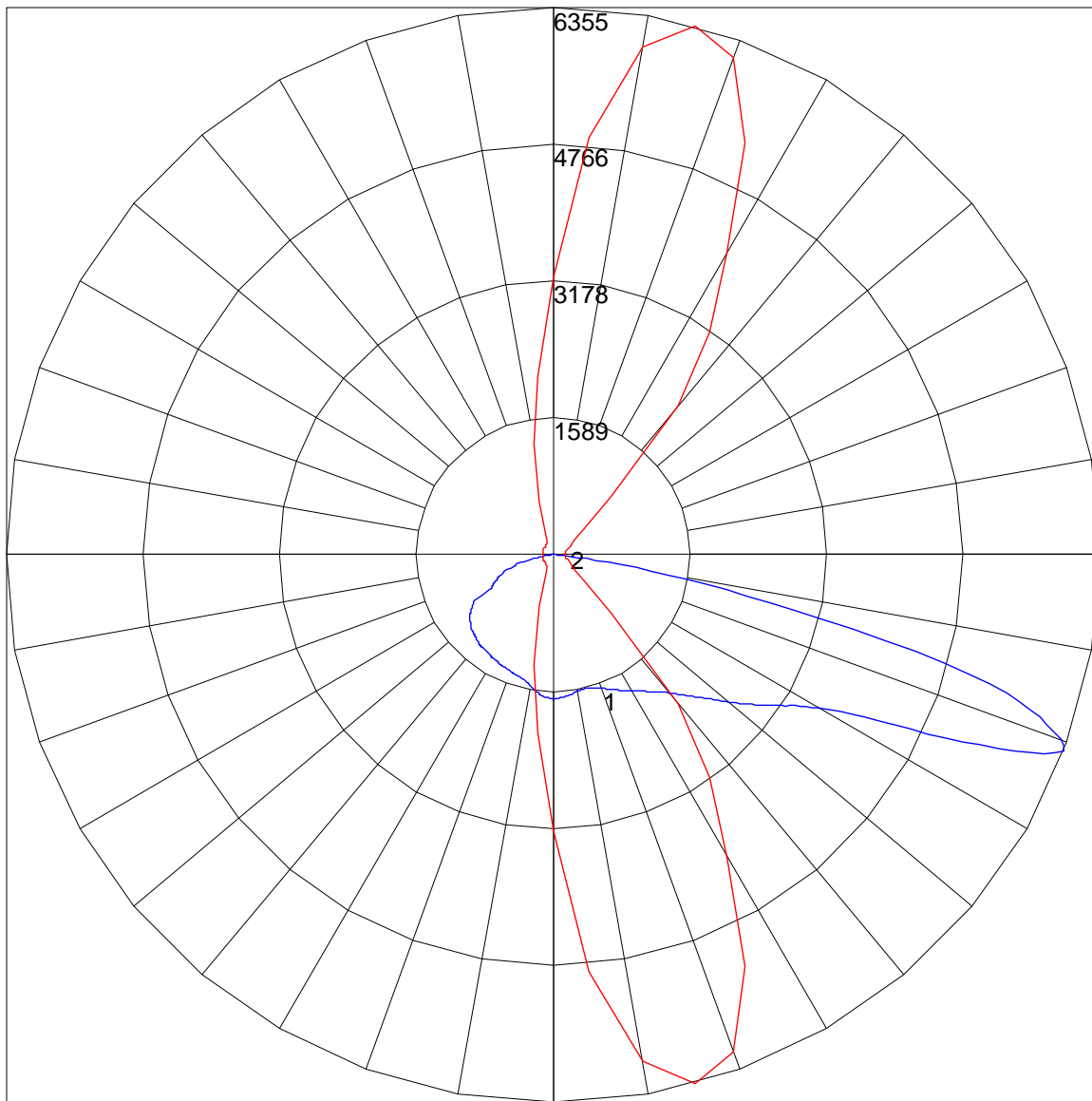
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

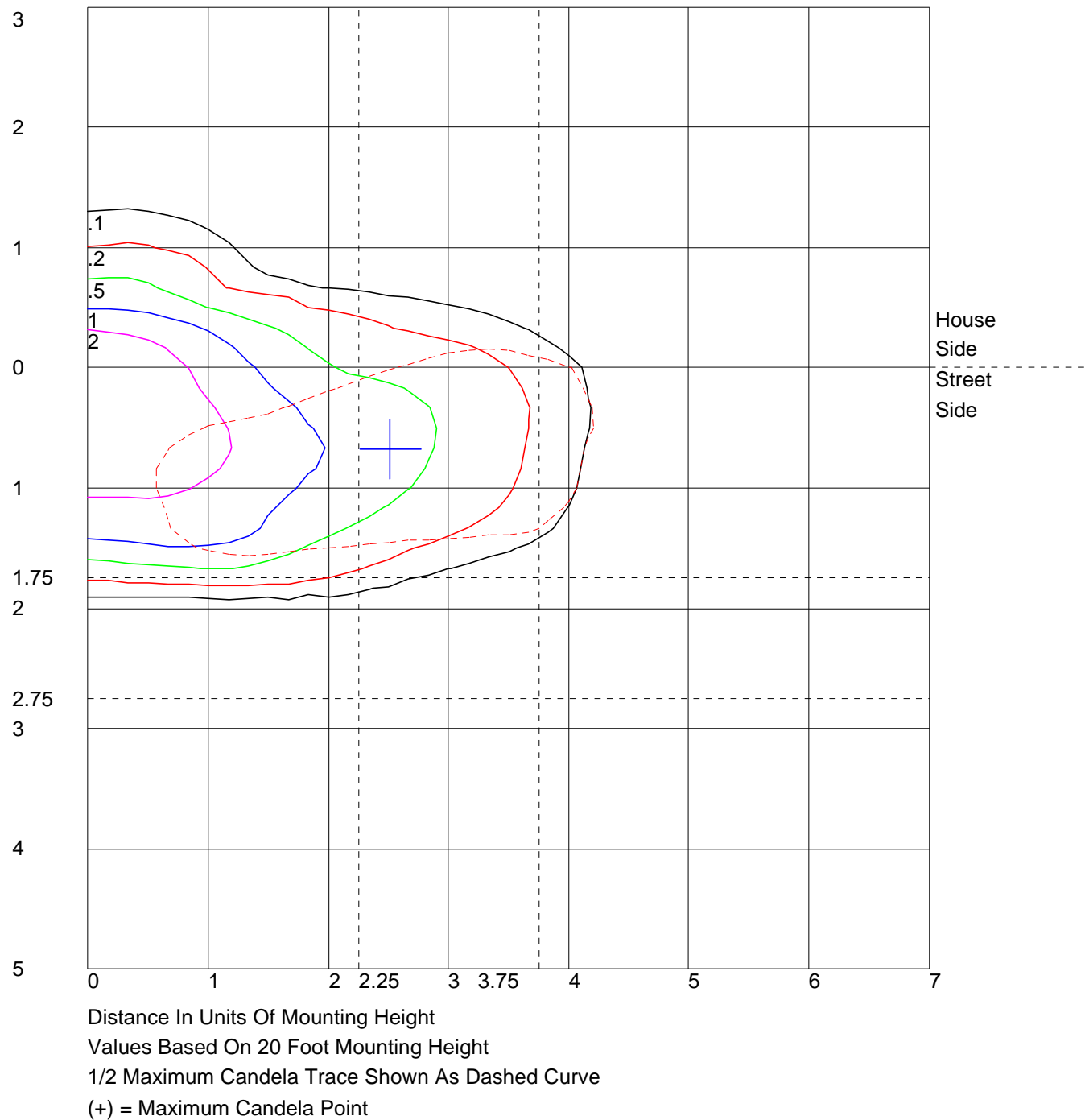
	Lumens	Percent Of Luminaire
Downward Street Side	5903.1	78.4
Downward House Side	1631.1	21.6
Downward Total	7534.2	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	7534.2	100.0

POLAR GRAPH

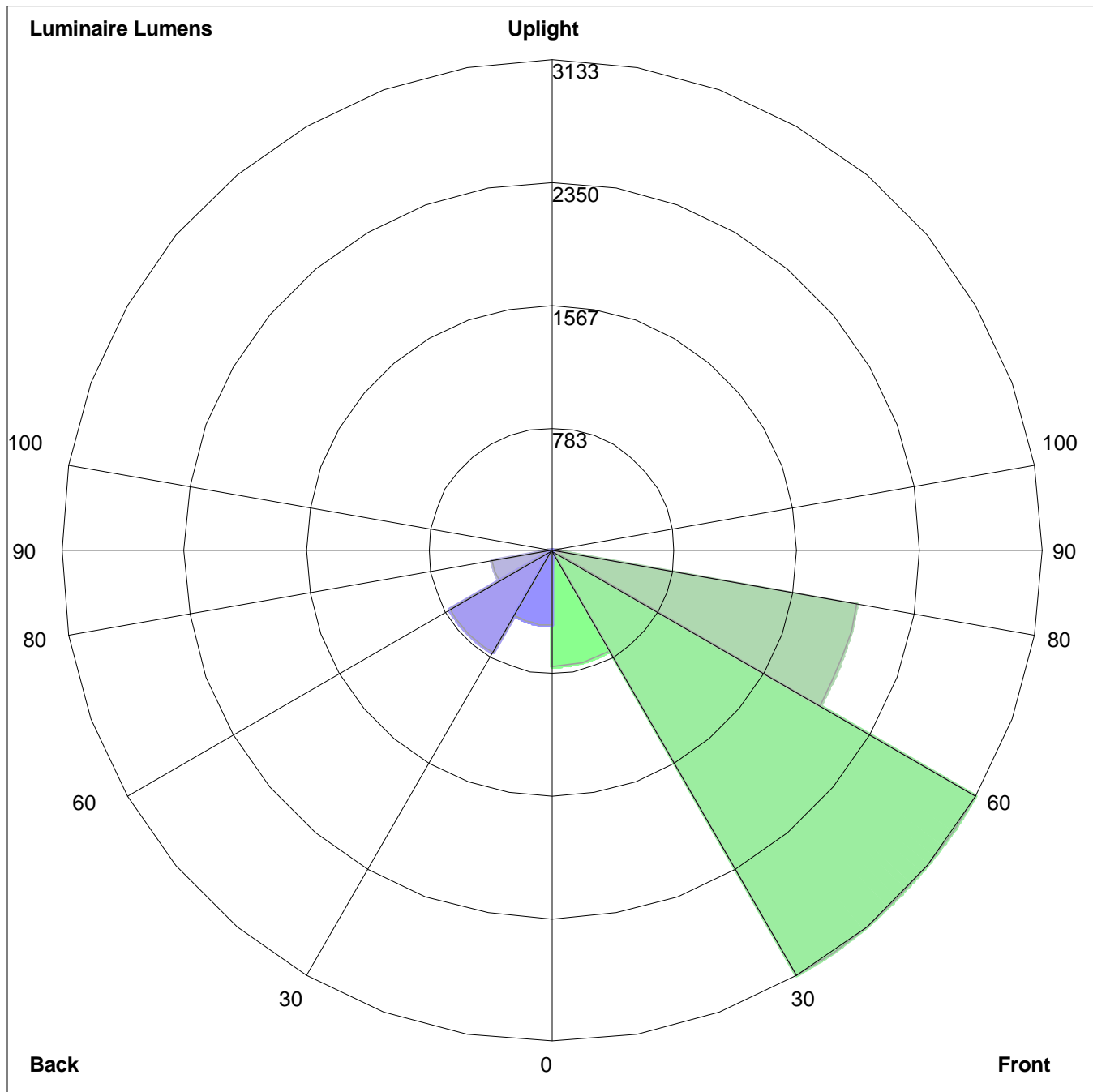


Maximum Candela = 6355 Located At Horizontal Angle = 75, Vertical Angle = 69
1 - Vertical Plane Through Horizontal Angles (75 - 255) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (69) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=739.1, Medium=3133.4, High=1980.2, Very High=50.4
Back: Low=476.7, Medium=751.6, High=384.1, Very High=18.6
Uplight: Low=0.0, High=0.0

BUG Rating : B1-U0-G2