



8165 E Kaiser Blvd. Anaheim, CA 92808  
 p. 714.282.2270  
 f. 714.676.5558

Report No: L091603903

Date: 9/29/2016



NVLAP LAB CODE 200927-0

**Report No:** L091603903

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

**Model Number:** GCJ2-20H-MV-CW-3-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-3-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**

<b>Manufacturer:</b>	Leotek Electronics USA, LLC	
<b>Model Number:</b>	GCJ2-20H-MV-CW-3-XX-1A	
<b>Driver Model Number:</b>	PHILIPS ADVANCE XI075C105V070CNY2	
<b>Total Lumens:</b>	7473.40	
<b>Input Voltage (VAC/60Hz):</b>	120.00	
<b>Input Current (Amp):</b>	0.57	
<b>Input Power (W):</b>	67.97	
<b>Input Power Factor:</b>	1.00	
<b>Current ATHD @ 120V(%):</b>	5%	
<b>Current ATHD @ 277V(%):</b>	7% (0.24A, 66.86W, 0.99PF)	
<b>Efficacy:</b>	110	
<b>Color Rendering Index (CRI):</b>	73	
<b>Correlated Color Temperature (K):</b>	4904	
<b>Chromaticity Coordinate x:</b>	0.3485	
<b>Chromaticity Coordinate y:</b>	0.3596	
<b>Ambient Temperature (°C):</b>	25.0	
<b>Stabilization Time (Hours):</b>	0:30	
<b>Total Operating Time (Hours):</b>	5:30	
<b>Off State Power(W):</b>	0.00	

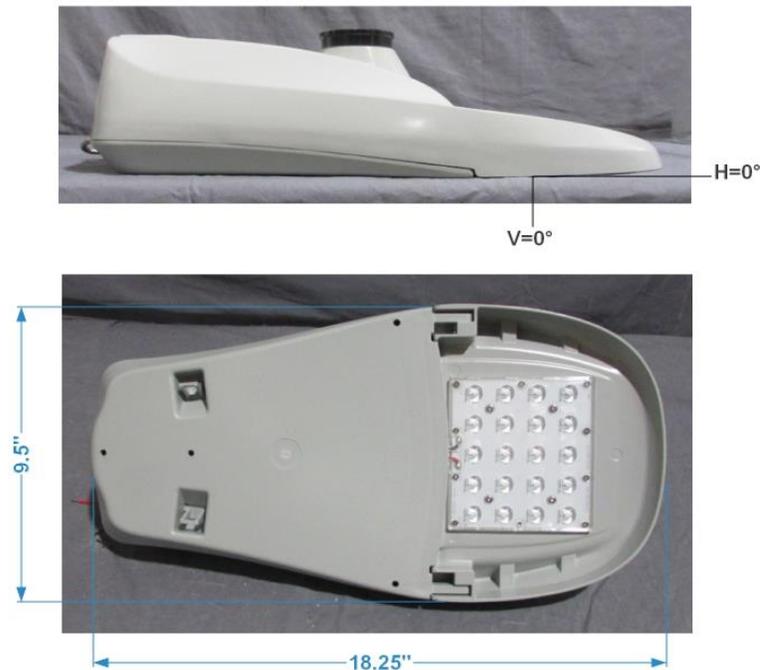
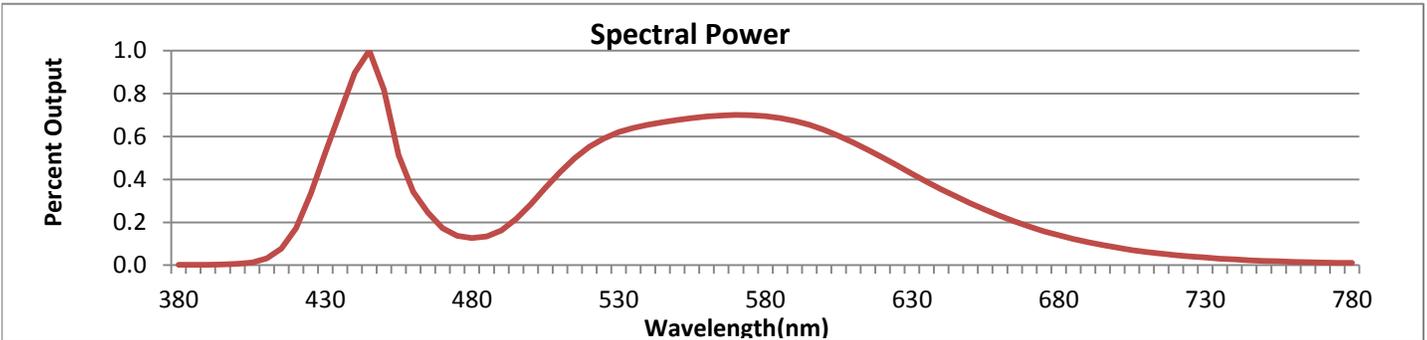


FIG. 1 LUMINAIRE

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



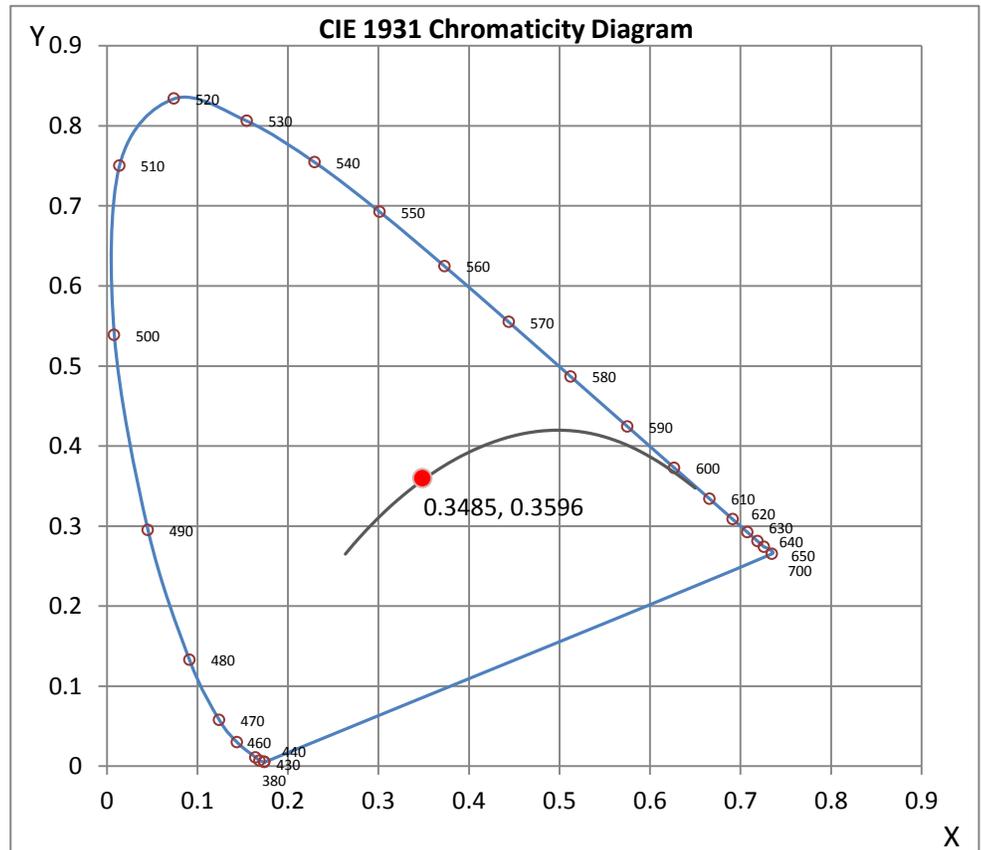
Wavelength	W/m <sup>2</sup> nm	440	0.8973	510	0.4345	580	0.6946	650	0.2885	720	0.0470
380	0.0013	450	0.8179	520	0.5525	590	0.6726	660	0.2301	730	0.0355
390	0.0020	460	0.3417	530	0.6203	600	0.6318	670	0.1798	740	0.0269
400	0.0058	470	0.1730	540	0.6552	610	0.5724	680	0.1395	750	0.0204
410	0.0312	480	0.1268	550	0.6767	620	0.5023	690	0.1068	760	0.0156
420	0.1731	490	0.1627	560	0.6932	630	0.4268	700	0.0814	770	0.0119
430	0.5255	500	0.2842	570	0.7005	640	0.3544	710	0.0616	780	0.0104

**CRI & CCT**

x	0.3485
y	0.3596
u'	0.2106
v'	0.4890
CRI	72.90
CCT	4904
Duv	0.00264

**R Values**

R1	71.28
R2	76.32
R3	80.37
R4	74.66
R5	71.63
R6	68.07
R7	80.68
R8	60.29
R9	-19.08
R10	44.06
R11	72.98
R12	47.35
R13	71.23
R14	88.45



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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:

Test Report Reviewed by:

Jeff Ahn  
 Engineering Manager

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 : L091603903.IES**

## DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] L091603903  
 [TESTLAB] LIGHT LABORATORY, INC.  
 [ISSUEDATE] 9/29/2016  
 [MANUFAC] Leotek Electronics USA, LLC  
 [LUMCAT] GCJ2-20H-MV-CW-3-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, 67.97W  
 [\_TEST PROCEDURE] IESNA:LM-79-08

## CHARACTERISTICS

IES Classification	Type III
Longitudinal Classification	Medium
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	7473
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	110
Total Luminaire Watts	67.97
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	4916
Maximum Candela Angle	80H 69V
Maximum Candela (<90 Degrees Vertical)	4916
Maximum Candela Angle (<90 Degrees Vertical)	80H 69V
Maximum Candela At 90 Degrees Vertical	0 (0.0% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	413 (5.5% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

**IES ROAD REPORT**  
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**LUMINAIRE CLASSIFICATION SYSTEM (LCS)**

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	426.7	N.A.	5.7
FM - Front-Medium (30-60)	1985.3	N.A.	26.6
FH - Front-High (60-80)	2402.2	N.A.	32.1
FVH - Front-Very High (80-90)	35.6	N.A.	0.5
BL - Back-Low (0-30)	439.7	N.A.	5.9
BM - Back-Medium (30-60)	1494.0	N.A.	20.0
BH - Back-High (60-80)	669.6	N.A.	9.0
BVH - Back-Very High (80-90)	20.3	N.A.	0.3
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	7473.4	N.A.	100.0
BUG Rating	B2-U0-G2		

**ZONAL LUMEN SUMMARY**

Zone	%
0-20	4.4
0-30	11.6
0-40	23.7
0-60	58.1
0-80	99.3
0-90	100
10-90	99
20-40	19.3
20-50	34.8
40-70	61.8
60-80	41.1
70-80	13.7
80-90	0.7
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

**IES ROAD REPORT**  
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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	768	768	768	768	768	768	768	768	768	768
0.5	767	767	767	767	767	767	767	767	766	766
1.0	765	765	765	765	765	765	765	765	764	764
1.5	764	764	764	763	764	764	763	763	762	761
2.0	762	762	762	761	762	762	761	761	759	759
2.5	760	760	760	759	760	760	759	759	757	756
3.0	757	757	757	756	757	757	756	756	754	753
3.5	755	755	754	754	754	754	753	753	751	750
4.0	752	752	751	751	751	751	750	750	749	748
4.5	749	750	749	748	749	748	748	747	746	745
5.0	747	747	746	746	746	745	745	745	744	743
5.5	745	745	744	744	744	743	743	743	742	742
6.0	743	743	742	742	742	741	742	742	741	741
6.5	741	741	740	740	740	740	740	741	740	740
7.0	740	739	739	738	739	739	739	740	740	740
7.5	739	738	738	737	738	738	739	740	740	741
8.0	739	737	737	737	738	738	739	741	741	743
8.5	739	737	737	737	738	739	740	742	744	746
9.0	739	738	737	737	739	739	741	744	746	749
9.5	740	739	738	738	740	741	743	746	749	753
10.0	741	740	739	740	742	743	745	749	753	757
10.5	744	743	742	743	745	747	749	754	758	763
11.0	747	746	746	747	749	751	754	759	764	769
11.5	751	750	750	751	753	756	759	765	770	776
12.0	755	755	755	756	758	761	765	771	777	783
12.5	760	760	760	761	764	767	771	778	784	791
13.0	767	767	767	768	771	774	779	786	792	800
13.5	775	775	775	775	779	782	787	795	802	810
14.0	783	783	783	784	787	791	796	804	811	820
14.5	791	791	791	792	796	800	805	814	821	831
15.0	800	800	800	801	805	809	815	824	832	842
15.5	809	809	809	811	815	819	826	835	844	854
16.0	818	819	819	821	825	830	837	847	856	867
16.5	828	828	829	831	836	841	849	859	869	880
17.0	838	839	839	842	847	852	861	872	882	893
17.5	848	849	850	853	858	864	873	885	896	907
18.0	859	860	861	864	870	876	886	898	910	922
18.5	871	872	873	876	882	888	899	912	925	937
19.0	882	883	884	888	894	901	913	926	939	953
19.5	894	896	897	900	906	914	926	940	954	968
20.0	907	908	909	913	919	927	940	954	969	984
20.5	920	921	922	926	932	940	954	968	984	1000
21.0	934	934	936	940	946	954	968	983	999	1015
21.5	948	948	950	954	960	968	982	998	1014	1030
22.0	962	962	964	968	974	982	996	1012	1029	1046
22.5	976	976	978	982	988	996	1010	1027	1044	1061
23.0	990	991	992	996	1002	1010	1024	1041	1058	1076
23.5	1005	1005	1007	1011	1017	1024	1038	1055	1072	1090
24.0	1019	1020	1022	1025	1031	1038	1051	1069	1086	1104
24.5	1033	1035	1036	1040	1046	1053	1065	1082	1100	1118
25.0	1048	1050	1051	1054	1060	1067	1079	1096	1114	1132
25.5	1063	1065	1066	1068	1074	1081	1093	1109	1127	1146
26.0	1078	1079	1080	1083	1088	1096	1107	1123	1140	1159

**IES ROAD REPORT**  
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**CANDELA TABULATION - (Cont.)**

26.5	1092	1094	1095	1097	1103	1110	1121	1136	1153	1172
27.0	1107	1108	1109	1112	1117	1124	1135	1149	1166	1185
27.5	1122	1123	1124	1126	1131	1138	1149	1162	1179	1198
28.0	1137	1137	1138	1140	1145	1152	1162	1175	1191	1210
28.5	1151	1152	1153	1155	1159	1165	1175	1188	1203	1221
29.0	1165	1166	1167	1169	1173	1179	1188	1201	1215	1233
29.5	1180	1181	1182	1183	1187	1192	1201	1214	1227	1244
30.0	1194	1195	1196	1197	1201	1205	1214	1227	1239	1255
30.5	1208	1209	1210	1211	1215	1218	1227	1239	1251	1266
31.0	1223	1224	1224	1225	1228	1231	1239	1250	1262	1276
31.5	1237	1238	1238	1238	1242	1244	1251	1262	1273	1287
32.0	1251	1252	1252	1252	1255	1257	1263	1273	1284	1297
32.5	1265	1266	1266	1265	1268	1269	1275	1284	1295	1307
33.0	1278	1279	1279	1278	1281	1281	1286	1295	1305	1316
33.5	1291	1292	1292	1290	1293	1293	1297	1305	1314	1325
34.0	1304	1305	1304	1303	1305	1304	1308	1315	1323	1334
34.5	1316	1317	1316	1315	1317	1315	1318	1325	1332	1343
35.0	1328	1329	1328	1326	1328	1326	1328	1335	1341	1351
35.5	1339	1340	1338	1336	1338	1336	1337	1344	1349	1358
36.0	1349	1350	1348	1346	1348	1345	1346	1353	1357	1365
36.5	1359	1359	1358	1355	1357	1354	1355	1361	1365	1372
37.0	1368	1368	1367	1364	1366	1363	1364	1369	1373	1379
37.5	1377	1377	1376	1373	1374	1371	1372	1377	1380	1385
38.0	1384	1384	1383	1380	1381	1378	1379	1384	1386	1391
38.5	1391	1391	1390	1387	1388	1385	1386	1391	1393	1397
39.0	1397	1398	1397	1394	1395	1392	1393	1397	1399	1402
39.5	1403	1404	1403	1400	1401	1399	1400	1404	1405	1408
40.0	1409	1410	1409	1406	1407	1405	1407	1411	1411	1413
40.5	1414	1415	1414	1411	1412	1411	1413	1418	1417	1418
41.0	1419	1420	1420	1416	1418	1416	1420	1425	1422	1422
41.5	1424	1425	1425	1422	1423	1422	1427	1432	1429	1427
42.0	1429	1431	1431	1427	1428	1428	1434	1439	1435	1432
42.5	1435	1437	1437	1433	1434	1434	1442	1448	1442	1437
43.0	1443	1444	1444	1440	1440	1441	1451	1458	1450	1443
43.5	1451	1453	1452	1447	1447	1448	1461	1469	1459	1449
44.0	1460	1462	1460	1455	1454	1456	1472	1482	1469	1455
44.5	1470	1471	1470	1464	1462	1464	1484	1495	1480	1463
45.0	1481	1482	1480	1474	1471	1474	1497	1509	1492	1471
45.5	1493	1494	1492	1486	1482	1486	1513	1526	1507	1482
46.0	1507	1508	1506	1498	1493	1499	1530	1545	1524	1494
46.5	1522	1523	1520	1512	1506	1513	1548	1564	1543	1506
47.0	1539	1540	1537	1527	1520	1528	1568	1585	1562	1520
47.5	1559	1559	1555	1544	1535	1544	1589	1608	1584	1535
48.0	1586	1585	1578	1564	1552	1563	1613	1634	1610	1552
48.5	1615	1614	1604	1586	1571	1583	1639	1662	1638	1571
49.0	1648	1645	1632	1610	1592	1605	1666	1691	1667	1590
49.5	1683	1679	1662	1637	1615	1628	1694	1721	1698	1611
50.0	1722	1717	1697	1667	1640	1654	1723	1753	1730	1633
50.5	1773	1766	1742	1707	1672	1684	1754	1787	1765	1658
51.0	1827	1819	1791	1750	1707	1717	1786	1823	1802	1684
51.5	1884	1874	1843	1797	1745	1752	1820	1861	1840	1712
52.0	1942	1930	1897	1846	1786	1789	1856	1899	1878	1741
52.5	2000	1988	1953	1900	1833	1830	1895	1940	1917	1771
53.0	2060	2049	2017	1967	1894	1879	1942	1985	1956	1804
53.5	2119	2110	2083	2038	1961	1932	1993	2032	1995	1839
54.0	2177	2169	2148	2110	2030	1988	2046	2080	2035	1875

**IES ROAD REPORT**  
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**CANDELA TABULATION - (Cont.)**

54.5	2232	2226	2212	2181	2101	2046	2101	2131	2076	1912
55.0	2281	2278	2271	2251	2175	2108	2159	2183	2117	1951
55.5	2314	2314	2316	2314	2257	2180	2222	2240	2156	1993
56.0	2341	2343	2355	2373	2338	2257	2289	2299	2198	2037
56.5	2366	2368	2387	2421	2411	2341	2360	2361	2250	2084
57.0	2389	2390	2416	2465	2479	2426	2433	2426	2304	2133
57.5	2410	2412	2445	2503	2534	2506	2511	2493	2358	2184
58.0	2429	2433	2471	2538	2583	2582	2590	2564	2414	2236
58.5	2445	2450	2492	2569	2627	2653	2672	2644	2476	2292
59.0	2462	2466	2511	2596	2667	2720	2755	2726	2542	2349
59.5	2483	2487	2530	2618	2700	2778	2838	2810	2617	2407
60.0	2506	2510	2550	2637	2731	2830	2918	2896	2697	2468
60.5	2534	2537	2574	2657	2762	2874	2990	2985	2786	2540
61.0	2563	2565	2599	2678	2790	2914	3057	3075	2879	2619
61.5	2591	2594	2627	2703	2812	2952	3116	3164	2977	2712
62.0	2618	2623	2654	2729	2832	2985	3169	3252	3079	2811
62.5	2644	2650	2682	2757	2854	3006	3216	3341	3190	2915
63.0	2667	2675	2708	2783	2875	3023	3258	3427	3304	3024
63.5	2688	2695	2732	2805	2897	3041	3291	3504	3425	3149
64.0	2705	2711	2751	2824	2915	3058	3318	3575	3546	3281
64.5	2715	2721	2762	2838	2924	3075	3338	3636	3662	3422
65.0	2717	2724	2766	2845	2927	3086	3353	3687	3773	3564
65.5	2703	2712	2757	2839	2927	3086	3365	3718	3875	3701
66.0	2676	2688	2737	2821	2919	3077	3365	3737	3966	3832
66.5	2631	2645	2697	2787	2893	3052	3337	3749	4036	3956
67.0	2570	2587	2642	2738	2853	3016	3297	3746	4088	4066
67.5	2484	2502	2561	2666	2790	2969	3253	3714	4111	4147
68.0	2377	2396	2461	2576	2711	2908	3198	3661	4110	4206
68.5	2235	2256	2332	2460	2606	2818	3127	3571	4070	4227
69.0	2069	2093	2181	2323	2483	2710	3037	3464	4005	4220
69.5	1855	1887	1985	2151	2337	2580	2905	3352	3905	4169
70.0	1617	1655	1763	1953	2169	2431	2755	3223	3779	4085
70.5	1329	1368	1486	1701	1951	2244	2590	3056	3611	3949
71.0	1051	1088	1208	1437	1714	2034	2407	2869	3418	3782
71.5	859	887	984	1178	1453	1783	2183	2658	3197	3572
72.0	700	719	789	938	1193	1521	1941	2430	2955	3334
72.5	586	599	651	762	961	1257	1677	2167	2682	3056
73.0	492	500	539	616	754	1006	1409	1892	2394	2759
73.5	417	424	456	515	616	805	1145	1605	2089	2442
74.0	354	361	388	434	506	635	900	1322	1780	2118
74.5	300	307	333	372	427	524	715	1063	1469	1790
75.0	252	259	284	321	364	438	564	829	1171	1475
75.5	207	215	235	276	316	376	473	662	916	1207
76.0	168	178	192	237	278	328	405	528	700	971
76.5	145	152	165	209	248	291	354	447	578	797
77.0	128	131	144	185	223	260	313	386	490	655
77.5	113	115	126	159	202	232	274	336	422	560
78.0	101	103	112	137	182	207	239	293	368	484
78.5	91	93	100	122	159	181	209	255	325	419
79.0	84	86	91	110	139	158	182	221	287	362
79.5	78	80	85	101	125	140	157	191	247	313
80.0	74	75	80	93	113	124	136	164	210	270
80.5	69	69	74	85	101	110	119	141	177	227
81.0	64	64	68	77	91	97	104	120	148	187
81.5	59	60	63	71	82	86	91	102	122	151
82.0	56	56	59	65	73	77	80	87	99	118

**IES ROAD REPORT**  
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**CANDELA TABULATION - (Cont.)**

<b>82.5</b>	52	52	55	60	66	68	71	74	80	91
<b>83.0</b>	47	47	50	54	59	60	62	63	66	73
<b>83.5</b>	43	43	46	49	52	53	54	54	55	59
<b>84.0</b>	39	39	41	44	45	46	47	47	46	48
<b>84.5</b>	35	35	37	39	40	41	41	41	40	39
<b>85.0</b>	32	32	34	35	35	36	36	36	34	33
<b>85.5</b>	29	29	31	31	31	32	32	31	29	28
<b>86.0</b>	27	27	28	28	28	29	28	28	26	24
<b>86.5</b>	25	25	25	25	25	26	25	24	23	22
<b>87.0</b>	22	22	23	23	23	23	22	22	20	20
<b>87.5</b>	20	20	20	20	20	20	19	19	18	18
<b>88.0</b>	17	17	17	16	17	17	16	16	15	15
<b>88.5</b>	13	13	13	13	13	13	12	12	12	12
<b>89.0</b>	9	9	9	9	9	9	9	9	9	9
<b>89.5</b>	5	5	5	5	5	5	5	5	5	5
<b>90.0</b>	0	0	0	0	0	0	0	0	0	0

**Vert. Angles**      **Horizontal Angles**

	<u><b>50</b></u>	<u><b>55</b></u>	<u><b>60</b></u>	<u><b>65</b></u>	<u><b>70</b></u>	<u><b>75</b></u>	<u><b>80</b></u>	<u><b>85</b></u>	<u><b>90</b></u>	<u><b>95</b></u>
<b>0.0</b>	768	768	768	768	768	768	768	768	768	768
<b>0.5</b>	766	766	766	766	766	766	766	766	766	766
<b>1.0</b>	764	763	763	763	763	764	764	764	764	764
<b>1.5</b>	761	761	760	761	761	761	762	762	762	762
<b>2.0</b>	759	758	757	758	758	759	759	759	759	760
<b>2.5</b>	756	755	754	755	755	756	757	757	757	758
<b>3.0</b>	753	752	751	752	752	754	755	755	755	756
<b>3.5</b>	750	750	749	750	750	751	752	753	753	754
<b>4.0</b>	748	747	746	747	748	749	750	751	751	753
<b>4.5</b>	745	745	745	745	746	748	749	750	750	752
<b>5.0</b>	743	743	743	744	745	747	748	749	750	752
<b>5.5</b>	742	742	742	744	745	747	749	750	752	754
<b>6.0</b>	741	742	743	744	746	749	751	752	754	756
<b>6.5</b>	741	742	743	745	748	750	753	755	757	759
<b>7.0</b>	742	743	744	747	750	753	756	758	761	763
<b>7.5</b>	743	744	746	749	753	756	760	762	765	767
<b>8.0</b>	746	747	750	753	758	761	765	768	771	773
<b>8.5</b>	749	751	754	758	763	767	772	774	778	780
<b>9.0</b>	753	756	759	764	769	774	778	782	785	788
<b>9.5</b>	757	761	765	770	776	781	786	789	793	796
<b>10.0</b>	762	767	771	777	783	789	794	798	802	805
<b>10.5</b>	768	774	779	785	792	798	804	808	812	815
<b>11.0</b>	776	781	787	794	801	808	814	818	823	826
<b>11.5</b>	783	789	796	803	811	818	825	829	834	837
<b>12.0</b>	791	798	805	813	821	829	836	841	846	849
<b>12.5</b>	800	807	815	824	832	840	848	853	858	861
<b>13.0</b>	810	817	826	836	844	853	861	866	871	874
<b>13.5</b>	820	828	838	848	857	866	875	880	885	888
<b>14.0</b>	830	840	850	861	871	880	889	894	900	903
<b>14.5</b>	841	852	863	874	885	894	903	909	915	918
<b>15.0</b>	853	864	876	888	899	909	918	924	930	933
<b>15.5</b>	866	877	890	902	914	924	934	940	946	949
<b>16.0</b>	879	891	904	917	929	940	950	957	963	966
<b>16.5</b>	893	905	918	933	945	957	967	973	979	982
<b>17.0</b>	907	920	933	948	961	973	984	991	997	1000
<b>17.5</b>	921	935	948	964	977	990	1001	1008	1014	1017

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**CANDELA TABULATION - (Cont.)**

18.0	936	951	964	981	994	1008	1019	1026	1032	1035
18.5	951	966	981	998	1012	1025	1037	1044	1050	1053
19.0	967	982	998	1015	1029	1043	1055	1063	1068	1072
19.5	983	999	1015	1032	1047	1062	1073	1081	1087	1090
20.0	999	1015	1032	1050	1065	1080	1092	1100	1105	1109
20.5	1015	1032	1049	1068	1083	1098	1111	1118	1124	1127
21.0	1032	1049	1067	1085	1102	1117	1129	1137	1142	1146
21.5	1048	1066	1084	1103	1120	1135	1148	1155	1161	1164
22.0	1065	1082	1101	1121	1138	1154	1167	1174	1180	1183
22.5	1081	1099	1118	1138	1156	1172	1185	1192	1198	1201
23.0	1097	1115	1134	1155	1173	1189	1203	1210	1216	1219
23.5	1112	1131	1151	1171	1190	1207	1220	1228	1233	1236
24.0	1127	1146	1167	1188	1207	1224	1237	1245	1250	1254
24.5	1142	1161	1182	1204	1224	1240	1254	1263	1267	1271
25.0	1156	1176	1198	1220	1240	1257	1271	1280	1284	1288
25.5	1170	1190	1213	1235	1256	1273	1287	1296	1300	1304
26.0	1183	1204	1228	1251	1271	1289	1304	1312	1316	1320
26.5	1196	1218	1242	1266	1286	1305	1320	1328	1332	1336
27.0	1209	1231	1256	1281	1301	1321	1335	1344	1348	1352
27.5	1221	1244	1270	1295	1316	1336	1351	1359	1364	1368
28.0	1233	1257	1283	1309	1330	1351	1366	1374	1379	1384
28.5	1245	1269	1296	1323	1344	1366	1381	1390	1395	1399
29.0	1257	1281	1308	1336	1358	1380	1396	1405	1410	1415
29.5	1268	1293	1320	1349	1372	1395	1411	1420	1425	1430
30.0	1279	1305	1332	1362	1386	1409	1426	1435	1440	1446
30.5	1290	1316	1344	1375	1400	1423	1441	1450	1455	1462
31.0	1300	1326	1356	1387	1414	1437	1456	1466	1471	1477
31.5	1310	1336	1367	1399	1427	1451	1470	1481	1486	1493
32.0	1320	1346	1378	1411	1440	1464	1484	1496	1501	1508
32.5	1329	1355	1389	1422	1453	1477	1498	1510	1515	1523
33.0	1337	1364	1399	1432	1464	1489	1510	1523	1528	1537
33.5	1346	1372	1409	1442	1475	1501	1522	1535	1540	1550
34.0	1353	1380	1418	1452	1485	1512	1533	1546	1552	1563
34.5	1361	1388	1427	1461	1495	1523	1544	1558	1564	1575
35.0	1368	1395	1435	1470	1504	1534	1555	1569	1576	1588
35.5	1375	1402	1442	1479	1513	1544	1565	1580	1588	1600
36.0	1381	1408	1448	1487	1522	1553	1575	1591	1599	1613
36.5	1387	1414	1454	1495	1530	1562	1585	1601	1610	1625
37.0	1393	1420	1460	1503	1538	1570	1594	1611	1621	1637
37.5	1399	1425	1466	1510	1546	1578	1603	1621	1632	1649
38.0	1404	1430	1472	1516	1553	1585	1611	1630	1642	1661
38.5	1409	1435	1477	1522	1559	1591	1618	1638	1652	1673
39.0	1414	1439	1483	1527	1565	1596	1625	1647	1662	1685
39.5	1419	1443	1488	1532	1571	1602	1631	1655	1672	1697
40.0	1423	1447	1492	1537	1576	1607	1638	1663	1682	1710
40.5	1427	1450	1495	1541	1579	1611	1644	1671	1693	1723
41.0	1430	1453	1498	1544	1582	1616	1650	1679	1704	1737
41.5	1434	1456	1500	1547	1585	1620	1655	1687	1715	1751
42.0	1437	1459	1502	1549	1587	1624	1661	1696	1727	1766
42.5	1441	1461	1504	1552	1590	1629	1668	1705	1739	1781
43.0	1445	1462	1505	1554	1593	1634	1676	1716	1753	1797
43.5	1448	1463	1505	1555	1596	1639	1684	1727	1767	1814
44.0	1452	1465	1506	1557	1600	1645	1694	1739	1782	1831
44.5	1456	1466	1507	1559	1604	1652	1703	1752	1798	1849
45.0	1461	1468	1508	1562	1609	1659	1714	1766	1814	1867
45.5	1466	1471	1510	1566	1616	1668	1727	1782	1832	1886

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**CANDELA TABULATION - (Cont.)**

46.0	1472	1474	1512	1570	1624	1678	1740	1800	1850	1905
46.5	1478	1478	1515	1576	1632	1689	1754	1818	1868	1925
47.0	1485	1483	1519	1582	1641	1701	1770	1837	1888	1945
47.5	1493	1489	1524	1589	1652	1714	1786	1856	1908	1966
48.0	1503	1497	1531	1599	1665	1731	1805	1877	1930	1989
48.5	1515	1506	1540	1610	1679	1749	1825	1898	1953	2012
49.0	1527	1515	1550	1623	1694	1768	1846	1919	1976	2036
49.5	1541	1526	1561	1636	1710	1788	1868	1942	2000	2061
50.0	1556	1539	1573	1651	1727	1809	1891	1965	2024	2085
50.5	1574	1555	1588	1668	1747	1832	1916	1990	2049	2109
51.0	1593	1572	1604	1687	1768	1856	1942	2015	2074	2134
51.5	1613	1591	1621	1707	1790	1881	1968	2042	2100	2159
52.0	1635	1611	1640	1728	1814	1907	1995	2068	2125	2183
52.5	1659	1633	1660	1750	1838	1933	2022	2095	2151	2208
53.0	1687	1658	1684	1775	1865	1960	2050	2122	2177	2233
53.5	1718	1685	1709	1801	1893	1987	2077	2149	2203	2257
54.0	1749	1714	1736	1829	1922	2015	2105	2177	2229	2282
54.5	1783	1743	1764	1856	1951	2044	2133	2204	2254	2306
55.0	1818	1774	1793	1885	1980	2072	2161	2231	2280	2330
55.5	1856	1807	1823	1914	2007	2100	2186	2255	2304	2352
56.0	1896	1841	1855	1943	2035	2128	2211	2278	2328	2373
56.5	1939	1877	1888	1973	2063	2154	2235	2301	2352	2396
57.0	1983	1915	1922	2004	2092	2179	2260	2324	2376	2419
57.5	2028	1953	1957	2032	2119	2204	2285	2348	2400	2442
58.0	2075	1993	1993	2060	2147	2230	2310	2373	2424	2465
58.5	2123	2036	2030	2092	2177	2258	2336	2399	2448	2486
59.0	2174	2080	2069	2127	2208	2289	2364	2427	2473	2507
59.5	2232	2126	2109	2164	2242	2323	2399	2458	2500	2530
60.0	2292	2175	2152	2204	2280	2359	2437	2493	2530	2554
60.5	2354	2228	2199	2250	2323	2399	2479	2532	2564	2581
61.0	2419	2285	2250	2299	2370	2444	2526	2576	2602	2612
61.5	2485	2347	2305	2352	2423	2500	2581	2629	2650	2652
62.0	2557	2413	2366	2411	2484	2565	2646	2693	2707	2699
62.5	2643	2488	2437	2483	2561	2647	2731	2777	2782	2756
63.0	2737	2572	2518	2567	2652	2744	2833	2878	2869	2820
63.5	2847	2673	2617	2674	2769	2878	2977	3016	2982	2901
64.0	2967	2784	2729	2795	2902	3029	3136	3167	3106	2991
64.5	3104	2916	2864	2937	3060	3199	3303	3320	3236	3095
65.0	3249	3058	3010	3090	3228	3381	3482	3483	3374	3202
65.5	3414	3215	3169	3257	3408	3580	3691	3680	3531	3303
66.0	3580	3377	3334	3432	3598	3791	3915	3891	3700	3412
66.5	3733	3546	3513	3627	3818	4035	4174	4134	3909	3567
67.0	3875	3713	3692	3822	4038	4272	4426	4373	4113	3715
67.5	4003	3875	3874	4014	4243	4469	4629	4578	4271	3809
68.0	4113	4020	4038	4181	4413	4629	4793	4746	4392	3871
68.5	4187	4133	4151	4271	4480	4699	4874	4822	4430	3874
69.0	4228	4206	4219	4315	4503	4729	4916	4857	4434	3845
69.5	4210	4183	4190	4278	4478	4716	4911	4846	4412	3767
70.0	4148	4107	4115	4206	4430	4683	4883	4814	4373	3668
70.5	4008	3951	3992	4103	4373	4649	4848	4782	4327	3562
71.0	3828	3758	3840	3983	4297	4597	4790	4729	4256	3447
71.5	3596	3535	3660	3856	4193	4512	4688	4629	4128	3335
72.0	3338	3294	3460	3711	4063	4395	4550	4496	3969	3202
72.5	3059	3038	3238	3524	3886	4221	4346	4316	3775	3006
73.0	2770	2778	3000	3313	3676	4006	4097	4091	3545	2781
73.5	2482	2531	2741	3067	3412	3717	3771	3768	3236	2516

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**CANDELA TABULATION - (Cont.)**

<b>74.0</b>	2196	2284	2471	2798	3118	3390	3410	3406	2896	2231
<b>74.5</b>	1921	2024	2188	2485	2776	3007	3008	3005	2524	1916
<b>75.0</b>	1656	1768	1908	2169	2427	2614	2596	2594	2146	1602
<b>75.5</b>	1410	1531	1647	1888	2111	2243	2195	2193	1787	1328
<b>76.0</b>	1184	1309	1405	1622	1811	1889	1810	1800	1443	1070
<b>76.5</b>	1002	1122	1210	1376	1539	1580	1475	1428	1134	822
<b>77.0</b>	844	955	1034	1148	1289	1301	1174	1082	858	609
<b>77.5</b>	718	816	874	960	1090	1083	944	797	656	506
<b>78.0</b>	609	692	730	796	914	893	749	564	496	438
<b>78.5</b>	519	580	616	672	767	733	596	455	405	380
<b>79.0</b>	439	481	519	567	636	592	468	387	342	332
<b>79.5</b>	368	407	444	478	517	474	373	328	298	293
<b>80.0</b>	305	344	379	401	413	374	299	281	264	260
<b>80.5</b>	254	289	320	336	339	308	250	241	232	229
<b>81.0</b>	210	241	266	279	279	256	213	209	205	203
<b>81.5</b>	171	197	217	228	228	214	185	184	182	179
<b>82.0</b>	137	159	174	183	184	179	163	163	163	159
<b>82.5</b>	108	125	135	144	146	149	145	145	147	141
<b>83.0</b>	86	98	105	113	117	122	125	125	129	124
<b>83.5</b>	67	75	79	87	93	99	106	108	112	108
<b>84.0</b>	52	55	57	65	73	79	90	92	97	94
<b>84.5</b>	40	39	39	46	56	63	76	78	84	81
<b>85.0</b>	30	26	25	32	43	49	64	66	71	69
<b>85.5</b>	25	20	19	25	34	39	52	53	58	57
<b>86.0</b>	21	17	16	20	27	31	41	42	45	45
<b>86.5</b>	20	16	16	18	23	24	31	32	34	34
<b>87.0</b>	19	17	16	17	19	20	23	23	24	25
<b>87.5</b>	18	17	17	17	17	16	16	16	16	17
<b>88.0</b>	15	15	15	14	14	13	12	12	12	13
<b>88.5</b>	12	12	12	12	11	10	10	9	9	10
<b>89.0</b>	9	9	9	9	8	8	7	7	7	7
<b>89.5</b>	5	5	5	5	5	5	5	4	4	4
<b>90.0</b>	0	0	0	0	0	0	0	0	0	0

**Vert. Angles**      **Horizontal Angles**

	<b>100</b>	<b>105</b>	<b>110</b>	<b>115</b>	<b>120</b>	<b>125</b>	<b>130</b>	<b>135</b>	<b>140</b>	<b>145</b>
<b>0.0</b>	768	768	768	768	768	768	768	768	768	768
<b>0.5</b>	767	767	767	767	767	768	768	768	768	769
<b>1.0</b>	765	765	765	766	766	767	768	768	769	770
<b>1.5</b>	763	763	763	764	765	766	768	768	769	770
<b>2.0</b>	761	762	762	762	764	766	767	768	770	771
<b>2.5</b>	759	760	760	761	763	765	767	768	770	772
<b>3.0</b>	757	758	759	760	762	764	766	768	770	772
<b>3.5</b>	756	757	758	759	761	764	766	768	770	772
<b>4.0</b>	755	756	757	758	761	764	766	767	770	772
<b>4.5</b>	754	756	757	758	761	764	766	768	771	773
<b>5.0</b>	754	756	757	758	761	764	766	768	771	773
<b>5.5</b>	756	758	759	760	763	766	767	769	772	774
<b>6.0</b>	758	761	762	763	765	768	769	770	773	775
<b>6.5</b>	762	764	765	766	768	770	771	772	774	776
<b>7.0</b>	765	768	768	770	771	773	774	774	776	778
<b>7.5</b>	770	773	773	774	775	777	777	777	778	780
<b>8.0</b>	776	779	779	780	780	782	781	781	781	782
<b>8.5</b>	783	786	786	786	786	787	786	785	784	785
<b>9.0</b>	791	793	793	793	793	792	791	789	788	788

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**CANDELA TABULATION - (Cont.)**

9.5	799	801	801	800	800	798	797	795	792	792
10.0	808	809	809	808	807	805	803	800	797	796
10.5	818	819	818	817	815	812	810	806	803	801
11.0	829	829	828	826	824	820	817	813	809	807
11.5	840	840	839	836	832	829	824	820	816	813
12.0	852	852	850	846	842	838	832	828	823	820
12.5	864	864	861	857	852	847	841	836	831	827
13.0	877	877	873	869	863	858	851	845	840	835
13.5	891	890	886	882	875	869	862	855	849	843
14.0	905	904	900	895	888	881	873	866	858	852
14.5	920	918	914	908	900	893	885	877	868	861
15.0	935	933	928	922	914	906	897	888	878	870
15.5	951	949	943	937	929	920	910	900	889	880
16.0	967	965	959	952	944	935	924	912	900	890
16.5	984	981	975	968	959	950	938	925	912	900
17.0	1001	998	992	984	976	965	953	938	924	910
17.5	1018	1015	1009	1001	992	981	968	952	936	921
18.0	1036	1033	1026	1018	1009	998	984	967	949	932
18.5	1054	1051	1044	1036	1027	1015	999	982	963	943
19.0	1072	1070	1062	1054	1045	1032	1016	997	977	955
19.5	1090	1088	1080	1072	1063	1050	1032	1013	991	967
20.0	1109	1107	1099	1091	1081	1068	1049	1029	1005	979
20.5	1128	1126	1118	1110	1100	1087	1067	1045	1019	992
21.0	1147	1145	1137	1129	1118	1105	1085	1061	1034	1006
21.5	1166	1163	1157	1148	1137	1124	1103	1078	1049	1019
22.0	1184	1182	1176	1168	1156	1143	1121	1094	1064	1033
22.5	1203	1201	1195	1187	1175	1162	1139	1111	1079	1047
23.0	1221	1219	1214	1206	1194	1180	1157	1128	1094	1060
23.5	1239	1237	1232	1225	1213	1199	1175	1145	1110	1074
24.0	1256	1255	1250	1243	1232	1217	1192	1162	1126	1088
24.5	1274	1273	1269	1262	1251	1236	1210	1179	1142	1102
25.0	1291	1291	1287	1281	1270	1254	1228	1196	1158	1117
25.5	1308	1309	1305	1300	1289	1272	1246	1213	1175	1134
26.0	1325	1326	1324	1318	1307	1291	1264	1231	1192	1152
26.5	1341	1343	1342	1337	1326	1309	1282	1249	1210	1171
27.0	1358	1361	1360	1355	1344	1327	1300	1267	1228	1190
27.5	1374	1378	1378	1374	1363	1346	1318	1285	1247	1210
28.0	1390	1395	1396	1393	1382	1365	1337	1305	1268	1233
28.5	1407	1412	1414	1411	1400	1384	1356	1325	1291	1256
29.0	1423	1429	1431	1430	1419	1403	1375	1345	1313	1280
29.5	1439	1446	1449	1448	1438	1422	1395	1366	1336	1304
30.0	1455	1463	1467	1467	1457	1441	1415	1388	1360	1329
30.5	1471	1480	1485	1486	1477	1461	1438	1413	1386	1355
31.0	1488	1498	1504	1505	1497	1482	1461	1438	1412	1380
31.5	1504	1515	1522	1525	1517	1503	1484	1464	1438	1405
32.0	1520	1533	1541	1544	1537	1524	1508	1489	1464	1430
32.5	1536	1550	1559	1563	1557	1545	1532	1515	1489	1453
33.0	1551	1567	1578	1582	1577	1568	1557	1540	1513	1473
33.5	1565	1583	1596	1601	1597	1590	1581	1565	1536	1492
34.0	1579	1599	1614	1620	1617	1613	1606	1589	1558	1509
34.5	1593	1615	1632	1638	1638	1636	1630	1613	1579	1525
35.0	1607	1631	1650	1657	1658	1659	1653	1635	1598	1539
35.5	1621	1646	1666	1676	1679	1682	1675	1655	1613	1548
36.0	1635	1661	1682	1695	1700	1705	1697	1674	1626	1555
36.5	1648	1676	1697	1713	1721	1727	1718	1691	1638	1560
37.0	1662	1690	1712	1732	1742	1749	1738	1707	1648	1563

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**CANDELA TABULATION - (Cont.)**

37.5	1676	1705	1728	1750	1763	1770	1757	1722	1655	1564
38.0	1690	1720	1745	1767	1783	1790	1775	1733	1658	1560
38.5	1704	1736	1761	1785	1803	1809	1791	1743	1659	1553
39.0	1718	1751	1778	1802	1823	1828	1806	1751	1658	1544
39.5	1732	1767	1796	1819	1842	1846	1820	1757	1655	1534
40.0	1747	1783	1813	1836	1860	1862	1832	1761	1650	1522
40.5	1763	1800	1831	1855	1877	1876	1840	1761	1642	1508
41.0	1778	1817	1850	1874	1894	1889	1845	1758	1632	1493
41.5	1795	1834	1868	1892	1910	1901	1849	1754	1620	1476
42.0	1811	1851	1886	1911	1925	1911	1851	1747	1607	1458
42.5	1828	1869	1905	1929	1939	1920	1851	1738	1591	1439
43.0	1846	1889	1924	1947	1952	1926	1846	1723	1571	1418
43.5	1865	1908	1943	1964	1964	1929	1839	1706	1549	1395
44.0	1883	1929	1961	1980	1974	1931	1830	1687	1526	1371
44.5	1902	1949	1980	1996	1984	1931	1818	1666	1501	1344
45.0	1922	1969	1998	2011	1992	1929	1805	1644	1474	1314
45.5	1942	1989	2016	2025	1997	1921	1787	1620	1445	1277
46.0	1963	2009	2033	2037	2001	1911	1768	1595	1415	1236
46.5	1984	2028	2050	2049	2004	1899	1746	1569	1382	1192
47.0	2006	2048	2067	2060	2005	1885	1723	1541	1348	1146
47.5	2027	2067	2083	2069	2004	1869	1698	1511	1310	1096
48.0	2049	2086	2098	2076	2000	1850	1670	1478	1265	1037
48.5	2071	2105	2112	2081	1993	1829	1641	1442	1217	974
49.0	2093	2124	2126	2086	1985	1807	1610	1405	1167	910
49.5	2115	2143	2139	2089	1975	1784	1578	1365	1115	844
50.0	2137	2161	2152	2091	1963	1759	1544	1322	1060	778
50.5	2160	2180	2164	2091	1946	1733	1508	1271	998	711
51.0	2182	2198	2176	2090	1927	1707	1471	1216	934	643
51.5	2205	2216	2187	2088	1906	1679	1432	1159	868	577
52.0	2227	2234	2197	2084	1884	1650	1392	1100	801	513
52.5	2249	2251	2206	2080	1862	1618	1347	1037	733	452
53.0	2270	2267	2212	2074	1841	1582	1292	964	660	401
53.5	2292	2282	2217	2066	1819	1543	1233	889	586	355
54.0	2312	2297	2220	2057	1797	1504	1176	812	514	313
54.5	2333	2311	2224	2047	1773	1463	1122	737	444	274
55.0	2353	2325	2227	2036	1748	1421	1084	664	380	241
55.5	2372	2338	2232	2022	1721	1379	1121	601	331	224
56.0	2391	2351	2237	2006	1690	1336	1129	541	291	212
56.5	2410	2363	2238	1989	1650	1290	932	477	263	201
57.0	2428	2374	2237	1970	1610	1244	724	415	240	193
57.5	2446	2384	2235	1950	1576	1207	674	364	223	188
58.0	2463	2394	2232	1930	1544	1168	656	319	210	184
58.5	2479	2402	2228	1911	1512	1122	621	287	199	175
59.0	2496	2411	2223	1891	1479	1057	583	260	190	167
59.5	2514	2425	2218	1869	1443	919	533	239	186	162
60.0	2534	2439	2211	1847	1408	787	483	222	182	159
60.5	2555	2452	2200	1825	1381	757	444	208	172	155
61.0	2579	2464	2188	1801	1353	746	408	197	163	152
61.5	2611	2474	2181	1765	1314	710	372	191	158	149
62.0	2646	2485	2174	1731	1272	673	339	187	155	146
62.5	2685	2501	2165	1716	1232	651	317	183	151	143
63.0	2727	2517	2157	1702	1189	632	300	180	148	140
63.5	2771	2532	2157	1672	1140	604	287	177	145	137
64.0	2820	2544	2156	1637	1073	576	276	174	142	134
64.5	2885	2551	2142	1600	932	552	261	165	138	131
65.0	2950	2561	2122	1560	797	526	247	156	135	128

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**CANDELA TABULATION - (Cont.)**

65.5	2995	2596	2091	1516	762	487	234	148	132	125
66.0	3041	2627	2055	1469	748	448	221	140	129	122
66.5	3117	2622	2020	1417	722	418	208	135	125	119
67.0	3190	2606	1984	1362	694	391	196	131	122	116
67.5	3235	2594	1958	1304	658	367	190	128	119	113
68.0	3254	2572	1921	1242	624	343	186	125	116	111
68.5	3206	2518	1843	1171	609	312	183	122	113	108
69.0	3133	2444	1751	1107	591	282	179	119	110	105
69.5	3043	2337	1649	1098	541	260	168	116	107	102
70.0	2937	2215	1539	1062	483	241	156	113	104	99
70.5	2804	2077	1412	850	426	223	144	109	101	96
71.0	2658	1930	1281	635	372	207	134	106	99	94
71.5	2510	1778	1158	579	327	197	127	103	96	92
72.0	2350	1622	1024	549	286	186	121	100	93	90
72.5	2163	1458	836	476	254	165	116	97	90	88
73.0	1962	1293	663	401	226	144	111	94	88	85
73.5	1740	1130	599	345	207	134	106	91	85	82
74.0	1514	962	556	298	189	126	102	88	83	80
74.5	1300	761	480	263	166	119	98	85	80	77
75.0	1083	581	406	234	145	112	94	83	78	75
75.5	829	517	355	215	134	106	90	81	75	72
76.0	606	478	313	201	125	100	86	78	73	70
76.5	533	415	280	191	117	95	83	75	71	67
77.0	494	356	252	180	110	90	80	72	68	65
77.5	426	316	227	155	102	85	77	69	65	62
78.0	362	283	206	130	95	81	73	66	62	60
78.5	320	255	195	116	88	76	69	63	59	58
79.0	287	231	183	106	82	71	65	60	57	55
79.5	256	208	154	96	75	66	60	57	55	52
80.0	228	187	125	87	68	62	56	53	52	49
80.5	202	167	108	79	63	58	52	49	49	46
81.0	179	148	95	71	58	54	49	46	45	43
81.5	158	130	85	65	54	50	45	43	42	40
82.0	139	114	75	59	50	46	42	39	38	37
82.5	123	100	67	53	46	42	39	36	35	34
83.0	109	87	59	48	42	38	36	33	32	31
83.5	96	76	53	43	38	35	32	30	30	29
84.0	85	65	46	38	34	32	29	28	27	27
84.5	75	56	41	34	30	29	27	25	25	25
85.0	65	47	36	30	27	26	24	23	23	23
85.5	54	40	31	27	25	24	23	22	22	22
86.0	43	33	27	24	23	22	22	21	22	22
86.5	34	27	24	22	21	21	21	20	22	22
87.0	25	22	20	19	19	19	20	19	21	21
87.5	17	17	17	17	17	17	18	18	20	20
88.0	13	13	14	14	14	14	15	15	17	17
88.5	10	10	11	11	11	11	11	11	13	13
89.0	7	7	7	7	7	7	8	8	8	8
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. Horizontal Angles**

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
<b>0.0</b>	768	768	768	768	768	768	768
<b>0.5</b>	769	769	770	770	770	770	770

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**CANDELA TABULATION - (Cont.)**

1.0	770	771	772	771	771	772	772
1.5	772	772	773	773	773	774	774
2.0	773	774	775	775	775	776	776
2.5	774	775	777	777	777	778	778
3.0	774	775	778	778	778	779	779
3.5	774	776	778	778	779	780	780
4.0	774	776	778	779	779	780	781
4.5	775	776	779	779	780	781	782
5.0	775	777	779	780	781	782	783
5.5	776	778	780	781	782	783	784
6.0	777	779	781	782	784	785	786
6.5	779	781	783	784	785	787	788
7.0	780	782	784	785	787	789	790
7.5	782	784	786	787	789	791	792
8.0	784	786	788	789	792	794	795
8.5	786	788	790	792	795	797	798
9.0	789	790	793	795	798	800	801
9.5	792	793	796	798	801	804	805
10.0	795	796	799	802	805	808	809
10.5	800	800	803	807	810	813	814
11.0	805	805	808	811	814	818	819
11.5	811	811	813	816	819	823	825
12.0	817	816	818	822	825	829	830
12.5	824	822	823	827	830	834	836
13.0	831	828	829	832	836	840	842
13.5	838	835	835	838	841	845	847
14.0	846	842	841	843	847	851	853
14.5	854	849	847	848	852	856	858
15.0	862	856	853	854	858	862	864
15.5	871	864	859	860	863	867	870
16.0	879	871	866	865	868	873	875
16.5	888	879	873	871	874	878	881
17.0	898	887	879	877	879	884	886
17.5	907	895	886	883	884	889	892
18.0	917	903	893	889	889	894	897
18.5	927	911	900	895	895	900	903
19.0	937	919	907	901	900	905	908
19.5	947	927	914	907	906	910	913
20.0	958	936	921	913	912	916	919
20.5	969	945	929	919	918	922	925
21.0	980	954	937	926	924	928	930
21.5	991	964	945	933	931	934	936
22.0	1002	974	954	941	937	941	943
22.5	1014	984	963	949	945	948	950
23.0	1026	996	973	959	954	957	959
23.5	1039	1008	984	970	965	968	970
24.0	1052	1020	996	981	976	979	981
24.5	1066	1034	1008	994	987	990	992
25.0	1081	1048	1022	1007	1000	1003	1005
25.5	1098	1065	1039	1024	1017	1019	1021
26.0	1116	1084	1058	1042	1034	1036	1038
26.5	1135	1103	1077	1060	1053	1053	1056
27.0	1155	1123	1096	1079	1071	1071	1073
27.5	1175	1143	1116	1098	1089	1088	1090
28.0	1198	1165	1138	1117	1107	1105	1106
28.5	1222	1188	1159	1137	1124	1121	1121

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**CANDELA TABULATION - (Cont.)**

29.0	1246	1210	1181	1155	1141	1136	1135
29.5	1270	1233	1202	1173	1157	1150	1148
30.0	1294	1255	1222	1190	1171	1163	1160
30.5	1318	1277	1239	1204	1182	1171	1168
31.0	1342	1297	1255	1216	1191	1178	1174
31.5	1364	1317	1270	1227	1198	1183	1178
32.0	1386	1335	1283	1237	1203	1186	1180
32.5	1406	1351	1293	1243	1206	1186	1180
33.0	1422	1361	1297	1243	1202	1180	1173
33.5	1435	1369	1298	1239	1195	1171	1163
34.0	1447	1374	1298	1234	1187	1161	1152
34.5	1457	1378	1296	1228	1178	1149	1140
35.0	1464	1379	1292	1220	1167	1137	1127
35.5	1466	1374	1285	1210	1156	1125	1115
36.0	1465	1367	1277	1199	1144	1113	1102
36.5	1462	1359	1268	1187	1131	1100	1089
37.0	1458	1349	1257	1175	1118	1087	1075
37.5	1452	1338	1246	1162	1105	1074	1062
38.0	1444	1327	1234	1151	1094	1063	1051
38.5	1433	1316	1221	1139	1083	1053	1041
39.0	1422	1304	1206	1126	1072	1041	1029
39.5	1409	1291	1191	1113	1059	1028	1016
40.0	1395	1276	1175	1098	1044	1013	1001
40.5	1379	1260	1158	1081	1025	992	980
41.0	1362	1242	1140	1062	1003	969	956
41.5	1343	1223	1121	1040	979	943	930
42.0	1322	1202	1098	1016	952	913	900
42.5	1300	1177	1072	986	919	878	865
43.0	1274	1144	1034	942	870	827	814
43.5	1247	1108	993	892	816	771	757
44.0	1217	1069	948	840	760	713	699
44.5	1184	1028	900	786	702	654	640
45.0	1147	982	848	729	643	595	581
45.5	1099	926	786	667	585	539	526
46.0	1047	867	720	605	527	485	473
46.5	992	806	654	543	471	433	422
47.0	936	745	588	482	417	384	374
47.5	876	682	525	426	368	339	330
48.0	810	618	470	382	333	308	300
48.5	743	555	419	344	302	282	276
49.0	675	493	371	308	275	260	255
49.5	608	434	326	276	251	240	236
50.0	543	380	287	249	231	223	221
50.5	485	341	263	233	219	213	211
51.0	430	308	246	221	210	205	204
51.5	378	278	231	211	203	199	199
52.0	330	251	218	204	197	194	194
52.5	288	229	208	197	192	190	190
53.0	262	215	199	190	187	185	185
53.5	242	205	192	185	181	180	180
54.0	225	197	185	179	177	176	176
54.5	211	191	180	175	173	172	172
55.0	200	185	175	171	169	168	168
55.5	192	179	171	168	166	165	165
56.0	186	173	168	165	163	162	162
56.5	179	169	164	162	160	159	159

**IES ROAD REPORT**  
**PHOTOMETRIC FILENAME : L091603903.IES**

**CANDELA TABULATION - (Cont.)**

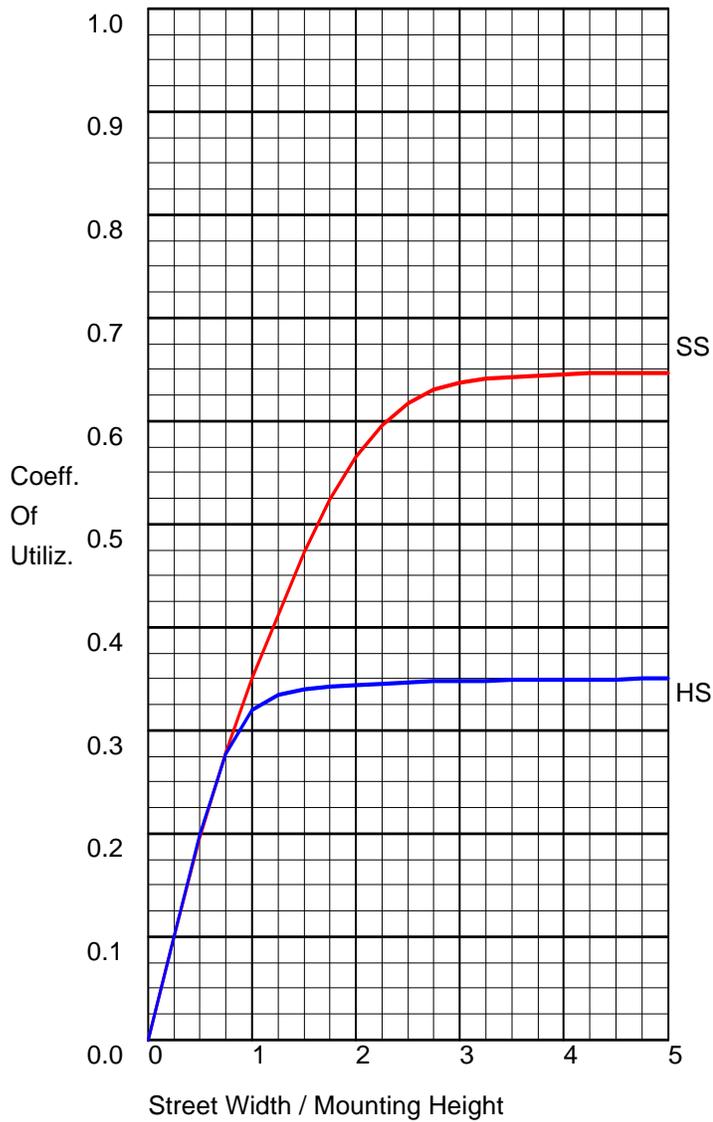
57.0	172	165	161	159	157	156	156
57.5	168	162	158	156	154	153	153
58.0	164	159	155	153	151	150	150
58.5	161	156	153	149	148	147	146
59.0	158	153	150	146	145	144	143
59.5	155	150	147	143	142	141	140
60.0	152	147	143	140	140	139	138
60.5	149	144	140	137	138	136	136
61.0	146	141	137	135	135	133	133
61.5	143	138	134	132	132	130	130
62.0	141	136	132	129	129	128	127
62.5	138	133	130	126	126	126	124
63.0	135	130	127	124	124	124	122
63.5	132	127	124	121	122	122	120
64.0	129	125	121	119	119	120	118
64.5	126	122	118	116	116	117	116
65.0	123	119	116	114	113	115	114
65.5	120	116	113	111	110	113	112
66.0	118	113	111	109	108	111	111
66.5	115	110	108	106	106	109	110
67.0	112	108	106	104	104	107	109
67.5	109	105	103	101	102	104	108
68.0	106	103	101	99	99	102	106
68.5	103	100	98	97	96	100	105
69.0	101	98	96	95	94	99	103
69.5	98	95	93	92	92	97	101
70.0	96	93	91	90	90	94	98
70.5	93	91	89	88	87	92	96
71.0	91	89	87	86	85	90	93
71.5	89	87	85	84	83	88	90
72.0	87	84	82	81	81	85	87
72.5	85	81	79	78	79	82	84
73.0	82	79	77	76	77	79	81
73.5	79	77	75	74	75	76	77
74.0	77	75	73	72	73	74	74
74.5	74	73	70	70	71	71	71
75.0	72	70	68	67	68	68	68
75.5	70	67	66	64	66	65	64
76.0	68	65	64	62	63	62	61
76.5	66	63	62	59	60	58	58
77.0	63	61	59	57	57	55	55
77.5	60	58	56	55	54	52	52
78.0	58	55	53	53	52	50	50
78.5	55	52	50	50	50	48	47
79.0	53	50	48	48	47	45	44
79.5	51	48	46	46	44	42	41
80.0	48	45	44	44	41	39	39
80.5	45	42	42	41	38	37	37
81.0	42	40	39	39	36	35	34
81.5	39	37	37	36	33	33	32
82.0	36	34	34	34	31	31	30
82.5	33	32	32	31	29	29	28
83.0	30	30	30	29	27	27	26
83.5	28	27	28	27	26	26	25
84.0	26	25	25	25	24	24	24
84.5	24	23	24	23	23	23	23

**IES ROAD REPORT**  
**PHOTOMETRIC FILENAME : L091603903.IES**

**CANDELA TABULATION - (Cont.)**

<b>85.0</b>	22	22	22	22	22	22	22
<b>85.5</b>	22	22	22	22	22	22	22
<b>86.0</b>	22	22	22	22	22	22	22
<b>86.5</b>	22	22	22	22	22	22	22
<b>87.0</b>	22	22	22	22	22	22	22
<b>87.5</b>	21	21	21	21	21	21	21
<b>88.0</b>	18	18	18	18	18	18	18
<b>88.5</b>	13	13	13	13	13	13	13
<b>89.0</b>	9	9	9	9	9	9	9
<b>89.5</b>	4	4	4	4	4	4	4
<b>90.0</b>	0	0	0	0	0	0	0

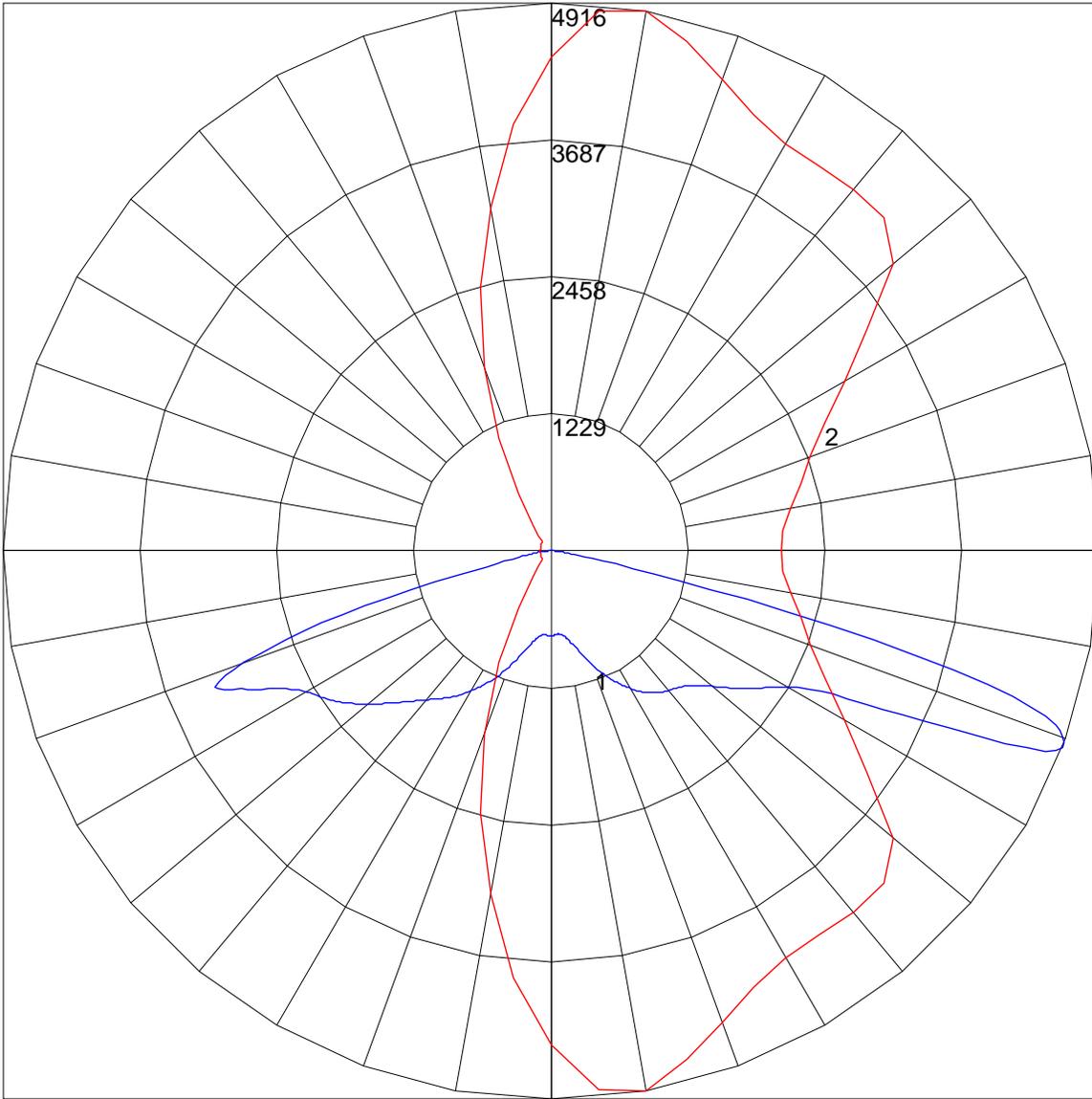
**COEFFICIENTS OF UTILIZATION**



**FLUX DISTRIBUTION**

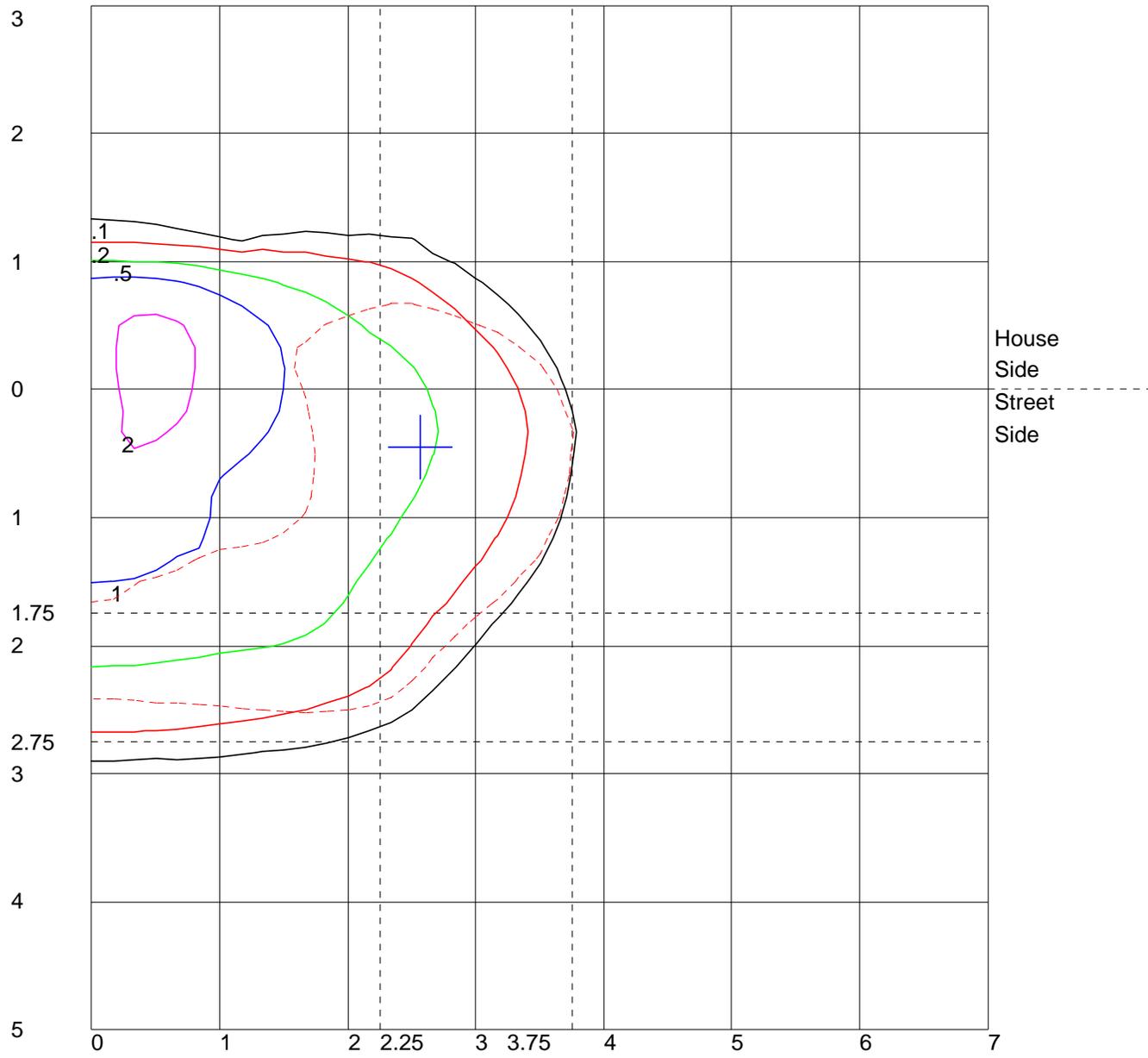
	Lumens	Percent Of Luminaire
Downward Street Side	4849.8	64.9
Downward House Side	2623.6	35.1
Downward Total	7473.4	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
<b>Total Flux</b>	<b>7473.4</b>	<b>100.0</b>

POLAR GRAPH



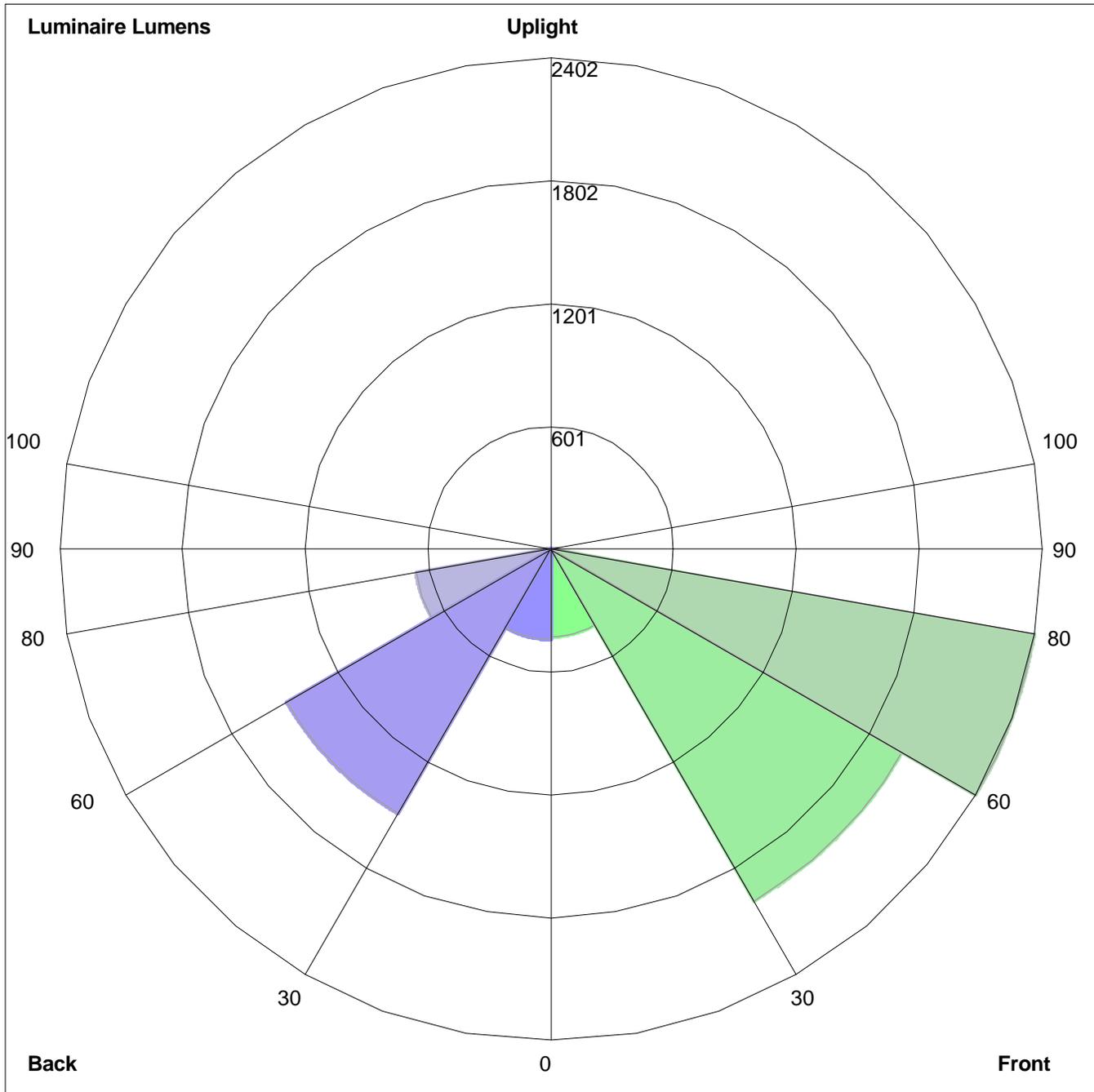
Maximum Candela = 4916 Located At Horizontal Angle = 80, Vertical Angle = 69  
# 1 - Vertical Plane Through Horizontal Angles (80 - 260) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (69) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



Distance In Units Of Mounting Height  
 Values Based On 20 Foot Mounting Height  
 1/2 Maximum Candela Trace Shown As Dashed Curve  
 (+) = Maximum Candela Point

LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:  
Front: Low=426.7, Medium=1985.3, High=2402.2, Very High=35.6  
Back: Low=439.7, Medium= 1494.0, High=669.6, Very High=20.3  
Uplight: Low=0.0, High=0.0

BUG Rating : B2-U0-G2